TITLE 13

FLOOD CONTROL

CHAPTER 1

FLOOD HAZARD AREA DEVELOPMENT

SECTION:

13-1-1: **PURPOSE:** This chapter is enacted pursuant to the police powers granted to this city by Illinois Compiled Statutes[1]. 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

1. 65 ILCS 5/1-2-1, 5/11-12-12, 5/11-30-2, 5/11-30-8, 5/11-31-2.

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and related land resources. This chapter is adopted in order to accomplish the following specific purposes:

A. To meet the requirements of an act in relation to the regulation of the rivers, lakes and streams of the state of Illinois[1].

B. To assure that new development does not increase the flood or drainage hazards to others, or creating 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;

I. To preserve the natural hydrologic and hydraulic functions of watercourses and floodplains and to protect water quality and aquatic habitats;

J. To preserve the natural characteristics of stream corridors 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. (1975 Code § 8-200)

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1. 615 ILCS 5/18g.

13-1-2: **DEFINITIONS:** For the purposes of this chapter, the following definitions are adopted:

ACT: An act in relation to the regulation of the rivers, lakes and streams of the state of Illinois[1].

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

APPROPRIATE USE: Only uses of the regulatory floodway that are permissible and will be considered for permit issuance. The only uses that will be allowed are as specified in section 13-1-7-2 of this chapter.

BASE FLOOD: The flood having a one percent (1%) probability of being equaled or exceeded in any given year. The base flood is also known as the 100-year frequency flood event. Application of the base flood elevation at any location is as defined in section 13-1-5 of this chapter.

BUILDING: A structure that is principally aboveground and is enclosed by walls and a roof. The term includes a gas or liquid storage tank, a manufactured home, mobile home or a prefabricated building. This term also includes recreational vehicles and travel trailers to be installed on a site for more than one hundred eighty (180) days.

CHANNEL: Any river, stream, creek, brook, branch, natural or artificial depression, ponded area, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or manmade drainageway, which has a definite bed and banks or shoreline, in or into which surface or ground water 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, riprapping (or other armoring), widening,

1. 615 Illinois Compiled Statutes 5/5 et seq.

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deepening, straightening, relocating, lining and significant removal of bottom or woody vegetation. 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 SFHA 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 LETTER OF MAP REVISION (CLOMR): A letter which indicates that the federal emergency management agency of a proposed change to the floodway map. This preconstruction approval, pursuant to this chapter, 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 the federal emergency management agency 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.

CONTROL STRUCTURE: A structure designed to control the rate of flow that passes through the structure, given a specific upstream and downstream water surface elevation.

DWR: Illinois department of transportation, division of water resources.

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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. Underground water storage tanks are not included.

DEVELOPMENT: Any manmade change to real estate, including:

A. Construction, reconstruction, repair or placement of a building or any addition to a building.

B. Installing a manufactured home on a site, preparing a site for a manufactured home, or installing a travel trailer on a site for more than one hundred eighty (180) days.

C. Drilling, mining, installing utilities, construction of roads, bridges or similar projects.

D. Demolition of a structure or redevelopment of a site.

E. Clearing of land as an adjunct of construction.

F. Construction or erection of levees, walls, fences, dams or culverts; channel modification; filling, dredging, grading, excavating, paving or other nonagricultural alterations of the ground surface; storage of materials; deposit of solid or liquid waste.

G. Any other activity of man that might change the direction, height or velocity of flood or surface water, including extensive vegetation removal.

Development does not include maintenance of existing buildings and facilities such as reroofing or resurfacing of roads when there is no increase in elevation, or gardening, plowing and similar agricultural practices that do not involve filling, grading or construction of levees.

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ELEVATION CERTIFICATES:	A form published by the federal emergency management agency 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 state law, including state, federal or local units of government.
FEMA:	Federal emergency management agency and its regulations at 44 CFR 59 79 effective as of October 1, 1986.
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 regulatory floodway.
FLOOD INSURANCE RATE MAPS (FIRM):	A map prepared by the federal emergency management agency that depicts the special flood hazard area (SFHA) within a community. This map includes insurance rate zones and floodplains and may or may not depict floodways.
FLOOD PROTECTION ELEVATION (FPE):	The elevation of the base flood or 100-year frequency flood plus one foot (1') of freeboard at any given location in the SFHA.
FLOODPLAIN:	That land typically adjacent to a body of water with ground surface elevations at or below the base flood or the 100-year frequency flood elevation. Floodplains may also include

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detached special flood hazard areas, ponding areas, etc. The floodplain is also known as the special flood hazard area (SFHA). The floodplains are those lands within the jurisdiction of the city that are subject to inundation by the base flood or 100-year frequency flood. The SFHAs of the city are generally identified as such on the flood insurance rate map of the city prepared by the federal emergency management agency (or HUD community panel numbers 170325 0001-0003) and dated August 3, 1981. The SFHAs of those parts of unincorporated Kane County that are within the extraterritorial jurisdiction of the city or that may be annexed into the city are generally identified as such on the flood insurance rate map prepared for county by the federal emergency management agency (or HUD) and dated March 1, 1982, community panel number 170896 0045.

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.

FLOODPROOFING CERTIFICATE: A form published by the federal emergency management agency that is used to certify that a building has been designed and constructed to be structurally dry floodproofed to the flood protection elevation.

FREEBOARD: An increment of elevation added to the base flood elevation to provide a factor of safety for uncertainties in calculations, unknown localized conditions, wave actions and unpredictable effects such as those caused by ice or debris jams.

HYDROLOGIC AND HYDRAULIC CALCULATIONS: Engineering analysis which determine expected flood flows and flood elevations based on land characteristics and rainfall events.

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LETTER OF MAP AMENDMENT (LOMA):	Official determination by FEMA that a specific structure is not in a 100-year flood zone; amends the effective flood hazard boundary map or FIRM.
LETTER OF MAP REVISION (LOMR):	Letter that revises base flood or 100-year frequency flood elevations, flood insurance rate zones, flood boundaries or floodways as shown on an effective FHBM or FIRM.
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 connected to the required utilities. The term manufactured homes also includes park trailers, travel trailers and other similar vehicles placed on site for more than one hundred eighty (180) consecutive days.
MANUFACTURED HOME PARK OR SUBDIVISION:	A parcel (or contiguous parcels) of land divided into two (2) or more manufactured home lots for rent or sale.
MITIGATION:	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.
NGVD:	National geodetic vertical datum of 1929. Reference surface set by the national geodetic survey deduced from a continental adjustment of all existing adjustments in 1929.
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 of 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 reestablished. Similar 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 which includes 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.
PUBLICLY NAVIGABLE WATERS:	All streams and lakes capable of being navigated by watercraft.
REGISTERED LAND SURVEYOR:	A land surveyor registered in the state of Illinois under the Illinois land surveyors act[1].
REGISTERED PROFESSIONAL ENGINEER:	An engineer registered in the state of Illinois, under the Illinois professional engineering act[2].

1. 225 ILCS 330/1 et seq.
2. 225 ILCS 325/1 et seq.

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REGULATORY FLOODWAY: The channel, including on-stream lakes, and that portion of the floodplain adjacent to a stream or watercourse as designated by DWR, which is needed to store and convey the existing and anticipated future 100-year frequency flood discharge with no more than a one-tenth of one foot (0.1') increase in stage due to the loss of flood conveyance or storage, and no more than a ten percent (10%) increase in velocities. The regulatory floodways are designated for the Fox River on the flood boundary and floodway map prepared by FEMA (or HUD community panel numbers 170325 0001-0003) and dated August 3, 1981. The regulatory floodways for those parts of unincorporated Kane County that are within the extraterritorial jurisdiction of the city that may be annexed into the city are designated for the Fox River on the flood boundary and floodway map prepared by FEMA (or HUD) and dated March 1, 1982, community panel number 170896 0045. To locate the regulatory floodway boundary on any site, the regulatory floodway boundary should be scaled off the regulatory 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 regulatory floodway boundary, the division should be contacted for the interpretation.

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.

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 SFHA: Any SFHA subject to flooding from a river, creek, intermittent stream, ditch, on stream lake system or any other identified channel. This

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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.

SPECIAL FLOOD HAZARD AREA (SFHA): Any base flood area subject to flooding from a river, creek, intermittent stream, ditch, or any other identified channel or ponding and shown on a flood hazard boundary map or flood insurance rate map as zone A, AO, A1-30, AE, A99, AH, VO, V30, VE, V, M, or E.

STRUCTURE: The results of a manmade change to the land constructed on or below the ground, including the construction, reconstruction or placement of a building or any addition to a building; installing a manufactured home on a site; preparing a site for a manufactured home or installing a travel trailer on a site for more than one hundred eighty (180) days.

SUBSTANTIAL IMPROVEMENT: Any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds fifty percent (50%) of the market value of the structure either: a) before the improvement or repair is started; or b) if the structure has been damaged, and is being restored, before the damage occurred. For the purposes of this definition "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 structure. 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 structure listed on the National Register of Historic Places or a state inventory of historic places.

TRANSITION SECTION: Reaches of the stream or floodway where water flows from a narrow cross section to a wide cross section or vice versa. (1975 Code § 8-300; amd. 2003 Code)

13-1-3: ADMINISTRATION AND ENFORCEMENT:

A. Enforcement Official: The director of public works shall be responsible for fulfilling all of the duties listed in section 13-1-4 of this chapter.

B. Use Of Criteria:

1. To fulfill those duties, the director of public works first should use the criteria listed in section 13-1-5 of this chapter, to determine whether the development site is located within a floodplain. Once it has been determined that a site is located within a floodplain, the director of public works must determine whether the development site is within a flood fringe, a regulatory floodway, or within a SFHA or floodplain on which no floodway has been identified.

a. If the site is within a flood fringe, the director of public works shall require that the minimum requirements of section 13-1-6 of this chapter.

b. If the site is within a floodway, the director of public works shall require that the minimum requirements of section 13-1-7 of this chapter be met.

c. If the site is located within a SFHA or floodplain for which no detailed study has been completed and approved, the director of public works shall require that the minimum requirements of section 13-1-8 of this chapter be met.

2. In addition, the general requirements of section 13-1-9 of this chapter shall be met for all developments meeting the requirements of section 13-1-6, 13-1-7 or 13-1-8 of this chapter. The director of

public works shall assure that all subdivision proposals shall meet the requirements of section 13-1-10 of this chapter.

3. If a variance is to be granted for a proposal, the director of public works shall review the requirements of section 13-1-11 of this chapter to make sure they are met. In addition, the director of public works shall complete all notification requirements.

4. In order to assure that property owners obtain permits as required in this chapter, the director of public works may take any and all actions as outlined in section 13-1-13 of this chapter. (1975 Code § 8-400)

13-1-4: **DUTIES OF ENFORCEMENT OFFICIAL:** The director of public works shall be responsible for the general administration and enforcement of this chapter which shall include the following: (1975 Code § 8-500)

A. Determining Floodplain Designation: Check all new development sites to determine whether they are in a special flood hazard area (SFHA). If they are in a SFHA, determine whether they are a floodway, flood fringe or in a floodplain on which a detailed study has not been conducted which drains more than one square mile. (1975 Code § 8-501.0)

B. Professional Engineer Review: If the development site is within a floodway or in a floodplain on which a detailed study has not been conducted which drains more than one square mile, then the permit shall be referred to a registered professional engineer (P.E.) under the employ or contract of the city, for review to ensure that the development meets the requirements of section 13-1-7 of this chapter. In the case of an appropriate use, the P.E. shall state in writing that the development meets the requirements of section 13-1-7 of this chapter. The applicant for any floodplain development permit which requires the services of the city engineer shall pay the city for the city engineer's per diem fees prior to issuance of an occupancy permit. (1975 Code § 8-502.0)

C. Dam Safety Requirements: Ensure that a DWR dam safety permit has been issued or a letter indicating no dam safety permit is required. If the proposed development activity includes construction of a "dam", as defined in section 13-1-2 of this chapter. Regulated dams may include weirs, restrictive culverts or impoundment structures. (1975 Code § 8-503.0)

D. Other Permit Requirements: Ensure that any and all required federal, state and local permits are received prior to the issuance of a floodplain development permit. (1975 Code § 8-504.0)

E. Plan Review And Permit Issuance: Ensure that all development activities within the SFHAs of the jurisdiction of the city meet the requirements of this chapter and 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. (1975 Code § 8-505.0)

F. Inspection Review: Inspect all development projects before, during and after construction to assure proper elevation of the structure and to ensure they comply with the provisions of this chapter. (1975 Code § 8-506.0)

G. Elevation And Floodproofing Certificates: Maintain in the permit files an elevation certificate certifying the elevation of the lowest floor (including basement) of a residential or nonresidential building or the elevation to which a non residential building has been floodproofed, using a floodproofing certificate, for all buildings subject to section 13-1-9 of this chapter for public inspection and provide copies of same. (1975 Code § 8-507.0)

H. Records For Public Inspection: Maintain for public inspection and furnish upon request base flood data, SFHA and regulatory floodway maps, copies of federal or state permit documents, variance documentation, conditional letter of map revision, letter of map revision, letter of map amendment and "as built" elevation and flood proofing or elevation and floodproofing certificates for all buildings constructed subject to this chapter. (1975 Code § 8-508.0)

I. State Permits: Ensure that construction authorization has been granted by the Illinois division of water resources, for all development projects subject to sections 13-1-7 and 13-1-8 of this chapter, unless enforcement responsibility has been delegated to the city. Upon acceptance of this chapter by DWR and FEMA, responsibility is hereby delegated to the city as per 92 Illinois administrative code 708 for construction in the regulatory floodway and floodplain when floodways have not been defined in sections 13-1-7 and 13-1-8 of this chapter. However, the following review approvals are not delegated to the city, and shall require review or permits from DWR:

1. Organizations which are exempt from this chapter, as per the Illinois Compiled Statutes;

2. Department of transportation projects, dams or impoundment structures, as defined in section 13-1-2 of this chapter, and all other state, federal or local unit of government projects, including projects of the city and county, except for those projects meeting the requirements of subsection 13-1-7-2F of this chapter;

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 subsection 13-1-7-2B5 of this chapter;

4. An engineer's analysis of the flood profile due to subsection 13-1-7-2B4 of this chapter;

5. Alternative transition sections and hydraulically equivalent compensatory storage as indicated in subsections 13-1-7-2B1, B2 and B8 of this chapter;

6. Permit issuance of structures within or over publicly navigable rivers, lakes and streams;

7. Any changes in the base flood elevation or floodway locations; and

8. Base flood elevation determinations where none now exist. (1975 Code § 8-509.0)

J. Cooperation With Other Agencies: 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. Submit data to DWR and the federal emergency management agency for proposed revisions of a regulatory map. Submit reports as required for the national flood insurance program. Notify the federal emergency management agency of any proposed amendments to this chapter. (1975 Code § 8-510.0)

K. 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 DWR and FEMA for any chapter changes. (1975 Code § 8-511.0)

13-1-5: **BASE FLOOD ELEVATIONS:** This chapter's protection standard is based on the flood insurance study for the city. If a base flood elevation or 100-year frequency flood elevation is not available for a particular site, then the protection standard shall be according to the best existing data available in the Illinois state water survey's flood plain information repository. When a party disagrees with the best available data, he may finance the detailed engineering study needed to replace existing data with better data and submit it to DWR and FEMA. (1975 Code § 8-600.0)

A. The base flood or 100-year frequency flood elevation for the SFHAs of the Fox River and Geneva Creek shall be as delineated on the 100-year flood profiles in the flood insurance study of the city prepared by FEMA (or HUD) and dated February 3, 1981, and such amendments to such study and maps as may be prepared from time to time. (1975 Code § 8-601.0)

B. The base flood or 100-year frequency flood elevation for the SFHAs of those parts of unincorporated Kane 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 county prepared by FEMA (or HUD) and dated September 1, 1981, and such amendments or revisions to such study and maps as may be prepared from time to time. (1975 Code § 8-602.0)

C. The base flood or 100-year frequency flood elevation for each SFHA delineated as an "AH zone" or "AO zone" shall be that elevation (or depth) delineated on the flood insurance rate map of the city. (1975 Code § 8-603.0)

D. The base flood or 100-year frequency flood elevation for each of the remaining SFHAs delineated as an "A Zone" on the flood insurance rate map of the city, shall be according to the best existing data available in the Illinois state water survey flood plain information repository. When no base flood or 100 year frequency flood elevation exists, the base flood or 100-year frequency flood elevation for a riverine SFHA shall be determined from a backwater model, such as HEC-II, WSP-2, or a dynamic model such as HIP. The flood flows used in the hydraulic models shall be obtained from a hydrologic model, such as HEC-I TR-20, or HIP, or by techniques presented in various publications prepared by the United States geological survey for estimating peak flood discharges. Flood flows should be based on anticipated future land use conditions in the watershed as determined from adopted local and regional land use

plans. Along any watercourses draining more than one square mile, the above analyses shall be submitted to DWR for approval, once approved it must be submitted to the Illinois state water survey floodplain information repository for filing. For a nonriverine SFHA, the base flood elevation shall be the historic flood of record plus three feet (3'), unless calculated by a detailed engineering study and approved by the Illinois state water survey. (1975 Code § 8-604.0)

13-1-6: **OCCUPATION AND USE OF FLOOD FRINGE AREAS:** Development in and/or filling of the flood fringe will be permitted if protection is by proper elevation, and compensatory storage and other provisions of this chapter are met. 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 section 13-1-9 of this chapter. (1975 Code § 8-700.0)

A. Development Permit: No person, firm, corporation or governmental body not exempted by state law shall commence any development in the SFHA without first obtaining a development permit from the director of public works. (1975 Code § 8-701.0)

1. Application for a development permit shall be made on a form provided by the director of public works. 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 in M.S.L., 1929 adj. datum or NGVD and all changes in grade resulting from excavation or filling; the location and dimensions of all buildings and additions to buildings. For all proposed buildings, the elevation of the lowest floor (including provided against the base flood or 100-year frequency flood basement) and lowest adjacent grade shall be shown on the submitted plans and the development will be subject to the requirements of section 13-1-9 of this chapter. (1975 Code § 8-701.1)

2. Upon receipt of a development permit application, the director of public works shall compare the elevation of the site to the base flood or 100-year frequency flood elevation. Any development located on land that can be shown to have been higher than the base flood elevation as of the sites first flood insurance rate map identification is not in the SFHA and, therefore, not subject to the requirements of this chapter. The director of public works shall maintain documentation of the existing ground elevation at the development site and

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certification that this ground elevation existed prior to the date of the site's first flood insurance rate map identification. (1975 Code § 8-701.2)

3. A soil erosion and sedimentation control plan for disturbed areas shall be submitted. 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. (1975 Code § 8-701.3)

4. The director of public works shall be responsible for obtaining from the applicant, copies of all other local, state and federal permits, approvals or permit not required letters that maybe required for this type of activity. The director of public works shall not issue a permit unless all other local, state and federal permits have been obtained. (1975 Code § 8-701.4)

B. Preventing Increased Damages: No development in the flood fringe shall create a threat to public health and safety. (1975 Code § 8-702.0)

1. 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. (1975 Code § 8-702.1)

2. 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. The excavation volume shall be at least equal to one and one-half (1.5) times the volume of storage lost due to the fill or structure. In the case of streams and watercourses, such excavation shall be made opposite or adjacent to the areas so filled or occupied. All floodplain storage lost below the existing 10-year flood elevation shall be replaced below the proposed 10-year flood elevation. All floodplain storage lost above the existing 10-year flood elevation shall be replaced above the proposed 10-year flood elevation. All such excavations shall be constructed to drain freely and openly to the watercourse. (1975 Code § 8-702.2)

13-1-7: **OCCUPATION AND USE OF IDENTIFIED FLOODWAYS:** This section applies to proposed development redevelopment, site modification or building modification within a regulatory floodway. The regulatory floodway for the Fox River and Geneva Creek shall be as delineated on the regulatory floodway maps designated by DWR according and referenced in section 13-1-2 of this chapter. 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 section 13-1-9 of this chapter. (1975 Code § 8-800)

13-1-7-1: **DEVELOPMENT PERMIT:** 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 the director of public works. (1975 Code § 8-801.0)

A. Application for a development permit shall be made on a form provided by the director of public works. The application shall include the following information:

1. Name and address of applicant;

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

3. Name of stream or body of water affected;

4. Description of proposed activity;

5. Statement of purpose of proposed activity;

6. Anticipated dates of initiation and completion of activity;

7. Name and mailing address of the owner of the subject property if different from the applicant;

8. Signature of applicant or the applicant's agent;

9. If the applicant is a corporation, the president or other authorized officer shall sign the application form;

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10. If the applicant is a partnership, each partner shall sign the application form; and

11. If the applicant is a land trust, the trust officer shall sign the name of the trustee by him 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;

12. 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 in mean sea level (1929 adjustment) datum or NGVD, 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), regulatory floodway limit, floodplain limit, flood specifications and dimensions of any proposed channel modifications, location and orientation of cross sections, north arrow and a graphic or numerical scale;

c. 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, 10-year frequency flood elevation, 100-year frequency flood elevation, and graphic or numerical scales (horizontal and vertical);

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;

e. A copy of the regulatory floodway map, marked to reflect any proposed change in the regulatory floodway location.

13. Any and all other local, state and federal permits or approval letters that may be required for this type of development;

14. Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the permit criteria of subsection 13-1-7-2 of this chapter;

15. If the regulatory 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 DWR has indicated conditional approval of the regulatory floodway map change. No structures may be built until a letter of map revision has been approved by FEMA.

16. 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 registered professional engineer, licensed architect or registered 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 section 13-1-9 of this chapter;

17. If the proposed project involves a channel modification, the applicant shall submit the following information:

a. A discussion of the purpose of and need for the proposed work;

b. A discussion of the feasibility of using alternative locations or methods to accomplish the purpose of the proposed work;

c. An analysis of the extent and permanence of the impacts the project would have on the physical and biological conditions of the body of water affected;

d. An analysis of the extent and permanence of the impacts each feasible alternative identified in subsection 13-1-7-2B4a of this chapter would have on the physical and biological conditions of the body of water affected; and

e. An analysis of the impacts of the proposed project, considering cumulative effects on the physical and biological conditions of the body of water affected. (1975 Code § 8-801.1)

B. The director of public works shall be responsible for obtaining from the applicant copies of all other local, state and federal permits and approvals that may be required for this type of activity. The director of public works shall not issue the development permit unless all required federal and state permits have been obtained. The city engineer shall review and approve applications under this section prior to issuance of the development permit by the director of public works. (1975 Code § 8-801.2)

13-1-7-2: PREVENTING INCREASED DAMAGES; APPROPRIATE USES:

A. Allowable Development: 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 92 Illinois administrative code 708 will be allowed. 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 nonappropriate 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. The approved appropriate uses are as follows:

1. 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;

2. 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;

3. Storm and sanitary sewer outfalls;

4. Underground and overhead utilities;

5. Recreational facilities such as playing fields and trail systems including any related fencing (at least 50 percent open when viewed from any one direction) built parallel to the direction of flood flows, and including open air pavilions;

6. Detached garages, storage sheds, or other nonhabitable accessory structures without toilet facilities to existing buildings that will not block flood flows, nor reduce floodway storage;

7. Bridges, culverts, roadways, sidewalks, railways, runways and taxiways and any modification thereto;

8. Parking lots and any modifications thereto (where depth of flooding at the 100-year frequency flood event will not exceed 1.0 foot) and aircraft parking aprons built at or below ground elevation;

9. Regulatory floodway regrading, without fill, to create a positive nonerosive slope toward a watercourse;

10. Floodproofing activities to protect previously existing lawful structures including the construction of watertight 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 (10') away from the exterior wall of the existing structure, and, which are not considered substantial improvements to the structure;

11. In the case of damaged or replacement buildings, reconstruction or repairs made to a building that are valued at less than fifty percent (50%) of the market value of the building before it was damaged or replaced, and which do not increase the outside dimensions of the building;

12. Additions to existing buildings above the BFE that do not increase the building's foot print and are valued at less than fifty percent (50%) of the market value of the building. (1975 Code § 8-802.0)

B. Appropriate Uses: Within the regulatory floodway as identified on the regulatory floodway maps designated by DWR, 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

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and data by a registered professional engineer and provided that any structure meets the protection requirements of section 13-1-9 of this chapter:

1. 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 regulatory 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 regulatory floodway conveyance, the following factors shall be taken into consideration:

a. Regulatory floodway conveyance;

$$K = \frac{1.486}{N\ AR^{2/3}}$$

where "n" is Manning's roughness factor, "A" is the effective area of the cross section, and "R" is the ratio of the area to the wetted perimeter. (See Open Channel Hydraulics, Ven Te Chow, 1959, McGraw-Hill Book Company, New York).

b. 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 nonvegetative land cover.

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

(1) 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 (4') of the flooded stream's length.

(2) 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 (1') horizontal for every one foot (1') of the flooded stream's length.

(3) When expanding or contracting flows in a vertical direction, a minimum of one foot (1') vertical transition for every ten feet (10') of stream length shall be used.

(4) Transition sections shall be provided between cross sections with rapid expansions and contractions and when meeting the regulatory floodway delineation on adjacent properties.

(5) All cross sections used in the calculations shall be located perpendicular to flood flows.

2. Preservation Of Floodway Storage So Not To Increase Downstream Flooding: Compensatory storage shall be provided for any regulatory 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. Compensatory storage for fill or structures shall be equal to at least one and one-half ($1^1/_2$) times the volume of floodplain storage lost. Artificially created storage lost due to a reduction in head loss behind a bridge shall not be required to be replaced. The compensatory regulatory floodway storage shall be placed between the proposed normal water elevation and the proposed 100-year flood elevation. All regulatory floodway storage lost below the existing 10-year flood elevation shall be replaced shall be replaced below the proposed 10-year flood elevation. All regulatory floodway storage lost above the existing 10-year flood elevation shall be replaced above the proposed 10-year flood elevation. All such excavations shall be constructed to drain freely and openly to the watercourse. If the compensatory storage will not be placed at the location of the proposed construction, the applicant's engineer shall demonstrate to DWR through a determination of flood discharges and water surface elevations that the compensatory storage is hydraulically equivalent. Finally, 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.

3. Preservation Of Floodway Velocities So As Not To Increase Stream Erosion Or Flood Heights: 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 regulatory floodway velocities or stage for all flood events up to and including the 100-year frequency event. However, 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

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increased at the structure site if scour, erosion and sedimentation will be avoided by the use of riprap or other design measures.

4. Construction Of New Bridges Or Culvert Crossings And Roadway Approaches: The proposed structure shall not result in an increase of upstream flood stages greater than one-tenth of a foot (0.1') when compared to the existing conditions for all flood events up to and including the 100-year frequent 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. If the proposed construction will increase upstream flood stages greater than one-tenth of one foot (0.1'), the developer must contact DWR, dam safety section for a dam safety permit 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 section 13-1-5 of this chapter. Culverts must be analyzed using the U.S. DOT, FHWA hydraulic chart for the selection of highway culverts. Bridges must be analyzed using the U.S. DOT/federal highway administration hydraulics of bridge waterways calculation procedures.

b. Lost floodway storage must be compensated for per subsection B2 of this section.

c. Velocity increases must be mitigated per subsection B3 of this section.

d. If the crossing is proposed over a public water that is used for recreational or commercial navigation, a department of transportation 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 DWR for concurrence that a CLOMR is not required by section 13-1-7-2 of this chapter.

f. All excavations for the construction of the crossing shall be designed per subsection B8 of this section.

5. Reconstruction Or Modification Of Existing Bridges, Culverts And Approach Roads:

a. The bridge or culvert and roadway approach reconstruction or modification shall be constructed with no more than one-tenth of one foot (0.1') 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.

b. 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.

c. 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 the department of transportation rules, 92 Illinois administrative code 708 (floodway construction in northeastern illinois) and submitted to the division for review and concurrence before a permit is issued.

6. On-Stream Structures Built For Purpose Of Backing Up Water: Any increase in upstream flood stages greater than zero foot (0.0') 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. A permit or letter indicating a permit is not required must be obtained from DWR, dam safety section for a dam safety permit or waiver for any structure built for the purpose of backing up water in the stream during normal or flood flow. All dams and impoundment structures as defined in section 13-1-2 of this chapter shall meet the permitting requirements of 92 Illinois administrative code 702 (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 presedimentation basin.

d. A nonpoint 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 section 13-1-7 of this chapter.

7. Floodproofing Of Existing Habitable, Residential And Commercial Structures: 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 (10') from the outside of the building. Compensation of lost storage and conveyance will not be required for floodproofing activities.

8. Excavation In Floodway: 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 for other appropriate uses, transition sections shall be provided for the excavation. The following expansion and contraction ratios shall be used unless an applicant's engineer can prove to DWR 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 (1') horizontal for every four feet (4') 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 (1') horizontal for every one foot (1') of the flooded stream's length; and

c. When expanding or contracting flows in a vertical direction, a minimum of one foot (1') vertical transition for every ten feet (10') of stream length shall be used;

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

9. Channel Modification: If the proposed activity involves a channel modification, it shall be demonstrated that:

a. 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, floodproofing 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;

b. 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;

c. 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:

(1) 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.

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

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(3) 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.

(4) Clearing of vegetation shall be limited to that which is essential for construction of the channel.

(5) Channel banks shall be constructed with a side slope no steeper than three to one (3:1) horizontal to vertical, wherever practicable. Natural 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, natural rock or riprap are preferred materials. Artificial materials such as concrete, gabions or construction rubble should be avoided unless there are no practicable alternatives.

(6) 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.

(7) 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.

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

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

(10) 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.

(11) 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

d. The project otherwise complies with the requirements of section 13-1-7 of this chapter.

10. Seeding And Stabilization Plan: For all activities located in a floodway, a seeding and stabilization plan shall be submitted by the applicant.

11. 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:

a. 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 fifteen (15) days prior to the initiation of improvements.

b. 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 fifteen (15) days after final grade is reached on any portion of the site, and within fifteen (15) days to denuded areas which may not beat final grade but will remain undisturbed for longer than sixty (60) days.

c. 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 basins.

d. A vegetated buffer strip of at least twenty five feet (25') in width shall be preserved and/or reestablished, where possible, along existing channels (see subsection B16 of this section). 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.

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e. 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 "Standards and Specifications for Soil Erosion and Sediment Control" (IEPA, 1987).

12. 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 DWR 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.

13. General Criteria For Analysis Of Flood Elevations:

a. The flood profiles, flows and floodway data in the regulatory floodway study, referenced in section 13-1-5 of this chapter, must be used for analysis of the base conditions. If the study data appears to be in error or conditions have changed, DWR shall be contacted for approval and concurrence on the appropriate base conditions data to use.

b. If the 100-year regulatory 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 the requirements of this section for the 100-year frequency flood elevations of the regulatory floodway conditions and conditions with the receiving stream at normal water elevations.

c. If the applicant learns from DWR, 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 (5) 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.

14. Conditional Letter Of Map Revision: If the appropriate use would result in a change in the regulatory floodway location or the 100-year frequency flood elevation, the applicant shall submit to DWR and to FEMA all the information, calculations and documents necessary to be issued a conditional regulatory floodway map revision and receive

from DWR a conditional approval of the regulatory floodway change before a permit is issued. However, the final regulatory floodway map will not be changed by DWR until as-built plans or record drawings are submitted and accepted by FEMA and DWR. In the case of nongovernmental projects, the municipality in incorporated areas and the county in unincorporated areas shall concur with the proposed conditional regulatory floodway map revision before DWR approval can be given. No filling, grading, dredging or excavating shall take place until a conditional approval is issued. No further development activities shall take place until a final letter of map revision (LOMR) is issued by FEMA and DWR.

15. Professional Engineer's Supervision: All engineering analyses shall be performed by or under the supervision of a registered professional engineer.

16. Floodway Activities: For all activities in the floodway involving construction within twenty five feet (25') of the channel, the following criteria shall be met:

a. A natural vegetation buffer strip shall be preserved within at least twenty five feet (25') of the ordinary high water mark of the channel.

b. 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.

c. 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.

After receipt of conditional approval of the regulatory floodway change and issuance of a permit and a conditional letter of map revision, construction as necessary to change the regulatory floodway designation may proceed but no buildings or structures or other construction that is not an appropriate use maybe placed in that area until the regulatory floodway map is changed and a final letter of map revision is received. The regulatory floodway map will be revised upon acceptance and concurrence by DWR and FEMA of the as-built plans. (1975 Code § 8-802.1)

C. State Review: For those projects listed below located in a regulatory floodway, the following criteria shall be submitted to DWR for their review and concurrence prior to the issuance of a permit:

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1. DWR will review an engineer's analysis of the flood profile due to a proposed bridge pursuant to subsection B4 of this section.

2. DWR will review 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 subsection B5 of this section.

3. The DWR will review alternative transition sections and hydraulically equivalent storage pursuant to subsections B1, B2 and B8 of this section.

4. The DWR will review and approve prior to the start of construction any department projects, dams (as defined in section 13-1-2 of this chapter) and all other state, federal or local units of government projects, including projects of the city or county. (1975 Code § 8-802.2)

D. Other Permits: 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 DWR, issued pursuant to 615 Illinois Compiled Statutes 5/5 et seq. No permit from DWR shall be required if the division has delegated this responsibility to the city. (1975 Code § 8-802.3)

E. Dam Safety Permits: Any work involving the construction, modification or removal of a dam as defined in section 13-1-2 of this chapter, per 92 Illinois administrative code 702 (rules for construction of dams) shall obtain an Illinois division of water resources dam safety permit prior to the start of construction of a dam. If the director of public works finds a dam that does not have an DWR permit, the director of public works shall immediately notify the dam safety section of the division of water resources. If the director of public works finds a dam which is believed to be in unsafe condition, the director of public works shall immediately notify the owner of the dam, DWR, dam safety section in Springfield and the Illinois emergency management agency (EMA). (1975 Code § 8-802.4)

F. Activities That Do Not Require A Registered Professional Engineer's Review: The following activities may be permitted without a registered professional engineer's review. Such activities shall still meet the other requirements of this chapter, including the mitigation requirements:

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1. Underground and overhead utilities that:

a. Do not result in any increase in existing ground elevations; or

b. Do not require the placement of aboveground structures in the floodway; or

c. In the case of underground stream crossings, the top of the pipe or encasement is buried a minimum of three feet (3') below the existing stream bed; and

d. In the case of overhead utilities, no supporting towers are placed in the watercourse and are designed in such a fashion as not to catch debris.

2. Storm and sanitary sewer outfalls that:

a. Do not extend riverward or lakeward of the existing adjacent natural bank slope; and

b. Do not result in an increase in ground elevation; and

c. Are designed so as not to cause stream erosion at the outfall location.

3. Construction of sidewalks, athletic fields (excluding fences), properly anchored playground equipment and patios at grade.

4. Construction of shoreline and streambank protection that:

a. Does not exceed one thousand feet (1,000') in height.

b. Materials are not placed higher than the existing top of bank.

c. Materials are placed so as not to reduce the cross sectional area of the stream channel or bank of the lake.

d. Vegetative stabilization and gradual side slopes are the preferred mitigation methods for existing erosion problems. Where high channel velocities, sharp bends or wave action necessitate the use of alternative stabilization measures, natural rock or riprap are preferred materials. Artificial materials such as concrete, construction rubble, and gabions should be avoided unless there are no practicable alternatives.

5. Temporary stream crossings in which:

a. The approach roads will be one-half foot ($^1/_2$') or less above natural grade.

b. The crossing will allow stream flow to pass without backing up the water above the stream bank vegetation line or above any drainage tile or outfall invert.

c. The top of the roadway fill in the channel will be at least two feet (2') below the top of the lowest bank. Any fill in the channel shall be nonerosive material, such as riprap or gravel.

d. All disturbed stream banks will be seeded or otherwise stabilized as soon as possible upon installation and again upon removal of construction.

e. The access road and temporary crossings will be removed within one year after authorization. (1975 Code § 8-802.5)

13-1-8: **OCCUPATION AND USE OF SFHA AREAS WHERE FLOODWAYS NOT IDENTIFIED:** In SFHA or floodplains, 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. (1975 Code § 8-900.0)

A. Development Permits:

1. No person, firm, corporation or governmental body, not exempted by state law, shall commence any development in a SFHA or floodplain without first obtaining a development permit from the director of public works. Application for a development permit shall be made on a form provided by the director of public works. 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 section 13-1-9 of this chapter.

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

a. A detailed description of the proposed activity, its purpose and intended use;

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

c. Anticipated dates of initiation and completion of activity;

d. 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 in mean sea level (1929 adjustment) datum or NGVD, adjacent property lines and ownership, drainage and flood control easements, distance between proposed activity and navigation channel (when the proposed construction is near a commercially navigable body of water), floodplain limit, location and orientation of cross sections, north arrow, and a graphical 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, 10-year frequency flood elevation, 100-year frequency flood elevation and graphical or numerical scales (horizontal and vertical); and

(4) 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.

e. Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the criteria of subsection 13-1-8B of this section.

f. Any and all other local, state and federal permits or approvals that may be required for this type of development. (1975 Code § 8-901.1)

2. Based on the best available existing data according to the Illinois state water survey's floodplain information repository, the city engineer shall compare the elevation of the site to the base flood or 100-year frequency flood elevation. Should no elevation information exist for the site, the developer's engineer shall calculate the elevation according to subsection 13-1-5D of this chapter. Any development located on land that can be shown to have been higher than the base flood elevation as of the sites first flood insurance rate map identification is not in the SFHA and, therefore, not subject to the requirements of this chapter. The director of public works 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. (1975 Code § 8-901.2)

3. The director of public works shall be responsible for obtaining from the applicant copies of all other local, state, and federal permits, approvals or permit not required letters that may be required for this type of activity. The director of public works shall not issue the development permit unless all required local, state and federal permits have been obtained. The city engineer shall review and approve applications under this section prior to issuance of the development permit by the director of public works. (1975 Code § 8-901.3)

B. Preventing Increased Damages: No development in the SFHA, 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. (1975 Code § 8-902.0)

1. Standards: Within all riverine SFHAs where the floodway has not been determined, the following standards shall apply:

a. The developer shall have a registered professional engineer state in writing and show through supporting plans, calculations, and data that the project meets the engineering requirements of subsections 13-1-7-2B1 through B8 of this chapter for the entire floodplain as calculated under the provisions of subsection 13-1-5D of this chapter. As an alternative, the developer should have an engineering study performed to determine a floodway and submit that engineering study to DWR for acceptance as a regulatory floodway. Upon acceptance of their floodway by the department, the developer shall then demonstrate that the project meets the requirements of section 13-1-7 of this chapter for the regulatory floodway. The floodway shall be defined according to the definition in section 13-1-2 of this chapter.

b. A development permit shall not be issued unless the applicant first obtains a permit from DWR or written documentation that a permit is not required from DWR.

c. No permit from DWR shall be required if the division has delegated permit responsibility to the city, per 92 Illinois administrative code, part 708 for regulatory floodways, per DWR statewide permit entitled construction in floodplains with no designated floodways in northeastern Illinois.

d. Any work involving the construction, modification or removal of a dam or an on-stream structure to impound water as defined in section 13-1-2 of this chapter shall obtain an Illinois division of water resources dam safety permit or letter indicating a permit is not required prior to the start of construction of a dam. If the director of public works finds a dam that does not have an DWR permit, the director of public works shall immediately notify the dam safety section of the division of water resources. If the director of public works finds which is believed to be in unsafe condition, the director of public works shall immediately notify the owner of the dam and the Illinois emergency management agency (EMA) and the DWR, dam safety section in Springfield.

e. The following activities may be permitted without a registered professional engineer's review or calculation of a base flood elevation and regulatory floodway. Such activities shall still meet the other requirements of this chapter:

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(1) Underground and overhead utilities that:

(A) Do not result in any increase in existing ground elevations; or

(B) Do not require the placement of aboveground structures in the floodway; or

(C) In the case of underground stream crossings, the top of the pipe or encasement is buried a minimum of three feet (3') below the existing streambed; and

(D) In the case of overhead utilities, no supporting towers are placed in the watercourse and are designed in such a fashion as not to catch debris.

(2) Storm and sanitary sewer outfalls that:

(A) Do not extend riverward or lakeward of the existing adjacent natural bank slope; and

(B) Do not result in an increase in ground elevation; and

(C) Are designed so as not to cause stream bank erosion at the outfall location.

(3) Construction of shoreline and streambed protection that:

(A) Does not exceed one thousand feet (1,000') in length or two (2) cubic yards per lineal foot of streambed.

(B) Materials are not placed higher than the existing top of bank.

(C) Materials are placed so as not to reduce the cross sectional area of the stream channel by more than ten percent (10%).

(D) Vegetative stabilization and gradual side slopes are the preferred mitigation methods for existing erosion problems. Where high channel velocities, sharp bends or wave action necessitate the use of alternative stabilization measures, natural rock or riprap are preferred materials. Artificial materials such as concrete, construction rubble, and

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gabions should be avoided unless there are no practicable alternatives.

(4) Temporary stream crossings in which:

(A) The approach roads will be one-half foot ($^1/_2$') or less above natural grade.

(B) The crossing will allow stream flow to pass without backing up the water above the stream bank vegetation line or above any drainage tile or outfall invert.

(C) The top of the roadway fill in the channel will be at least two feet (2') below the top of the lowest bank. Any fill in the channel shall be nonerosive material, such as riprap or gravel.

(D) All disturbed stream banks will be seeded or otherwise stabilized as soon as possible upon installation and again upon removal of construction.

(E) The access road and temporary crossings will be removed within one year after authorization.

(5) The construction of light poles, signposts and similar structures;

(6) The construction of sidewalks, driveways, athletic fields (excluding fences), patios and similar surfaces which are built at grade;

(7) The construction of properly anchored, unwalled, open structures such as playground equipment, pavilions and carports built at or below existing grade that would not obstruct the flow of floodwaters;

(8) The placement of properly anchored buildings not exceeding seventy (70) square feet in size, nor ten feet (10') in any one dimension (e.g., animal shelters and tool sheds);

(9) The construction of additions to existing buildings which do not increase the first floor area by more than twenty percent (20%), which are located on the upstream or downstream side of the existing building, and which do not

extend beyond the sides of the existing building that are parallel to the flow of flood waters;

(10) Minor maintenance dredging of a stream channel where:

(A) The affected length of stream is less than one thousand feet (1,000');

(B) The work is confined to reestablishing flows in natural stream channels; or

(C) The cross sectional area of the dredged channel conforms to that of the natural channel upstream and downstream of the site.

f. The flood carrying capacity within any altered or relocated watercourse shall be maintained. (1975 Code § 8-902.1)

2. Compensatory Storage: 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. The excavations volume shall be at least equal to one and one-half (1.5) times the volume of storage lost due to the fill or structure. In the case of streams and watercourses, such excavation shall be made opposite or adjacent to the areas so filled or occupied. All floodplain storage lost below the existing 10-year flood elevation shall be replaced below the proposed 10-year flood elevation. All floodplain storage lost above the existing 10-year flood elevation shall be replaced above the proposed 10-year flood elevation. All such excavations shall be constructed to drain freely and openly to the watercourse. (1975 Code § 8-902.2)

13-1-9: **REQUIREMENTS APPLICABLE TO ALL FLOODPLAIN AREAS AND PROTECTION OF BUILDINGS:** In addition to the requirements found in sections 13-1-6, 13-1-7 and 13-1-8 of this chapter for development in flood fringes, regulatory floodways, and SFHA or floodplains where no floodways have been identified (zones A, AO, AH, AE, A1-A30, A99, VO, V1-30, VE, V, M or E), the following requirements shall be met: (1975 Code § 8-1000.0)

A. Public Health Standards:

1. No developments in the SFHA shall include locating or storing chemicals, explosives, buoyant materials, animal wastes, fertilizers, flammable liquids, pollutants, or other hazardous or toxic materials below the floodplain elevation. (1975 Code § 8-1001.1)

2. New and replacement water supply systems, wells, sanitary sewer lines and on-site waste disposal systems may be permitted providing all manholes or other aboveground openings located below the FPE are watertight. (1975 Code § 8-1001.2)

B. Carrying Capacity And Notification: For all projects involving channel modification, fill or stream maintenance (including levees), the flood carrying capacity of the watercourse shall be maintained. In addition, the city shall notify adjacent communities in writing thirty (30) days prior to the issuance of a permit for the alteration or relocation of the watercourse. (1975 Code § 8-1002.0)

C. Protecting Buildings: All buildings located within a 100-year floodplain also known as a SFHA, shall be protected from flood damage below the flood protection elevation. However, existing buildings located within a regulatory floodway shall also meet the more restrictive appropriate use standards included in section 13-1-7 of this chapter.

1. This building protection criteria applies to the following situations:

a. Construction or placement of a new building.

b. A structural alteration to an existing building that either increases the first floor area by more than twenty percent (20%) or the building's market value by more than fifty percent (50%);

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

d. Installing a travel trailer on a site for more than one hundred eighty (180) days. (1975 Code § 8-1003.0)

This building protection requirement may be met by one of the methods set out in subsections C2 through C5 of this section.

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2. A residential or nonresidential building, when allowed, may be constructed on permanent landfill in accordance with the following:

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

b. The fill shall be placed in layers no greater than one foot (1') deep before compaction and should extend at least ten feet (10') beyond the foundation of the building before sloping below the flood protection elevation. The top of the fill shall be above the flood protection elevation. However, the ten foot (10') minimum may be waived if a structural engineer certifies an alternative method to protect the building from damages due to hydrostatic pressures. The fill shall be protected against erosion and scour. The fill shall not adversely effect the flow or surface drainage from or onto neighboring properties. (1975 Code § 8-1003.1)

3. A residential or nonresidential building may be elevated in accordance with the following:

a. The building or improvements shall be elevated on crawlspace, stilts, piles, walls or other foundation that is permanently open to floodwaters and not subject to damage by hydrostatic pressures of the base flood or 100-year frequency flood. The permanent openings shall be no more than one foot (1') above grade, and consists of a minimum of two (2) openings. The openings must have a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding below the base flood elevation.

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

c. All areas below the flood protection elevation shall be constructed of materials resistant to flood damage. 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. Water and sewer pipes, electrical and telephone lines, submersible pumps and other waterproofed service facilities may be located below the flood protection elevation.

d. No area below the flood protection elevation shall be used for storage of items or materials.

e. Manufactured homes and travel trailers to be installed on a site for more than one hundred eighty (180) days, shall be elevated to or above the flood protection elevation; and, shall be anchored to resist flotation, collapse or lateral movement by being tied down in accordance with the rules and regulations for the Illinois mobile home tie-down act issued pursuant to 77 Illinois administrative code 870. (1975 Code § 8-1003.2)

4. Only a nonresidential building may be structurally dry floodproofed (in lieu of elevation) provided that a registered professional engineer shall certify that the building has been structurally dry floodproofed below the flood protection elevation, the structure and attendant utility facilities are watertight and capable of resisting the effects of the base flood or 100-year frequency flood. The building design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy and impacts from debris or ice. Floodproofing measures shall be operable without human intervention and without an outside source of electricity (levees, berms, floodwalls and similar works are not considered floodproofing for the purpose of this subsection). Tool sheds and detached garages on an existing single-family platted lot, may be constructed with the lowest floor below the flood protection elevation in accordance with the following:

a. The building is not used for human habitation.

b. All areas below the base flood or 100-year frequency flood elevation shall be constructed with waterproof material. Structures located in a regulatory floodway shall be constructed and placed on a building site so as not to block the flow of floodwaters and shall also meet the appropriate use criteria of section 13-1-7 of this chapter. In addition, all other requirements of sections 13-1-6, 13-1-7 and 13-1-8 of this chapter must be met.

c. The structure shall be anchored to prevent flotation.

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

e. The building shall be valued at less than five thousand dollars ($5,000.00) and be less than five hundred (500) square feet in floor size.

f. The building shall be used only for the storage of vehicles or tools and may not contain other rooms, workshops, greenhouses or similar uses. (1975 Code § 8-1003.3)

5. Nonconforming structures located in a regulatory floodway may remain in use, but may not be enlarged, replaced or structurally altered. A nonconforming structure damaged by flood, fire, wind or other natural or manmade disaster may be restored unless the damage exceeds fifty percent (50%) of its market value before it was damaged, in which case it shall conform to this chapter. (1975 Code § 8-1003.4)

13-1-10: **OTHER DEVELOPMENT 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. (1975 Code § 8-1100.0)

A. New subdivisions, manufactured home parks, annexation agreements and planned unit developments (PUDs) within the SFHA shall be reviewed to assure that the proposed developments are consistent with sections 13-1-6, 13-1-7, 13-1-8 and 13-1-9 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 registered professional engineer that the plat or plans account for changes in the drainage of surface waters in accordance with the plat act[1]. (1975 Code § 8-1100.1)

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 or 100-year frequency flood elevation data and floodway delineations. Where this information is not available from an existing study filed with the Illinois state water survey, the applicant's engineer shall be responsible for calculating the base flood or 100-year frequency flood elevation per subsection 13-1-5D of this chapter and the floodway delineation per the definition in section 13-1-2 of this chapter and submitting it to the state water survey and DWR for review and approval as best available regulatory data. (1975 Code § 8-1100.2)

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1. 765 ILCS 205/0.01 et seq.

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. (1975 Code § 8-1100.3)

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. (1975 Code § 8-1100.4)

13-1-11: **VARIANCES:** No variances shall be granted to any development located in a regulatory floodway as defined in section 13-1-2 of this chapter. However, when a development proposal is located outside of a regulatory floodway, and whenever the standards of this chapter place undue hardship on a specific development proposal, the applicant may apply to the director of public works for a variance. The director of public works shall review the applicant's request for a variance and shall submit its recommendation to the city council. (1975 Code § 8-1200.0)

A. No variance shall be granted unless the applicant demonstrates that:

1. The development activity cannot be located outside the SFHA;

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;

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;

6. The provisions of subsections 13-1-6B and 13-1-8B of this chapter shall still be met;

7. The activity is not in a regulatory floodway;

8. The applicant's circumstances are unique and do not represent a general problem; and

9. The granting of the variance will not alter the essential character of the area involved including existing stream uses. (1975 Code § 8-1200.1)

B. The director of public works shall notify an applicant in writing that a variance from the requirements of section 13-1-9 of this chapter 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 twenty five dollars ($25.00) for one hundred dollars ($100.00) of insurance coverage;

2. Increase the risks to life and property; and

3. Require that the applicant proceed with knowledge of these risks and that he will acknowledge in writing that he assumes the risk and liability. (1975 Code § 8-1200.2)

C. Variances requested in connection with restoration of a site or building listed on the national register of historical places or documented as worthy of preservation by the Illinois historic preservation agency may be granted using criteria more permissive than the requirements of subsections A and B of this section. (1975 Code § 8-1200.3)

13-1-12: **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 manmade or natural causes. This chapter does not imply that development, either inside or outside of the SFHA, 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 lawfully made thereunder. (1975 Code § 8-1300.0)

13-1-13: **PENALTY:** Failure to comply with the requirements of a permit or conditions of a variance resolution shall be deemed to be a violation of this chapter. Upon due investigation, the director of public works may determine that a violation of the minimum standards of

this chapter exist. The director of public works shall notify the owner in writing of such violation. (1975 Code § 8-1400.0)

A. If such owner fails, after ten (10) days' notice, to correct the violation:

1. The city 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 this chapter.

2. Any person who violates this chapter shall, upon conviction thereof, be fined not less than fifty dollars ($50.00) or more than one thousand dollars ($1,000.00) 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 may record a notice of violation on the title to the property. (1975 Code § 8-1400.1)

B. The director of public works shall inform the owner that any such violation is considered a wilful act to increase flood damages and, therefore, may cause coverage by a standard flood insurance policy to be suspended. (1975 Code § 8-1400.2)

C. Nothing herein shall prevent the city from taking such other lawful action to prevent or remedy any violations. All costs connected therewith shall accrue to the person or persons responsible. (1975 Code § 8-1400.3)

13-1-14: **ABROGATION AND GREATER RESTRICTIONS:** This chapter is not intended to repeal, abrogate or impair any existing easements, covenants or deed restrictions. Where this chapter and other chapter, easements, covenants or deed restrictions conflict or overlap, whichever imposes the more stringent restrictions shall prevail. This chapter is intended to repeal the original chapter or resolution which was adopted to meet the national flood insurance program regulations, but is not intended to repeal the resolution which the city passed in order to establish initial eligibility for the program. (1975 Code § 8-1500.0)

CHAPTER 2

STORMWATER MANAGEMENT REGULATIONS

SECTION:

13-2-1: **KANE COUNTY ORDINANCE ADOPTED:** The provisions of the amended Kane County stormwater management ordinance, adopted by the Kane County board on October 9, 2001, pertaining to wetland regulations, not less than three (3) copies of which have been and now are filed in the office of the city clerk, is hereby adopted, by reference, with the amendments set out in section 13-2-2 of this chapter. (Ord. 2001-73, 11-19-2001)

13-2-2: **AMENDMENTS:** The following are amendments to the Kane County stormwater management ordinance adopted in section 13-2-1 of this chapter:

Article 202.b is deleted in its entirety and the following inserted therefor:

> Minor stormwater systems shall be sized to convey runoff from the tributary watershed under either predevelopment or fully developed conditions, as the case may be, in order to satisfy the greatest amount of runoff. The recurrence frequency for design purposes shall be the 10-year storm event. The rainfall data shall be from ISWS bulletin 70. Generally, unless otherwise requested by the director of public works or the city engineer, inlet capacity shall be sufficient that the depth of ponding does not exceed six inches (6") during the 10-year event. Generally, unless otherwise requested by the director of public works or the city engineer, pipe capacity shall be sufficient that the calculated hydraulic grade line does not exceed the top of pipe elevation.

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Article 202.k. shall be appended to Article 202 and shall read as follows:

Fences:

1. Fences Within Drainage Routes: A fence shall not be permitted where it impedes the flow of storm water or drainage.

2. Fences Within Easements: If the fence lies within an easement which contains drainage rights, a minimum vertical clearance of four inches (4") from the ground surface to the bottom of the fence must be maintained. The vertical clearance shall be maintained for the entire length of that portion of the fence that is installed in or across the easement. Requests for a variance to the four inch (4") vertical clearance requirement shall be submitted and will be considered in accordance with section 202.k.2.a. Applications for fences installed in or across and easement containing drainage rights shall have an affidavit and release attached, prepared by the property owner, stating that he has read the requirements for fences located in easements and that he agrees to comply with them and that he does for himself, his heirs, successors and assigns indemnify and hold harmless the city from any liability asserted by others in connection with the placement of the fence or any other structure or form of landscaping within the easement area by the city if the fence or landscaping impedes the flow of stormwater or drainage. The affidavit may be recorded at the owner's expense by the city in the office of the Kane County recorder. In the event the city shall determine it necessary to excavate or have access across the easement, the owner shall remove the fence at the city's direction and in the event of failure thereof, the city may remove the same at owner's expense and the city shall not be required to replace the same.

Variance Procedure:

a. A variance from the four inch (4") vertical clearance requirement for fences within drainage easements will be considered upon submittal of the following items:

i. A written request explaining the need for a variance and the noneconomic hardship, which will result from compliance with the four inch (4") vertical clearance requirement. Specify the vertical clearance (i.e., 1", 2", 3") which would not create a noneconomic hardship.

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ii. Details of the proposed fence including a calculation of the percentage of open surface area, which will allow free flow of surface run-off.

iii. Affidavit and release certificate in accordance with the attached exhibit 202.k.2.a.iii.

b. Exceptions to a variance for zero inch (0") vertical clearance. No variance shall be required in the following situation:

i. The proposed fence is constructed parallel to the drainage flow.

ii. The proposed fence is skewed or perpendicular to the drainage flow and meets all of the following conditions:

a. Drainage flow is classified as side lot line or minor rear lot line flow; and

b. Fifty percent (50%) of the fence ground surface area is open and will allow free flow of surface run-off; and

c. The minimum ground surface opening in a fence shall be able to pass a one inch (1") diameter sphere to be considered open surface area.

c. Exceptions to a variance for two inch (2") vertical clearance. No variance shall be required in the following situation:

i.The proposed fence is constructed parallel to the drainage flow.

ii. The proposed fence is skewed or perpendicular to the drainage flow and meets all of the following conditions:

a. Drainage flow is classified as side lot line, minor rear lot line, or 100-year block overflow; and

b. Fifty percent (50%) of the fence ground surface area is open and will allow free flow of surface run-off; and

c. The minimum ground surface opening in a fence shall be able to pass a one inch (1") sphere to be considered open surface area.

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d. No variance shall be permitted in the event:

i. The proposed fence is located around a stormwater management basin or perpendicular to the emergency overflow route of a stormwater management basin, or

ii. The fence impedes the flow of stormwater or drainage.

Notwithstanding any guideline given herein, the director of public works may deny any variance request which, in the interest of the public health, safety and welfare, he determines that the provisions of this chapter are not satisfied

3. Definitions:

MAJOR REAR LOT LINE FLOW:	Rainfall runoff, which accumulates and is conveyed along the rear lot line of a lot or lots and has an upstream tributary area of more than one acre.
MINOR REAR LOT LINE FLOW:	Rainfall runoff, which accumulates and is conveyed along the rear lot line and has an upstream tributary area of one acre or less.
100-YEAR BLOCK OVERFLOW:	The 100-year overflow route by which runoff would be conveyed in extreme rainfall events or failure of the storm sewer/drainage systems, as identified by the director of public works or his designee.
SIDE LOT LINE FLOW:	Rainfall runoff, which accumulates and is conveyed along the side lot line and has an upstream tributary area of one acre or less.

Article 203.h.10. shall be appended to Article 203.h. and shall read as follows:

Paved parking lots may not be utilized to provide any portion of the required site runoff storage volume.

Article 500.c. is deleted in its entirety and the following inserted therefor:

Permit Fees - Schedule:

The following schedule of fees is established for the filing and review of all stormwater permit application and the inspection of construction or maintenance activities related to required improvements:

A. Filing Fee (payable when permit application is filed): fifty dollars ($50.00);

B. Cash Deposit - Reimbursement For Professional Services: At the time that an applicant files an application for a stormwater management permit, said applicant shall submit a deposit with the city in the amount of two thousand five hundred dollars ($2,500.00) to reimburse the city for expenses associated with the review and administration of the permit application. Such deposit shall be in the form of cash, certified check or money order and shall be applied to city staff and professional consulting services, as follows:

1. Public recording fees;

2. Fees for the city attorney's review and negotiations in connection with the filing, review and construction of the project;

3. Fees for professional consultant's review and consultation in connection with the filing, review and construction of the proposed work including meetings and associated tasks. Professional consultants may include, but are not be limited to, civil engineers and wetland specialists;

4. Reimbursement for city staff review: One hundred forty percent (140%) of the hourly rate or prorata salary of each member involved in reviews, meetings, inspections or any associated tasks relative to a stormwater permit application. The reimbursement includes administrative overhead expenses relating to city staff wages and salaries.

Subsequent to the performance of tasks, the city shall prepare and tender an invoice notice for said services. The invoice notice shall itemize the expenses associated with said services and be assessed against the deposit. A credit against the deposit shall be made on said invoice and the balance, if any, shall be billed to the applicant prior to the issuance of the permit. At any time during the permit review process, the amount of the deposit has been expended, the

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applicant shall increase the deposit in an amount determined by the city administrator and further review of the application shall be suspended until the supplemental deposit is received by the city. Any balance remaining on the deposit at the time of the issuance of the permit shall be returned to the applicant within thirty (30) days following the permit issuance. In the event the applicant disputes the expenses billed by the city, the applicant shall submit his claim, in writing, to the city administrator within thirty (30) days from the date of invoice, and the city administrator shall seek to resolve the dispute within fourteen (14) days thereof. In the event the city administrator and the applicant are unable to resolve the dispute, the applicant shall be entitled to present his dispute before the city council, whose decision shall be final. (Ord. 2001-57, 8-20-2001)

Article 703.a. is deleted in its entirety and the following inserted therefor:

Any person found guilty of an offense under this chapter and the ordinance by reference herein shall pay a civil fine in an amount as provided in the general penalty in section 1-3-1 of the municipal code. Each calendar day during such violation continues to exist shall constitute a separate offense. In addition to the penalties provided in this chapter, the city may recover reasonable attorneys' fees, court costs, court reporter fees and other expenses of litigation by appropriate suit against the person found to have violated this chapter of rules, regulations, permits or orders issued hereunder. (Ord. 2001-57, 8-20-2001; amd. 2003 Code)

Article 803.d. shall be appended to Article 803 and shall read as follows:

The following list of projects, as defined by either property tax numbers (PIN), subdivision final plat recorded document number, or city ordinance number, shall be exempt from the requirements of the Kane County stormwater management ordinance:

Blackberry Commons planned development
City of Geneva wastewater treatment plant site
City of Geneva water treatment plant site
Comfort Inn
Commuter parking structure
Continental Envelope (Geneva business park)
Delnor Community Hospital campus (Ord. 89-36)
Dempsey office site
Dodson Place planned unit development
Eaglebrook planned development (commercial phase) (Ord. 89-46)
East State Street retail center
Fisher Farms planned Unit development (Ord. 96-25)
Fox Meadow townhouses (Ord 97-44)

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Fox Run subdivision
Geneva Commons (a portion of Fisher Farms planned unit development)
Geneva Drive extension
Geneva park district - Fox River canoe portage
Greenwich Square subdivision
Herrington Inn expansion
Kirk and Fabyan development - lot two (Ord. 2001-73)
Lencioni redevelopment site
MMG Partners assisted living development (Ord. 2001-73)
Millard Refrigerated Services (Geneva business park)
Munchie P's site redevelopment (Ord. 2001-73)
North Riverfront planned development phase III (Ord. 97-15)
Pillsbury Corporation (Geneva business park)
Randall Center subdivision/resubdivision
Randall Square commercial (Ord. 86-42)
Sunset Prairie subdivision
Westhaven planned development (commercial phase) (Ord. 91-37)
Williamsburg planned development (commercial) (Ord. 87-12)

Article 902 is deleted in its entirety and the following inserted therefor:

Variances - Application Fee: The following schedule of fees is hereby established for the filing and review of all stormwater permit variances:

A. Filing Fee (payable when variance application is filed): fifty dollars ($50.00);

B. Cash Deposit - Reimbursement For Professional Services: At the time that an applicant files an application for a variance, said applicant shall submit a deposit with the city in the amount of two thousand five hundred dollars ($2,500.00) to reimburse the city for expenses associated with the review and administration of the variance application. Such deposit shall be in the form of cash, certified check or money order and shall be applied to city staff and professional consulting services, as follows:

1. Public recording fees;

2. Fees for the city attorney's review and negotiations in connection with the filing, review and construction of the project;

3. Fees for professional consultant's review and consultation in connection with the filing, review and construction of the proposed work including meetings and associated tasks. Professional consultants may include, but are not be limited to, civil engineers and wetland specialists;

4. Reimbursement for city staff review: one hundred forty percent (140%) of the hourly rate or prorata salary of each member involved in reviews, meetings, inspections or any associated tasks relative to a stormwater permit variance application. The reimbursement includes administrative overhead expenses relating to city staff wages and salaries.

Subsequent to the performance of tasks, the city shall prepare and tender an invoice notice for said services. The invoice notice shall itemize the expenses associated with said services and be assessed against the deposit. A credit against the deposit shall be made on said invoice and the balance, if any, shall be billed to the applicant prior to the issuance of the permit. At any time during the permit review process, the amount of the deposit has been expended, the applicant shall increase the deposit in an amount determined by the city administrator and further review

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of the application shall be suspended until the supplemental deposit is received by the city. Any balance remaining on the deposit at the time of the issuance of the permit shall be returned to the applicant within thirty (30) days following the permit issuance. In the event the applicant disputes the expenses billed by the city, the applicant shall submit his claim, in writing, to the city administrator within thirty (30) days from the date of invoice, and the city administrator shall seek to resolve the dispute within fourteen (14) days thereof. In the event the city administrator and the applicant are unable to resolve the dispute, the applicant shall be entitled to present his dispute before the city council, whose decision shall be final.

Article 1000.b. - Responsibility for Administration, shall be amended by adding the following sentence and shall read as follows:

The city administrator shall be the director of public works of the city.

Article 1004 - Oversight Committee, shall be amended by adding the following sentence and shall read as follows:

The oversight committee for the city shall be the city council.

Article 1201.a.3. is deleted in its entirety and the following is substituted therefor:

An irrevocable letter of credit, surety bond, or letter of commitment, issued by a bank, savings and loan association, surety, or insurance company, in favor of the City, which is deemed good and sufficient by the City, in an amount equal to one hundred ten percent (110%) of the approved estimated probable cost to complete the construction of any required stormwater facilities. (Ord. No. 2011-04, § 1, 1-18-2011)

Article 1300.a.1. is deleted in its entirety and the following is substituted therefor:

The cost of otherwise providing the required storage considering land cost valued according to the use to which it will ultimately be put if not used to provide the required storage and the cost of making the otherwise required stormwater management improvements. This cost shall be solely determined by the city administrator utilizing the services of a qualified MAI real estate appraiser as to land value and a registered professional engineer as to the estimated costs of the otherwise required stormwater management improvements. (Ord. 2001-57, 8-20-2001)