

APPENDIX

CONSOLIDATED STORM WATER MANAGEMENT, SOIL EROSION AND SEDIMENT CONTROL AND FLOODPLAIN MANAGEMENT REGULATIONS (2003)

STORM WATER MANAGEMENT REGULATIONS

Sec. 31-205 Storm water detention regulations

The storm water detention regulations set forth in this section shall apply to any development for which an application for a preliminary plat is filed on or after December 1, 1993, and to any property subject to Section 8-59 of this Code for which a building permit has been applied for on or after December 1, 1993.

The purpose of the storm water detention regulations is to diminish threats to public health, safety and welfare caused by runoff of excessive storm water from new development and redevelopment. This excessive storm water could result in the inundation of damageable properties, the erosion and destabilization of downstream channels, and the pollution of valuable stream and lake resources. The cause of increases in storm water runoff quantity and rate and impairment of quality is the development and improvement of land. These regulations control development activities to prevent adverse impacts.

These regulations are adopted to accomplish the following objectives:

- Objective 1.*** To assure that new development does not increase the drainage or flood hazards to others or create unstable conditions susceptible to erosion;
- Objective 2.*** To protect new buildings and major improvements to buildings from flood damage due to increased storm water runoff;
- Objective 3.*** To protect human life and health from hazards of increased flooding on a watershed basis;
- Objective 4.*** To lessen the burden on the taxpayer for flood control projects, repairs to flood-damaged public facilities and utilities, correction of channel erosion problems, and flood rescue and relief operations caused by increased storm water runoff quantities from new development;
- Objective 5.*** To protect, conserve and promote orderly development of land and water resources;
- Objective 6.*** To preserve the natural hydrologic and hydraulic functions of watercourses and floodplains and to protect water quality and aquatic habitats;
- Objective 7.*** To preserve the natural characteristics of stream corridors in order to moderate flood and storm water impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits and enhance community and economic development.

Ordinance No. 11301, Section 1, adopted December 3, 1996.

(a) *General regulations*

(1) Site runoff storage shall be provided in accordance with the following table:

LAND USE	EXISTING PARCEL SIZE	SITE RUNOFF STORAGE REQUIRED?	NOTES
<i>Residential Land Uses of Undeveloped Site</i>			
Single Family	Under 5 Acres	No	
Single Family	5 Acres Or More	Yes	Only If More Than 2 Single Family Residences may be Constructed on Site
Two Family	Under 5 Acres	No	
Two Family	5 Acres Or More	Yes	Only If More Than 1 Two Family Residence May be Constructed on Site
Multi-Family	Under 1 Acre	No	
Multi-Family	1 Acre Or More	Yes	
<i>Non-Residential Land Uses of Undeveloped Site</i>			
Any Non-Residential Use	Under 1 Acre	No	
Any Non-Residential Use	1 Acre Or More	Yes	
<i>Additional Development of Developed Residential Site</i>			
Multi-Family	Under 1 Acre	No	
Multi-Family	1 Acre Or More	Yes	Only If Aggregate Disturbed Area Exceeds 25,000 Square Feet
<i>Additional Development of Developed Non-Residential Site</i>			
Any Non-Residential Use	Under 1 Acre	No	
Any Non-Residential Use	1 Acre Or More	Yes	Only If Aggregate Disturbed Area Exceeds 25,000 Square Feet
Roadway Development	n/a	No	If 2 Acres Or Less Of New Impervious Area
Roadway Development	n/a	Yes	If More Than 2 Acres Of New Impervious Area

The peak discharge rate from a storm detention facility shall be controlled for the two year 24 -hour storm event that the 100 year 24 -hour storm event to levels that will not cause an increase in flooding or channel instability downstream when considered in aggregate with other developed properties and downstream drainage capacities. The peak discharge from events less than or equal to the two -year event shall not be greater than 0.04 cfs per acre of property drained. The peak 100 -year discharge shall not be greater than 0.15 cfs per acre of property drained.

- (2) Event hydrograph routing methods or the modified rational method may be used to calculate design runoff volumes for the site runoff facilities. The methods must be HEC-1, (SCS methodology) HEC-HMS, TR-20, or TR-55 tabular method. Event methods shall incorporate the following assumptions:
 - (1) Antecedent moisture condition =2; and
 - (2) Appropriate Huff rainfall distribution; and
 - (3) 24-hour duration storm with a 1% probability (100-year frequency) of occurrence in any one year as specified by the Illinois State Water Survey Bulletin 70 Northeast Sectional rainfall statistics.

Ordinance No. 17283, adopted October 21, 2014

If the modified rational method is used to determine the design runoff volumes, the volume of detention storage shall be determined for the 24 hour 100-year event of critical duration. The volume of detention determined by the rational method shall be multiplied by a factor of 1.3 (130%).

- (3) All design rainfall events shall be based on the Illinois State Water Survey's Bulletin 70, Northeast Sectional Statistics,
- (4) Design criteria for the construction of detention facilities are contained in the Subdivision Regulations.
- (5) The City Manager or his designee shall be authorized to require more stringent release rates where detailed regional studies indicate that the receiving stream does not have capacity to accept release at the rate allows by subsection (a)(1).

Ordinance No. 10323, Section 2, adopted December 8, 1993.

- (6) Site runoff storage is not required in the following circumstances.
 - (i) Direct discharge industrial sites.
 - (ii) Non-industrial discharge sites of 160 acres or less having the following minimum river frontage:

SITE AREA	REQUIRED FRONTAGE
Under 2 Acres	50 feet
2 Or More Acres, But Less Than 5 Acres	100 feet
5 Or More Acres, But Less Than	150 feet

10 Acres	
10 Or More Acres, But Less Than 40 Acres	200 feet
40 Or More Acres, But Less Than 80 Acres	350 feet
80 Or More Acres, But Less Than 160 Acres	500 feet

For the purposes of this Section, Direct Discharge Sites shall be defined as parcels of land, or portions thereof, which are immediately adjacent to and naturally drain to the banks of the Des Plaines River, Chicago and Sanitary Ship Canal or the DuPage River without crossing other private or public property.

Ordinance No. 17283, adopted October 21, 2014.

(b) ***Submittals***

The submittal of the storm water drainage system shall include an evaluation of the site design features which minimize the increase in runoff volumes and rates from the site. The submittal shall include evaluations of site design features which are consistent with the following hierarchy:

- (1) minimize impervious surfaces on the property consistent with the needs of the project;
- (2) attenuate flows by use of open vegetated swales and natural depressions;
- (3) Infiltrate runoff on-site
- (4) provide storm water retention structures;
- (5) provide storm water detention structures;
- (6) construct storm sewers.

Ordinance No. 10323, Section 2, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 2, adopted December 3, 1996.

(c) ***Design Objectives***

- (1) The drainage system should be designed to minimize adverse water quality impacts downstream and on the property itself. Detention basins shall incorporate design features to capture storm water runoff pollutants. In particular, designers shall give preference to wet bottom and wetland designs and all flows from the development shall be routed through the basin (i.e., low flows shall not be bypassed). Retention and infiltration of storm water shall be promoted throughout the property's drainage system to reduce the volume of storm water runoff and to reduce the quantity of runoff pollutants.
- (2) The drainage system should incorporate multiple uses where practicable. Uses considered compatible with storm water management include open space, aesthetics, aquatic habitat, recreation (boating, trails, playing fields), wetlands and water quality mitigation. The applicant should avoid using portions of the property exclusively for storm water management.

Ordinance No. 10323, Section 2, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 3, adopted December 3, 1996.

(d) ***Wet Detention Basins***

- (1) *Wet detention basin design.* Wet detention basins shall be designed to remove storm water pollutants, to be safe, to be aesthetically pleasing, and as much as feasible to be available for recreational use.
- (2) *Wet detention depths.* Wet basins shall be at least three feet deep, excluding near shore banks and safety ledges. If fish habitat is to be provided, they shall be at least ten feet deep over twenty-five percent of the bottom area to prevent winter freeze out.
- (3) *Inlet and outlet orientation.* To the extent feasible the distance between detention inlets and outlets shall be maximized.

Ordinance No. 10323, Section 2, adopted December 8, 1993.

(e) ***Wetland and Dry Detention Basin Design:***

In addition to the other requirements of this ordinance, wet and dry basins shall be designed to remove storm water pollutants, to be safe, to be aesthetically pleasing and as much as feasible to be available for multiple uses.

- (1) *Wetland and Dry Basin Drainage:* Wetland and dry basins shall be designed so that the portion of their bottom area which is intended to be dry shall have standing water no longer than seventy-two hours for all runoff events less than the 100-year event. Under drains directed to the outlet may be used to accomplish this requirement. Grading plans shall clearly distinguish the wet/wetland, portion of the basin bottom from the dry portion.
- (2) *Velocity dissipation:* Velocity dissipation measures shall be incorporated into dry basin designs to minimize erosion at inlets and outlets and to minimize the resuspension of pollutants.
- (3) *Inlet and Outlet Orientation:* To the extent feasible, the distance between detention inlets and outlets shall be maximized. If possible, they should be at opposite ends of the basin. There should be no low flow bypass between the inlet and outlet.
- (4) *Stilling/Sedimentation Basins:* A stilling/sedimentation basin should be constructed at each major inlet to a wetland or dry basin. The volume of the basins should be at least 500 ft. per acre of impervious surface in the drainage area. Side slopes of the basins shall be no steeper than 3 horizontal to 1 vertical and basin depths should be at least 3 feet to minimize resuspension of accumulated sediment.

Ordinance No. 10323, Section 2, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 4, adopted December 3, 1996

(f) ***Minimum detention outlet size***

Where a single pipe outlet or orifice plate is to be used to control the discharge, it shall have a minimum diameter of 4 inches. If this minimum orifice permits a release rate greater than those specified in 31-205(a) and regional detention is not a practical alternative, alternative outlet designs shall be utilized which incorporate perforated risers or other self-cleaning flow restrictors.

Ordinance No. 10323, Section 2, adopted December 8, 1993.

(g) ***Detention in floodplains***

The placement of detention basins within the floodplain is strongly discouraged because of questions about their reliable operation during flood events. However, the storm water detention requirements of this ordinance may be fulfilled by providing detention storage within flood fringe areas on the project site provided the following provisions are met:

- (1) *Detention in flood fringe areas:* The placement of a detention basin in a flood fringe area shall require compensatory storage for 1.0 times the volume below the base flood elevation occupied by the detention basin including any berms. The release from the detention storage provided shall still be controlled consistent with the requirements of this section. The applicant shall demonstrate its operation for all stream flow and floodplain backwater conditions. Excavations for compensatory storage along watercourses shall be opposite or adjacent to the area occupied by detention. All floodplain storage lost below the ten-year flood elevation shall be replaced below the ten-year flood elevation. All floodplain storage lost above the existing ten-year flood elevation shall be replaced about the proposed ten-year flood elevation. All compensatory storage excavations shall be constructed to drain freely and openly to the watercourse.
- (2) *Detention in floodways:* Detention basins shall be placed in the floodway only in accordance with subsection (g)(3).
- (3) *On-stream detention:* On stream detention basins are discouraged but allowable if they provide regional public benefits and if they meet the other provisions of these regulations with respect to water quality and control of the two-year and 100 year, 24-hour events from this property. Further criteria are presented in section 5.5.C.3 of the Subdivision Regulations. If on-stream detention is used for watersheds larger than one square mile, it is recommended that the applicant use dynamic modeling to demonstrate that the design will not increase stage for any properties upstream or downstream of the property. Also, impoundment of the stream as part of on-stream detention:
 - (a) shall not prevent the migration of indigenous fish species, which require access to upstream areas as part of their life cycle, such as for spawning.
 - (b) shall not cause or contribute to the degradation of water quality or stream aquatic habitat,
 - (c) shall include a design calling for gradual bank slopes, appropriate bank stabilization measures, and a pre-sedimentation basin, and,
 - (d) shall require the implementation of an effective nonpoint source management program throughout the upstream watershed which shall include at a minimum: runoff reduction BMPs consistent with this ordinance; 2-year detention/sedimentation basins for all development consistent with Section 709.4; and a program to control nonpoint sources at the source for prior developments constructed without appropriate storm water BMPs.

Ordinance No. 10323, Section 2, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 5, adopted December 3, 1996

(h) ***Protection of Wetlands and Depressional Storage Areas***

Wetlands and other depressional storage areas shall be protected from damaging modifications and adverse changes in runoff quality and quantity associated with land developments. In addition to the

other requirements of this ordinance, the following requirements shall be met for all developments whose drainage flows into wetlands and depressions] storage areas (as appropriate):

- (1) *Detention in Wetlands and Depressional Storage Areas:* Existing wetlands shall not be modified for the purposes of storm water detention unless it is demonstrated that the existing wetland is low in quality and the proposed modifications will maintain or improve its habitat and ability to perform beneficial functions. Existing storage and release rate characteristics of wetlands and other depressional storage areas shall be maintained and the volume of detention storage provided to meet the requirements of this section shall be in addition to this existing storage.
- (2) *Sediment Control:* The existing wetland shall be protected during construction by appropriate soil erosion and sediment control measures and shall not be filled.
- (3) *Alteration of drainage patterns:* Site drainage patterns shall not be altered to substantially decrease or increase the existing area tributary to the wetland.
- (4) *Detention/Sedimentation:* All runoff from the development tributary to the wetland shall be routed through a preliminary detention/sedimentation basin designed to capture the two-year, 24 hour event and hold it for at least 24 hours, before being discharged to the wetland. This basin shall be constructed before grading begins. In addition, the drainage hierarchy defined in Section 31-205 (b) should be followed to minimize runoff volumes and rates being discharged to the wetland.
- (5) *Vegetated Buffer Strip:* A buffer strip of at least 25 feet in width, preferably vegetated with native plant species, shall be maintained or restored around the periphery of the wetland.

Ordinance No. 10323, Section 2, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 6, adopted December 3, 1996

(i) ***Streets and parking lots***

- (1) *Streets:* If streets are to be used as part of the drainage system, ponding depths shall not exceed curb heights by more than six inches and shall not remain flooded for more than eight hours for any event less than or equal to the 100-year event.
- (2) *Parking lots:* The maximum storm water ponding depth in any parking area shall not exceed twelve inches.

Ordinance No. 10323, Section 2, adopted December 8, 1993.

(j) ***Infiltration Practices***

Infiltration practices including basins, trenches and porous pavement may be allowed if the following conditions are met:

- (1) A soil survey indicates that the existing soil types are adequate for infiltration practice.

- (2) The bottom of any proposed infiltration facility is located a minimum of four feet above the seasonally high groundwater and bedrock.
- (3) A sediment settling basin is provided to remove sediment from storm water flows before they reach infiltration basins or trenches.
- (4) Infiltration facilities are located more than 75 feet from any existing or proposed building foundation.
- (5) Storm water shall not be allowed to stand more than 72 hours over eighty percent of a dry basin's bottom area for the maximum design event.
- (6) The infiltration facility is located so that a positive outfall could be installed and the basin could be converted to a dry detention basin if the bottom of the basin becomes clogged with sediment in the future.

Ordinance No. 10323, Section 2, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 7, adopted December 3, 1996

(k) ***Maintenance considerations***

The storm water drainage system shall be designed to minimize and facilitate maintenance. Turfed side slopes shall be designed to allow lawn mowing equipment to easily negotiate them. Pre-sedimentation basins shall be provided with easy methods for removing sediment. Access for heavy equipment shall be provided to the pre-sedimentation basins. In addition, all applicants shall be required to establish a restrictive covenant by notation on the record plat stating that the maintenance of the detention area is the responsibility of all property owners in the subdivision, including bank stabilization, bank maintenance, future sediment removal, or dredging, stabilization of water levels, outfall structures and storm sewer pipes within the detention easement.

Ordinance No. 10323, Section 2, adopted December 8, 1993, as amended by Ordinance No. 14207, Section 7, adopted March 4, 2003..

(l) ***Accommodating flows from upstream tributary areas***

Storm water runoff from areas tributary to the property shall be considered in the design of the property's drainage system. Whenever practicable, flows from upstream areas that are not to be detained should be routed around the basin being provided for the site being developed.

- (1) *Upstream areas not meeting current requirements:* When there are areas not meeting the storage and release rates of these regulations, tributary to the applicant's property, regionalized detention on the applicant's property shall be explored by the applicant. The following steps shall be followed:
 - (a) The applicant shall compute the storage volume needed for his property using the release rates of Section 31- 205(a), the applicant's property area, and the procedures described in section 31-205(a).
 - (b) Areas tributary to the applicant's property, not meeting the storage and release rate requirements of these regulations, shall be identified.

- (c) Using the areas determined in subsection (b) above plus the applicant's property area, total storage needed for the combined properties shall be computed.
 - (d) Allowable release rates shall be computed using the combined property areas. Storage shall be computed as described in Section 31-205(a). If tributary areas are not developed, a reasonable fully developed land cover based on local zoning, shall be assumed for purposes of computing storage.
 - (e) Once the necessary combined storage is computed, the City of Joliet may choose to pay for over sizing the applicant's detention basin to accommodate the regional flows. The applicant's responsibility will be limited to the storage for his property as computed in subsection (a) above. If regional storage is selected by the City of Joliet, then the design produced in subsection (d) above shall be implemented.
 - (f) If regional storage is rejected by the City of Joliet, the applicant shall design the storage and release rates for the applicant's property only. Existing upstream flows shall be routed around the storage when practicable.
- (2) *Upstream areas meeting ordinance requirements:* When there are areas which meet the storage and release rate requirements of this ordinance, tributary to the applicant's property, the upstream flows shall be bypassed around the applicant's detention basin, or be routed through the applicant's detention basin if this is the only practicable alternative. Storage needed for the applicant's property shall still be computed as described in subsection (1)(1). However, if the City of Joliet decides to route tributary area flows through an applicant's basin, the final design storm water releases shall be based on the combined total of the applicant's property plus tributary areas. It must be shown that at no time will the runoff from the applicant's property exceed the allowable release rate for the applicant's property alone.

Ordinance No. 10323, Section 2, adopted December 8, 1993.

(m) ***Time of Construction of Storage Areas***

Where detention, retention or depressional storage areas are to be used as part of the drainage system for a property, they shall be constructed as the first part of the initial earthwork program. Temporary detention facilities can be provided where the schedule for the site does not include the permanent detention site as a part of the initial development. Bonding for the completion of adequate permanent facilities shall be provided with the first increment of the development recorded.

Ordinance No. 10323, Section 2, adopted December 8, 1993.

(n) ***Maintenance responsibility***

The maintenance of storm water detention facilities shall be provided by the property owner(s) of the site. The owner(s) of the property shall grant an easement to the City of Joliet in the event that Joliet needs to enter the property to correct deficiencies in the maintenance provided by the owner(s). Presedimentation facilities, inlet control structures and outlet structures shall be maintained by the City of Joliet to assure adequate functioning of the facility.

SOIL EROSION AND SEDIMENT CONTROL REGULATIONS

Sec. 31-206 Site development permit.

The regulation of soil erosion and sediment control is provided by Sections 31-206 and 31-207. The purpose of these sections is to safeguard persons, protect property, prevent damage to the environment, and promote the public welfare by guiding, regulating and controlling the design, construction, use and maintenance of any development or other activity which disturbs or breaks the topsoil or otherwise results in movement of earth on land situated within the corporate limits of Joliet. It is the intention of these sections that the delivery of sediment from sites affected by land disturbing activity be limited, as closely as practicable, to that which would have occurred if the land had been left in its natural undisturbed state.

It is the objective of these regulations to control soil erosion and sedimentation caused by development activities, including clearing, grading, stripping, excavating, and filling of land. Measures taken to control soil erosion and offsite sediment runoff should be adequate to assure that sediment is not transported from the site by a storm event of ten-year frequency or less. The following principles shall apply to activities regulated by this section.

- Principle 1:*** Development should be related to the topography and soils of the site so as to create the least potential for erosion. Areas of steep slopes where high cuts and fills may be required should be avoided wherever possible, and natural contours should be followed as closely as possible.
- Principle 2:*** Natural vegetation should be retained and protected wherever possible. Areas immediately adjacent to natural watercourses, lakes, ponds, and wetlands should be left undisturbed wherever possible. Temporary crossings of watercourses, when permitted, must include appropriate stabilization measures.
- Principle 3:*** Special precautions should be taken to prevent damages resultant from any necessary development activity within or adjacent to any stream, lake, pond, or wetlands. Preventative measures should reflect the sensitivity of these areas to erosion and sedimentation.
- Principle 4:*** The smallest practical area of land should be exposed for the shortest practical time during development.
- Principle 5:*** Sediment basins or traps, filter barriers, diversions, and any other appropriate sediment or runoff control measures should be installed prior to site clearing and grading and maintained to remove sediment from run-off waters from land undergoing development.
- Principle 6:*** The selection of erosion and sedimentation control measures should be based on assessment of the probable frequency of climatic and other events likely to contribute to erosion, and on evaluation of the risks, costs, and benefits involved.
- Principle 7:*** In the design of erosion control facilities and practices, aesthetics and the requirements of continuing maintenance should be considered.

Principle 8: Provision should be made to accommodate the increased run-off caused by changed soil and surface conditions during and after development. Drainage ways should be designed so that their final gradients and the resultant velocities and rates of discharge will not create additional erosion onsite or downstream.

Principle 9: Permanent vegetation and structures should be installed and functional as soon as practical during development.

Principle 10: Those areas being converted from agricultural purposes to other land uses should be vegetated with an appropriate protective cover prior to development.

Principle 11: All waste generated as a result of site development activity should be properly disposed of and should be prevented from being carried off the site by either wind or water.

Principle 12: All construction sites should provide measures to prevent sediment from being tracked onto public or private roadways.

Ordinance No. 11301, Section 8, adopted December 3, 1996.

(a) **Permit required**

Except as otherwise provided in this ordinance, no person shall commence or perform any clearing, grading, stripping, excavating, or filling of land which meets the following provisions without having first obtained a site development permit from the City of Joliet.

(1) Any land disturbing activity (i.e. clearing, grading, stripping, excavation, fill, or any combination thereof) that will affect an area in excess of 5000 square feet.

(2) Any land disturbing activity that will affect an area in excess of 500 square feet if the activity is within 25 feet of a lake, pond, stream, or wetland; or

(3) Excavation, fill, or any combination thereof that will exceed 100 cubic yards.

Ordinance No. 10323, Section 3, adopted December 8, 1993.

(b) **Exceptions**

A permit shall not be required for any of the following provided that the person responsible for any such development shall implement necessary soil erosion and sediment control measures to satisfy the principles set forth in the Subdivision Regulations.

(1) Excavation below final grade for the basement and footings of a single-family residence and appurtenant structures on a site in excess of two acres for which a building permit has been issued by the City of Joliet;

(2) Excavation below final grade for the basement and footings of a single-family residence on a site two (2) acres or less which was permitted by subdivision approval.

(3) Agricultural use of land on a site which has a permit provided by subdivision; or

(4) Installation, renovation, or replacement of a septic system to serve an existing dwelling or structure.

Ordinance No. 10323, Section 3, adopted December 8, 1993.

(c) ***Application for permit***

Application for a site development permit shall be made by the owner of the property or the owner's authorized agent to the city manager or his designee on a form furnished for that purpose. Each application shall bear the name(s) and address(es) of the owner or developer of the site and of any consulting firm retained by the applicant together with the name of the applicant's principal contract at such firm and shall be accompanied by a filing fee of \$250.00. Each application shall include certification that any land clearing, construction, or development involving the movement of earth shall be in accordance with the plans approved upon issuance of the permit.

Ordinance No. 10323, Section 3, adopted December 8, 1993.

(d) ***Submissions***

Each application for a site development permit shall be accompanied by the following information:

- (1) A vicinity map in sufficient detail to enable easy location in the field of the site for which the permit is sought and including the boundary line and approximate acreage of the site, existing zoning a legend and scale.
- (2)
 - (a) Existing topography of the site and adjacent land within approximately 100 feet of the boundaries, drawn at no greater than two-foot contour intervals **and** clearly portraying the conformation and drainage pattern of the area.
 - (b) The location of existing buildings, structures, utilities, streams, lakes, floodplains, wetlands and depressions, drainage facilities vegetative cover, paved areas and other significant natural or man-made features on the site and adjacent land within 100 feet of the boundary.
 - (c) Proposed use of the site, including present development and planned utilization; areas of clearing, stripping, grading, excavation and filling; proposed contours, finished grades and street profiles; provisions for storm drainage, including storm sewers, swales, detention basins and any other measures to control the rate of runoff with a drainage area map, indications of flow directions and computations; kinds and locations of utilities; and areas and acreages proposed to be paved, covered, sodded or seeded, vegetatively stabilized or left undisturbed.
- (3) An erosion and sediment control plan showing all measures necessary to meet the objectives of this ordinance throughout all phases or construction and permanently after completion of development of the site, including:
 - (a) Location and description including standard depths of all sediment control measures and design specifics of sediment basins and traps including outlet details.
 - (b) Location and description of all soil stabilization and erosion control measures including seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, kind and quantity of mulching for both temporary and permanent vegetative control measures and types of non-vegetative stabilization measures.

- (c) Location and description of all runoff control measures including diversions, waterways and outlets.
 - (d) Location and description of methods to prevent tracking of sediment offsite including construction entrance details as appropriate.
 - (e) Description of dust and traffic control measures.
 - (f) Locations of stockpiles and description of stabilization methods.
 - (g) Description of off-site fill or borrow volumes, locations and methods of stabilization.
 - (h) Provisions for maintenance of control measures including type and frequency of maintenance and easements the person(s) or entity which will have legal responsibility for maintenance of erosion control structures and measures during development and after development is completed.
 - (i) Identification (name, address and telephone) of the person(s) or entity which will have legal responsibility for maintenance of erosion control structures and measures during development and after development is completed.
- (4) The proposed phasing of development of the site including stripping and clearing, rough grading and construction and final grading and landscaping . Phasing should identify the expected date clearing will begin, the estimated duration of exposure of cleared areas, and the sequence of installation of temporary sediment control measures (including perimeter controls), clearing and grading, installation of temporary soil stabilization measures, installation of storm measures, paving streets and parking areas, final grading, and the establishment of permanent vegetative cover and the removal of temporary measures. It shall be the responsibility of the applicant to notify the City of Joliet of any significant changes which occur in the site development schedule after the initial erosion and sediment control plan has been approved.

These submissions shall be prepared in accordance with the requirements of these regulations and the standards and requirements of the "Illinois Urban Manual" (NRCS, IEPA, 1995).

The City of Joliet may waive specific requirements for the content of submissions upon finding that the information submitted is sufficient to show that the work will comply with the objectives and principles of these regulations.

Ordinance No. 10323, Section 3, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 9, adopted December 3, 1996

(e) ***Bonds***

The applicant is required to file with the City of Joliet a faithful performance bond or bonds, letter of credit or other improvement security satisfactory to the city manager or his designee in an amount deemed sufficient by the city manager or his designee to cover all costs of improvements, landscaping, maintenance of improvements and landscaping, and soil erosion and sediment control measures for such period as specified by the City of Joliet and engineering and inspection cost to cover the cost of failure or repair or improvements installed on the site.

Ordinance No. 10323, Section 3, adopted December 8, 1993.

(f) ***Review and approval***

Each application for a site development permit shall, be reviewed and acted upon according to the following procedures:

- (1) The City of Joliet will review each application for a site development permit to determine its conformance with the provisions. of this ordinance. Within 30 days after receiving an application, the City of Joliet shall in writing:
 - (a) Approve the permit application if it is found to be in conformance with the provisions of this ordinance and issue the permit;
 - (b) Approve the permit application subject to such reasonable conditions as may be necessary to secure substantially the objectives of this ordinance and issue the permit subject to these conditions; or
 - (c) Disapprove the permit application indicating the deficiencies and the procedure for submitting a revised application and/or submission.
- (2) No site development permit shall be issued unless the applicant is notified of his responsibility to obtain all relevant federal and state permits (i.e. for floodplains and wetlands).
- (3) Failure of the City of Joliet to act on an original or revised application within 30 days of receipt shall authorize the applicant to proceed in accordance with the plans as filed unless such time is extended by agreement between the City of Joliet and the applicant. Pending preparation and approval of a revised plan, development activities shall be allowed to proceed in accordance with conditions established by the City of Joliet.

Ordinance No. 10323, Section 3, adopted December 8, 1993.

(g) ***Expiration of permit***

Every site development permit shall expire and become null and void if the work authorized by such permit has not been commenced within two (2) years, or is not completed by a date which shall be specified in the permit; except that the City of Joliet may, if the permitted presents satisfactory evidence that unusual difficulties have prevented work being commenced or completed within the specified time limits, grant reasonable extension of time if written application is made before the expiration date of the permit. The City of Joliet may require modification of the erosion control plan to prevent any increase in erosion or offsite sediment runoff resulting from any extension.

Ordinance No. 10323, Section 3, adopted December 8, 1993.

(h) ***Stop Work Order***

In the event any person holding a site development permit pursuant to this ordinance violates the terms of the permit, or carries on site development in such a manner as to materially adversely affect the health, welfare or safety of persons residing or working in the neighborhood of the development site or so as to be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood the City Manager may suspend or revoke the site development permit.

- (1) Suspension of a permit shall be by written stop-work order issued by the City Manager and delivered to the permittee, its agent or the person performing the work. The stop-work order shall be effective immediately, shall state the specific violations cited, and shall state the conditions under which work may be resumed.
- (2) No site development permit shall be permanently suspended or revoked until a hearing is held by the City Manager. Written notice of such hearing shall be served on the permittee, either personally or by registered mail, and shall state the grounds for the complaint or the reasons for suspension or revocation and the time when and place where such hearing will be held. Such notice shall be served on the permittee at least five (5) days prior to the date set for the hearing. At such hearing, the permittee shall be given an opportunity to be heard and may call witnesses and present evidence. At the conclusion of the hearing the City Manager shall determine whether the permit shall be suspended or revoked.

Ordinance No. 14204, Section 8, adopted March 4, 2003.

(i) ***Enforcement***

No person shall construct, alter, repair, or maintain any grading, excavation or fill, or cause the same to be done in violation of any of this ordinance. Any person violating this ordinance shall be guilty of an ordinance violation. Each day during which any violation of this ordinance is committed, continued or permittee shall constitute a separate offense. Upon conviction of any such violation, such person, partnership or corporation shall be punished by a fine of not more than Seven Hundred Fifty Dollars (\$750.00) for each offense. In addition to any other penalty authorized by this ordinance, any person convicted of violating this ordinance shall be required to restore the site to condition existing prior to commission of the violation and to bear the expense of such restoration.

Ordinance No. 14204, Section 9, adopted March 4, 2003.

Sec. 31-207 Design and operation standards and requirements

(a) ***Soil erosion and sediment controls***

Site design requirements for soil erosion and sediment controls: on-site sediment control measures as specified by the following criteria shall be constructed and functional prior to initiating clearing, grading, stripping, excavating or fill activities on the site.

- (1) For disturbed areas draining less than one acre, filter barriers (including filter fences, straw bales, or equivalent control measures) shall be constructed to control all offsite runoff as specified in referenced handbooks. Vegetated filter strips with a minimum width of 25 feet may be used as an alternative only where runoff in sheet flow is expected.
- (2) For disturbed areas draining more than 1 but less than 5 acres, a sediment trap or equivalent control measure shall be constructed at the downslope point of the disturbed area.
- (3) For disturbed areas draining more than 5 acres, a sediment basin or equivalent control measure shall be constructed at the downslope point of the disturbed area.

- (4) Sediment basins and sediment trap designs shall meet the requirements of the "Illinois Urban Manual"(NRCS, IEPA, 1995).
- (5) The sediment storage shall be sized to store the estimated sediment load generated from the site over the duration of the construction period with a minimum storage equivalent to the volume of sediment generated in one year. For construction periods exceeding one year, the one-year sediment load and sediment removal schedule may be substituted.

Ordinance No. 10323, Section 4, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 10, adopted December 3, 1996

(b) ***Storm water conveyance channels***

Storm water conveyance channels including ditches, swales and diversions and the outlets of all channels and pipes shall be designed and constructed to withstand the expected flow velocity from the 10-year frequency storm without erosion. All constructed or modified channels shall be stabilized within 48 hours consistent with the following standards:

- (1) For grades up to 4 percent, seeding in combination with mulch, erosion blanket or an equivalent control measure shall be applied. Sod or erosion blanket or mat shall be applied to the bottom of the channel.
- (2) For grades of 4 to 8 percent, sod or an equivalent control measure shall be applied in the channel.
- (3) For grades greater than 8 percent, rock, riprap or an equivalent measure shall be applied or the grade shall be effectively reduced using drop structures.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(c) ***Disturbed areas***

Disturbed areas shall be stabilized with temporary or permanent measures within seven calendar days following the end of active disturbance or redisturbance consistent with the following criteria:

- (1) Appropriate temporary or permanent stabilization measures shall include seeding, mulching, sodding and/or non-vegetative measures.
- (2) Areas having slopes greater than 12 percent shall be stabilized with sod, mat or blanket in combination with seeding or equivalent.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(d) ***Land disturbance activities in stream channels***

Land disturbance activities in stream channels shall be avoided where possible. If disturbance activities are unavoidable, the following requirements shall be met:

- (1) Construction vehicles shall be kept out of the stream channel to the maximum extent practicable. Where construction crossings are necessary, temporary crossings shall be constructed of non-erosive material such as riprap or gravel.
- (2) The time and area of disturbance of stream channels shall be kept to a minimum. The stream channel including bed and banks shall be restabilized within 48 hours after channel disturbance is completed interrupted or stopped.
- (3) Whenever channel relocation is necessary, the new channel shall be constructed in the dry and fully stabilized area before flow is diverted.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(e) ***Protection of storm sewer inlets and culverts***

Storm sewer inlets and culverts shall be protected by sediment traps or filter barriers meeting accepted design standards and specifications.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(f) ***Soil storage piles***

Soil storage piles containing more than 10 cubic yards of material shall not be located with a down slope drainage length of less than 25 feet to a roadway or drainage channel. Filter barriers including straw bales, filter fence or equivalent shall be installed immediately on the down slope side of the piles.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(g) ***Dewatering devices***

If dewatering devices are used, discharge locations shall be protected from erosion. All pumped discharges shall be routed through appropriately designed sediment traps or basins or equivalent.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(h) ***Temporary Access Roads***

Each site shall have graveled (or equivalent) entrance roads, access drives and parking areas of sufficient length and width to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by shoveling or street cleaning before the end of each workday and transported to a controlled sediment disposal area.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(i) ***Maintenance***

All temporary and permanent erosion and sediment control practices must be maintained and repaired as needed to assure effective performance of their intended function.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(j) ***Temporary Erosion Disposal***

All temporary erosion and be disposed of within 30 days after final site stabilization measures. Trapped sediment and other disturbed soils resulting from the disposition of temporary measures should be permanently stabilized to prevent further erosion and sedimentation.

Ordinance No. 10323, Section 4, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 11, adopted December 8, 1996.

(k) ***Handbook adopted by reference***

The standards and specifications contained in the "Illinois Urban Manual" published by the Natural Resources Conservation Service and the Illinois Environmental Protection Agency in 1995 and the "Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control" published in 1988 (the "Greenbook") are hereby incorporated by reference and made a part hereof by reference for the purpose of delineating procedures and methods of operation under site development and erosion and sedimentation control plans approved under Section 31-206. In the event of a conflict between provisions of said manuals and this section, this section shall govern.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(l) ***Maintenance of control measures***

All soil erosion and sediment control measures necessary to meet the requirements of this ordinance shall be maintained periodically by the applicant or subsequent land owner during the period of land disturbance and development of the site in a satisfactory manner to ensure adequate performance.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(m) ***Inspection***

The City Of Joliet shall make periodic inspections and shall notify the permittee wherein the work fails to comply with the site development or erosion and sedimentation control plan as approved. The permittee shall request inspections two working days prior to the completion of the following items:

- (1) The completion of installation of sediment and runoff control measures(including perimeter controls and diversions), prior to proceeding with any other earth disturbance or grading;
- (2) After stripping and clearing;
- (3) After rough grading;
- (4) After final grading
- (5) After seeding and landscaping;
- (6) After final stabilization and landscaping, prior to removal of sediment controls.

If stripping, clearing, grading and/or landscaping are to be done in phases or areas, the permittee shall give notice and request inspection at the completion of the above stages of work in each phase or area.

Ordinance No. 10323, Section 4, adopted December 8, 1993, as amended by Ordinance No. 11301, Section 12, adopted December 8, 1996.

(n) ***Special precautions***

If at any stage of the grading of any development site, the City of Joliet determines by inspection that the nature of the site is such that further work authorized by an existing permit is likely to imperil any property, public way, stream, lake, wetland or drainage structure, the City of Joliet may require as a condition of allowing the work to be done that such reasonable special precautions to be taken as in considered advisable to avoid the likelihood of such peril.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(o) ***Stop Work Order***

Where it appears that storm damage may result because the grading on any development site is not complete, work may be stopped and the permittee required to install temporary structures or take such other measures as may be required to protect adjoining property or the public safety.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

(p) ***Amendment of plans:***

Major amendments of the site development or erosion and sedimentation control plans shall be submitted to the City of Joliet and shall be processed and approved or disapproved in the same manner as the original plans. Field modifications of a minor nature may be authorized by the City of Joliet.

Ordinance No. 10323, Section 4, adopted December 8, 1993.

FLOODPLAIN MANAGEMENT REGULATIONS

- 8-500 Short Title
- 8-501 Purpose
- 8-502 Definitions
- 8-503 How to Use this Ordinance
- 8-504 Duties of the Enforcement Official
- 8-505 Base Flood Elevation
- 8-506 Occupation and Use of Flood Fringe Areas
- 8-507 Occupation and Use of Identified Floodways
- 8-508 Occupation and Use of Special Flood Hazard Areas Where Floodways are Not Identified
- 8-509 Permitting Requirements Applicable to All Flood Plain Areas and Protection of Buildings

- 8-510 Other Development Requirements
- 8-511 Variances
- 8-512 Disclaimer of Liability
- 8-513 Enforcement and Penalties

Section 8-500 Short Title.

This Ordinance shall be known, and may be cited, as the “*Joliet Special Flood Hazard Areas Development Ordinance*”.

Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-501 Purpose.

This Ordinance is enacted pursuant to the powers granted to the City by Sections 1-2-1, 11-12-12, 11-30-8, and 11-30-2 of the *Illinois Municipal Code* (65 ILCS 1-1 et seq.) and pursuant to the home rule powers vested in the City of Joliet by the Constitution of the State of Illinois. The purpose of this Ordinance is to maintain the City’s eligibility in the *National Flood Insurance Program*; to minimize potential losses due to periodic flooding including loss of life, loss of property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare; and to preserve and enhance the quality of surface waters, conserve economic and natural values and provide for the wise utilization of water and related land resources. This Ordinance is adopted in order to accomplish the following specific purposes.

- a. To meet the requirements of the Rivers, Lakes and Streams Act (615 ILCS 5/18g);
- 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; and
- g. To comply with the rules and regulations of the *National Flood Insurance Program*, codified as 44 CFR 59-79, as amended.

- h. To protect, conserve and promote the orderly development of land and water resources; and
- i. To preserve the natural characteristics and functions of watercourses and floodplains in order to moderate flood and storm water impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits and enhance community and economic development.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-502 Definitions.

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

- a. "*Act*" shall mean the *Rivers, Lakes and Streams Act* (615 ILCS 5/5 et seq.),
- b. "*Applicant*" shall mean any person, firm, corporation or agency which submits an application.
- c. "*Appropriate Use*" shall mean 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 8-507 of this Ordinance.
- d. "*Base Flood*" shall mean the flood having a one-percent probability of being equaled or exceeded in any given year. The base flood is also known as the 100-year frequency flood event. Application of the base flood elevation at any location is as defined in Section 8-505 of this Ordinance.
- e. "*Building*" shall mean a structure that is principally above ground 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 180 days.
- f. "*Channel*" shall mean any river, stream, creek, brook, branch, natural or artificial depression, ponded area, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or man-made drainageway, which has a definite bed and banks or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.
- g. "*Channel Modification*" shall mean alteration of a channel by changing the physical dimensions or materials of its bed or banks. Channel modification includes damming, rip-rapping or other armoring, widening, deepening, straightening, relocating, lining and significant removal of 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 typically involving relocation of the existing channel (e.g. straightening).

- h. "*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 flood plain. The uncompensated loss of natural flood plain storage can increase off-site floodwater elevations and flows.
- i. "*Conditional Approval of a Regulatory Floodway Map Change*" shall mean Preconstruction approval by DNR and the Federal Emergency Management Agency (FEMA) of a proposed change to the floodway map. This preconstruction approval, pursuant to this Part, gives assurances to the property owner that once an Appropriate Use is constructed according to permitted plans, the floodway map can be changed, as previously agreed, upon review and acceptance of as-built plans.
- j. "*Conditional Letter of Map Revision (CLOMR)*" shall mean a letter which indicates that the FEMA will revise base flood elevations, flood insurance rate zones, flood boundaries or floodway as shown on an effective Flood Hazard Boundary Map or Flood Insurance Rate Map, once the as-built plans are submitted and approved.
- k. "*Control Structure*" shall mean a structure designed to control the rate of flow that passes through the structure, given a specific upstream and downstream water surface elevation.
- l. "*Dam*" shall mean 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.
- m. "*Development*" shall mean any man-made change to real estate, including:
 - (i) Construction, reconstruction, repair, or placement of a building or any addition to a building.
 - (ii) 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 180 days.
 - (iii) Drilling, mining, installing utilities, construction of roads, bridges, or a similar projects.
 - (iv) Demolition of a structure or redevelopment of a site.
 - (v) Clearing of land as an adjunct of construction.
 - (vi) Construction or erection of levees, walls, fences, dams, or culverts; channel modification; filling, dredging, grading, excavating, paving, or other non-agricultural alterations of the ground surface; storage of materials; deposit of solid or liquid waste.
 - (vii) 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 re-roofing or re-surfacing 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.

- n. "*DNR*" shall mean the Illinois Department of Natural Resources.
- o. "*Elevation Certificates*" shall mean a form published by FEMA that is used to certify the elevation to which a building has been elevated.
- p. "*Erosion*" shall mean the general process whereby soils are moved by flowing water or wave action.
- q. "*Exempt Organizations*" shall mean organizations which are exempt from this ordinance pursuant to law, including state, federal and units of local government.
- r. "*FEMA*" shall mean the Federal Emergency Management Agency and its regulations at 44 CFR 59-79 effective as of March 17, 2003.
- s. "*Flood*" shall mean 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.
- t. "*Flood Frequency*" shall mean 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.
- u. "*Flood Fringe*" shall mean that portion of the flood plain outside of the regulatory floodway.
- v. "*Flood Insurance Rate Maps (FIRM)*" shall mean 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 flood plains and may or may not depict floodways.
- w. "*Flood Plain*" shall mean 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. Flood plains may also include detached Special Flood Hazard Areas, ponding areas, etc. The flood plain is also known as the Special Flood Hazard Area (SFHA). The flood plains are those lands within the jurisdiction of the City that are subject to inundation by the base flood or 100-year frequency flood. The SFHA's of the City are generally identified as such on the Flood Insurance Rate Map of Will County prepared by the Federal Emergency Management Agency (or the U.S. Department of Housing and Urban Development) and dated March 17, 2003. The SFHA's of those parts of unincorporated territory 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 Will County \by FEMA and dated March 17, 2003.
- x. "*Floodproofing*" shall mean 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.
- y. "*Floodproofing Certificate*" shall mean a form published by FEMA that is used to certify that a building has been designed and constructed to be structurally dry floodproofed to the flood protection elevation.
- z. "*Flood Protection Elevation (FPE)*" shall mean the elevation of the base flood 100-year frequency flood plus one foot of freeboard at any given location in the SFHA.

- aa. "*Freeboard*" shall mean 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.
- bb. "*Hydrologic and Hydraulic Calculations*" shall mean engineering analysis which determine expected flood flows and flood elevations based on land characteristics and rainfall events.
- cc. "*Letter of Map Amendment (LOMA)*" shall mean 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.
- dd. "*Letter of Map Revision (LOMR)*" shall mean a 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.
- ee. "*Manufactured Home*" shall mean 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 180 consecutive days.
- ff. "*Manufactured Home Park or Subdivision*" shall mean a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.
- gg. "*Mitigation*" shall mean those measures necessary to minimize the negative effects which flood plain 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.
- hh. "*NGVD*" shall mean the 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.
- ii. "*Natural*" shall mean, when used in reference to channels, 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 flood plain is not constrained by levees; the area near the bank has not been cleared, mowed or cultivated; the stream flows over soil and geologic materials typical of the area with no substantial alteration of the course or cross-section of the stream caused by filling or excavating. A modified channel may regain some natural characteristics over time as the channel meanders and vegetation is reestablished. Similarly, a modified channel may be restored to more natural conditions by man through regrading and revegetation.
- jj. "*Ordinary High Water Mark (OHWM)*" shall mean 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.
- kk. "*Public Flood Control Project*" shall mean 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.

- ll. "*Publicly Navigable Waters*" shall mean all streams and lakes capable of being navigated by watercraft.
- mm. "*Professional Land Surveyor*" shall mean a land surveyor registered in the State of Illinois under the *Illinois Professional Land Surveyor Act of 1989* (225 ILCS 330/1 et seq.).
- nn. "*Professional Engineer*" shall mean an engineer licensed under the laws of the State of Illinois to practice professional engineering as set forth in the *Professional Engineering Practice Act of 1989* (225 ILCS, 325/1 et seq.).
- oo. "*Regulatory Floodway*" shall mean the channel, including onstream lakes, and that portion of the flood plain adjacent to a stream or watercourse as designated by DNR, which is needed to store and convey the existing and anticipated future 100-year frequency flood discharge with no more than a 0.1 foot increase in stage due to the loss of flood conveyance or storage, and no more than a 10% increase in velocities. The regulatory floodways are designated on the Will County FIRM prepared by FEMA and dated March 17, 2003. The regulatory floodways for those parts of unincorporated territory that are within the extraterritorial jurisdiction of the City that may be annexed into the City which are designated for on the Will County FIRM prepared by and dated March 17, 2003. The rivers included, but not limited to, are: DuPage River, Rock Run Creek, Rock Run Slough, Rock Run Tributaries 1, 2 and 3, Sunnyland Drain, Sunnyland Drain Tributary, Caton Creek, Lily Cache Creek, DesPlaines River, Hickory Creek, Spring Creek, Illinois & Michigan Canal, and Thorne Creek. 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, DNR should be contacted for the interpretation.
- pp. "*Repair, Remodeling or Maintenance*" shall mean 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.
- qq. "*Retention/Detention Facility*" A retention facility stores storm water runoff without a gravity release. A detention facility provides for storage of storm water runoff and controlled release of this runoff during and after a flood or storm.
- rr. "*Riverine SFHA*" shall mean any SFHA subject to flooding from a river, creek, intermittent stream, ditch, on stream lake system or any other identified channel. This term does not include areas subject to flooding from lakes, ponding areas, areas of sheet flow, or other areas not subject to overbank flooding.
- ss. "*Runoff*" shall mean 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.
- tt. "*Sedimentation*" shall mean the processes that deposit soils, debris, and other materials either on other ground surfaces or in bodies of water or watercourses.
- uu. "*Special Flood Hazard Area (SFHA)*" shall mean 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.

- vv. "*Structure*" shall mean the results of a man-made 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 180 days.
- ww. "*Substantial Improvement*" shall mean any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds 50 percent 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 (1) 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 (2) any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.
- xx. "*Transition Section*" shall mean the reaches of the stream or floodway where water flows from a narrow cross-section to a wide cross-section or vice versa.
- yy. "*City Manager*" shall mean the City Manager of the City of Joliet or another City official designated by the City Manager as the official responsible for administering this Ordinance.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended by ordinance No. 10912, Section 1, adopted September 19, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-503: How to Use This Ordinance.

The City Manager shall be responsible for fulfilling all of the duties listed in Section 8-504.

To fulfill those duties, the City Manager first should use the criteria listed in Section 8-505, *Base Flood Elevations*, to determine whether the development site is located within a flood plain. Once it has been determined that a site is located within a flood plain, the City Manager must determine whether the development site is within a flood fringe, a regulatory floodway, or within a SFHA or flood plain on which no floodway has been identified. If the site is within a flood fringe, the City Manager shall require that the minimum requirements of Section 8-506 be met. If the site is within the floodway, the City Manager shall require that the minimum requirements of Section 8-507 be met. If the site is located within a SFHA or floodplain for which no detailed study has been completed and approved, the City Manager shall require that the minimum requirements of Section 8-508 be met.

In addition, the general requirements of Section 8-509 shall be met for all developments meeting the requirements of Section 8-506, 8-507 or 8-509. The City Manager shall assure that all subdivision proposals shall meet the requirements of Section 8-510.

If a variance is to be granted for a proposal, the City Manager shall review the requirements of Section 8-511 to make sure they are met. In addition, the City Manager shall complete all notification requirements.

In order to assure that property owners obtain permits as required in this Ordinance, the City Manager may take any and all actions as outline in Section 8-513.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-504: Duties of the Enforcement Official(s).

The City Manager shall be responsible for the general administration and enforcement of this Ordinance which shall include the following:

- a. *Determining the Flood Plain 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 in a floodway, flood fringe or in a flood plain on which a detailed study has not been conducted which drains more than one (1) square mile.
- b. *Professional Engineer Review:* If the development site is within a floodway or in a flood plain on which a detailed study has not been conducted which drains more than one (1) 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 8-507. In the case of an Appropriate Use, the P.E. shall state in writing that the development meets the requirements of Section 8-507.
- c. *Dam Safety Requirements:* Ensure that a DNR 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 8-502. Regulated dams may include weirs, restrictive culverts or impoundment structures.
- d. *Other Permit Requirements:* Ensure that any and all required federal, state and local permits are received prior to the issuance of a flood plain development permit.
- 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 Ordinance and issue a flood plain development permit in accordance with the provisions of this Ordinance and other regulations of the City when the development meets the conditions of this Ordinance.

- 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 Ordinance.

- 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 non-residential building or the elevation to which a non-residential building has been floodproofed, using a Floodproofing Certificate, for all buildings subject to Section 8-509 of this Ordinance for public inspection and provide copies of same;

- 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 floodproofing or elevation and floodproofing certificates for all buildings constructed subject to this Ordinance.

- i. State Permits: Ensure that construction authorization has been granted by DNR, for all development projects subject to Section 8-507 and 8-508 of this Ordinance, unless enforcement responsibility has been delegated to the City. Upon acceptance of this Ordinance by DNR and FEMA, the City shall be deemed to accept the delegation of responsibility and authority pursuant to 17 IL Adm. Code 3708.90 pertaining to construction in the regulatory floodway and flood plain when floodways have not been defined in Sections 8-507 and 8-508 of this Ordinance. However, the following review approvals are not delegated to the City and shall require review or permits from DNR:
 - (i) Organizations which are exempt from this Ordinance under State or Federal law.

 - (ii) DNR projects, dams or impoundment structures as defined in Section 8-502 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 Sec. 8-507.

 - (iii) 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 Section 8-507e.

 - (iv) An engineer’s analysis of the flood profile due to Section 8-507e

 - (v) Alternative transition sections and hydraulically equivalent compensatory storage as indicated in Section 8-507e.(i, ii, viii).

 - (vi) Permit issuance of structures within or over publicly navigable rivers, lakes and streams;

(vii) Any changes in the Base Flood Elevation or floodway locations; and,

(viii) Base Flood Elevation determinations where none now exist.

- j. Cooperation with Other Agencies: Cooperate with state and federal flood plain management agencies to improve base flood or 100-year frequency flood and floodway data and to improve the administration of this Ordinance. Submit data to DNR and FEMA for proposed revisions of a regulatory map. Submit reports as required for the National Flood Insurance Program. Notify FEMA of any proposed amendments to this Ordinance.
- k. Promulgate Regulations: Promulgate rules and regulations as necessary to administer and enforce the provisions of this Ordinance, subject however to the review and approval of DNR and FEMA for any Ordinance changes.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-505: Base Flood Elevation.

This Ordinance's protection standard is based on the Flood Insurance Study for Will County. 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 Surveys Flood Plain Information Repository. When a party disagrees with the best available data, that party may finance the detailed engineering study needed to replace existing data with better data and submit it to DNR and FEMA.

- a. The base flood or 100-year frequency flood elevation for the SFHAs of all rivers and creeks shall be as delineated on the 100-year flood profiles in the Flood Insurance Study of Will County prepared by FEMA dated March 17, 2003 and such other amendments or revisions to such study and maps as may be prepared from time to time. The rivers included but not limited to are: DuPage River, Rock Run Creek, Rock Run Slough, Rock Run Tributaries 1, 2 and 3, Sunnyland Drain, Sunnyland Drain Tributary, Caton Creek, Lily Cache Creek, Des Plaines River, Hickory Creek, Spring Creek, Illinois & Michigan Canal, and Thorne Creek.
- b. The base flood or 100-year frequency flood elevation for the SFHAs of those parts of unincorporated Will County that are within the extraterritorial jurisdiction of the City or that

may be annexed into the City shall be as delineated on the 100-year flood profiles in the Flood Insurance Study of Will County prepared by FEMA and dated March 17, 2003 and such amendments or revisions to such study and maps as may be prepared from time to time.

- 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.
- 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 Will County 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 water shed as determined from adopted local and regional land use plans. Along any watercourses draining more than one (1) square mile, the above analysis shall be submitted to DNR for approval, once approved it must be submitted to the Illinois State Water Survey Floodplain Information Repository for filing. For a non-riverine SFHA, the Base Flood Elevation shall be the historic Flood of Record plus three feet, unless calculated by a detailed engineering study and approved by the Illinois State Water Survey.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended by ordinance No. 10912, Section 1, adopted September 19, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-506: Occupation and Use of Flood Fringe Areas.

Development in and/or filling of the flood fringe will be permitted if protection is provided against the base flood or 100-year frequency flood by proper elevation, and compensatory storage and other provisions of this Ordinance 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 8-509.

- a. Development Permit: No person, firm, corporation, or governmental body not exempted under Illinois law shall commence any development in the SFHA without first obtaining a development permit from the City Manager.
- b. Permit Application: Application for a development permit shall be made on a form provided by the City Manager. 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 N.G.V.D. 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 basement) and lowest adjacent grade shall be shown on

the submitted plans and the development will be subject to the requirements of Section 8-509 of this Ordinance.

- c. Application- Review: Upon receipt of a development permit application, the City Manager 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 Ordinance. The Building Official shall maintain documentation of the existing ground elevation at the development site and certification that this ground elevation existed prior to the date of the site's first Flood Insurance Rate Map identification.
- d. *Reserved*
- e. Submittal of Other Permits: The applicant shall submit to the City Manager 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 City Manager shall not issue a permit unless all other local, state and federal permits have been obtained.
- f. Preventing Increased Damages: No development in the flood fringe shall create a threat to public health and safety.
- g. Filling: 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 flood plain.
- h. Compensatory Storage: Whenever any portion of a flood plain 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 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 flood plain storage lost below the existing 10-year flood elevation shall be replaced below the proposed 10-year flood elevation. All flood plain 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.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-507 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 all rivers, creeks and streams shall be as delineated on the regulatory floodway maps designated by DNR according and references in Section 8-502oo. 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 8-509.

- a. 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 City Manager.
- b. Permit Application: Application for a development permit shall be made on a form provided by the City Manager. The application shall include the following information:
 - (i) Name and address of applicant;
 - (ii) 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;
 - (iii) Name of stream or body of water affected;
 - (iv) Description of proposed activity;
 - (v) Statement of purpose of proposed activity;
 - (vi) Anticipated dates of initiation and completion of activity;
 - (vii) Name and mailing address of the owner of the subject property if different from the applicant;
 - (viii) Signature of applicant or the applicant's agent;
 - (ix) If the applicant is a corporation, the president or other authorized officer shall sign the application form;
 - (x) If the applicant is a partnership, each partner shall sign the application form; and
 - (xi) If the applicant is a land trust, the trust officer shall sign the name of the trustee by him (her) as trust officer. A disclosure affidavit shall be filed with the application, identifying each beneficiary of the trust by name and address and defining the respective interests therein.
 - (xii) 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 N.G.V.D., 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, flood plain limit, 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 view 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) *Reserved*
 - (e) A copy of the regulatory floodway map, marked to reflect any proposed change in the regulator floodway location.
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- (xiii) Any and all other local, state and federal permits or approval letters that may be required for this type of development.
 - (xiv) Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the permit criteria of Section 8-507 d.
 - (xv) 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 DNR 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.
 - (xvi) 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 flood plain 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 8-509 of this Ordinance.

(xvii) *Reserved*

- c. *Submittal of Other Permits:* The applicant shall obtain and submit to the City Manager copies of all other local, state, and federal permit and approvals that may be required for this type of activity. The City Manager shall not issue the development permit unless all required federal and state permits have been obtained. A Registered Professional Engineer, under the employ or contract of the City shall review and approve applications reviewed under this Section.
- d. *Preventing Increased Damages and a List of Appropriate Uses:* 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 functions of the floodway or channel, or permanently impair existing water quality or aquatic habitat. Construction methods shall be minimized by appropriate mitigation methods as called for in this Ordinance. Only those Appropriate Uses listed in 17 IL Adm. Code 3708 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 non-appropriate uses in the floodway, fencing (including landscaping or planting designed to act as a fence) and storage of materials except as specifically defined above as an Appropriate Use. The approved Appropriate Uses are as follows:
- (i) 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.
 - (ii) 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;
 - (iii) Storm and sanitary sewer outfalls;
 - (iv) Underground and overhead utilities;
 - (v) Recreational facilities such as playing fields and trail systems including any related fencing (at least 50% open when viewed from any one direction) built parallel to the direction of flood flows, and including open air pavilions and toilet facilities (4 stall maximum) that will not block flood flows nor reduce floodway storage;

- (vi) Detached garages, storage sheds, or other non-habitable accessory structures without toilet facilities to existing buildings that will not block flood flows, nor reduce floodway storage;
 - (vii) Bridges, culverts, roadways, sidewalks, railways, runways and taxiways and any modification thereto;
 - (viii) Parking lots and aircraft parking aprons built at or below existing grade where either:
 - (a) the depth of flooding at the 100-year frequency flood event will not exceed one foot; or
 - (b) the applicant of a short-term recreational use facility parking lot, formally agrees to restrict access during overbank flooding events and accepts liability for all damage caused by vehicular access during all overbank flooding events;
 - (ix) Regulatory floodway regrading, without fill, to create a positive non-erosive slope toward a watercourse.
 - (x) Floodproofing activities to protect previously existing lawful structures including the construction of water tight window wells, elevating structures, or construction of floodwalls around residential, commercial or industrial principal structures where the outside toe of the floodwall shall be no more than ten (10) feet away from the exterior wall of the existing structure, and, which are not considered substantial improvements to the structure.
 - (xi) In the case of damaged or replacement buildings, reconstruction or repairs made to a building that are valued at less than 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.
 - (xii) Additions to existing buildings above the BFE that do not increase the building's foot print and are valued at less than 50% of the market value of the building.
- e. Regulatory Floodway Use: Within the regulatory floodway as identified on the regulatory floodway maps designated by DNR, the construction of an Appropriate Use will be considered permissible provided that the proposed project meets the following engineering and mitigation criteria and is so stated in writing with supporting plans, calculations and data by a registered professional engineer and provided that any structure meets the protection requirements of Section 8-509 of this Ordinance.

- (i) *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, where $K = (1.486/n) \times AR^{2/3}$

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 non-vegetative 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 DNR through engineering calculations or model tests that 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 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 horizontal for every one foot of the flooded stream’s length.
 - (3) When expanding or contracting flows in a vertical direction, a minimum of one foot vertical transition for every ten feet of stream length shall be used.

- (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.
- (ii) Preservation of Floodway Storage so as 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 the volume of flood plain 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 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 DNR through a determination of flood discharges and water surface elevations that the compensatory storage is hydraulically equivalent.
- (iii) 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. 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 increased at the structure site if scour, erosion and sedimentation will be avoided by the use of rip-rap or other design measures.
- (iv) 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 0.1 foot when compared to the existing conditions for all flood events up to and including the 100-year frequency event; or the upstream flood stage increases will be contained within the channel banks (or within existing vertical extensions of the channel banks) such as within the design protection grade of existing levees or flood walls or within recorded flood easements. If the proposed construction will increase upstream flood stages greater than 0.1 feet, the developer must contact DNR, 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 8-505 of this Ordinance.

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) Lots floodway storage must be compensated for per Section 8-507 e(ii).
- (c) Velocity increases must be mitigated per Section 8-507 e(iii)
- (d) If the crossing is proposed over a public water that is used for recreational or commercial navigation, a DNR 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 DNR for concurrence that a CLOMR is not required by Section 8-507d.
- (f) All excavations for the construction of the crossing shall be designed per Section 8-507 e(viii).

(v) *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 0.1 foot increase in backwater over the existing flood profile for all flood frequencies up to and including the 100-year event, if the existing structure is not a source of flood damage.
- (b) If the existing bridge or culvert and roadway approach is a source of flood damage to buildings or structures in the upstream flood plain, 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 17 IL. Adm. Code 3708 (Floodway Construction in Northeastern Illinois) and submitted to the Division for review and concurrence before a permit is issued.

(vi) *On-Stream Structures Built for the Purpose of Backing Up Water.*

Any increase in upstream flood stages greater than 0.0 foot when compared to the existing conditions, for all flood events up to and including the 100-year frequency event shall be contained within the channel banks (or within existing vertical extensions of the channel banks) such as within the design protection grade of existing levees or flood walls or within record flood easements. A permit or letter indicating a permit is not required must be obtained from DNR, 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 8-502.1 shall meet the permitting requirements of 17 IL Adm. Code 3702 (Construction and Maintenance of Dams). If the proposed activity involves a modification of the channel or floodway to accommodate an impoundment, it shall be demonstrated that:

- (a) The impoundment is determined to be in the public interest by providing flood control, public recreation, or regional storm water detention;
 - (b) The impoundment will not prevent the migration of indigenous fish species, which require access to upstream areas as part of their life cycle, such as for spawning;
 - (c) The impoundment will not cause or contribute to degraded water quality or habitat conditions. Impoundment design should include gradual bank slopes, appropriate bank stabilization measures, and a pre-sedimentation basin.
 - (d) A non-point source control plan has been implemented in the upstream watershed to control the effects of sediment runoff as well as minimize the input of nutrients, oil and grease, metals and other pollutants. If there is more than one municipality in the upstream watershed, the municipality in which the impoundment is constructed should coordinate with upstream municipalities to ensure comprehensive watershed control;
 - (e) The project otherwise complies with the requirements of Section 8-507.
- (vii) *Flood Proofing 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 10 feet from the outside of the building. Compensation of lost storage and conveyance will not be required for floodproofing activities.
- (viii) *Excavation in the 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 DNR through engineering calculations or model tests that more abrupt transitions may be used with the same efficiency:

- (a) When water is flowing from a narrow section to a wider section, the water should be assumed to expand no faster than at a rate of one foot horizontal for every four feet of the flooded stream's length;
 - (b) When water is flowing from a wide section to a narrow section, the water should be assumed to contract no faster than at a rate of one foot horizontal for every one feet of the flooded stream's length; and
 - (c) When expanding or contracting flows in a vertical direction, a minimum of one foot vertical transition for every ten feet of stream length shall be used.
 - (d) Erosion/scour protection shall be provided inland upstream and downstream of the transition sections.
- (ix) *Channel Modification.* If the proposed activity involves a channel modification, it shall be demonstrated that:
- (a) There is no practicable alternative to the activity which would accomplish its purpose with less impact to the natural conditions of the body of water affected. Possible alternatives include levees, bank stabilization, flood proofing of existing structures, removal of structures from the floodplain, clearing the channel, high flow channel, or the establishment of a stream side buffer strip or green belt. Channel modification is acceptable if the purposed 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 modification and not 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 minimized 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.

- (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 stabilizing 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 3:1 horizontal to vertical, wherever practicable. Native vegetation and gradual side slopes are the preferred methods for bank stabilization. Where high velocities or sharp bends necessitate the use of alternative stabilization measure, soil bioengineering techniques, natural rock or rip-rap are preferred approaches. Artificial materials such as concrete, gabions, or construction rubble should be avoided unless there are no practicable alternatives.
- (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 the establishment of the vegetative cover.
- (7) If the existing channel contains bottom diversity such as deep pools, riffles, or 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 the stream 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 increase 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 the increase is justified as a 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
- (12) The project otherwise complies with the requirements of Section 8-507.

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

- (xi) *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 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 15 days after final grade is reached on any portion of the site, and with 15 days to denuded areas which may not be at final grade but will remain undisturbed for longer than 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 traps and basins.
 - (d) A vegetated buffer strip of at least 25 feet in width shall be preserved and/or reestablished, where possible, along existing channels (See, Section 8-507e (xvi)). 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 re-stabilized immediately.
 - (e) Soil erosion and sedimentation control measures shall be consistent with “*Procedures and Standards for Urban Soil Erosion and Sedimentation Control in Illinois*” (1988) also known as the “Green Book” and “*The Illinois Urban Manual*” (NRCS, IEPA, 1995).

- (xii) *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 DNR 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.

(xiii)

General Criteria for Analysis of Flood Elevations

- (a) The flood profiles, flows and floodway data in the regulatory floodway study, referenced in Section 8-505, must be used for analysis of the base conditions. If the study data appears to be in error or conditions have changed, DNR 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 DNR, local governments, or a private owner that a downstream restrictive bridge or culvert is scheduled to be removed, reconstructed, modified, or a regional flood control project is scheduled to be built, removed, constructed or modified within the next five years, the proposed construction shall be analyzed and shown to meet the requirements of this section for both the existing conditions and the expected flood profile conditions when the bridge, culvert or flood control project is built.
- (xiv) *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 DNR and to FEMA all the information, calculations and documents necessary to be issued a conditional regulatory floodway map revision and receive from DNR a conditional approval of the regulatory floodway change before a permit is issued. However, the final regulatory floodway map will not be changed by FEMA until as-built plans or record drawings are submitted and accepted by FEMA and DNR. In the case of non-government projects, the municipality in incorporated areas and the county in unincorporated areas shall concur with the proposed conditional regulatory floodway map revision before DNR 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 DNR.
- (xv) *Professional Engineer's Supervision.* All engineering analyses shall be performed by or under the supervision of a registered professional engineer.
- (xvi) *Construction Protection.* For all activities in the floodway involving construction within 25 feet of the channel, the following criteria shall be met:
- (a) A natural vegetation buffer strip shall be preserved within at least 25 feet of the ordinary high water mark of the channel.

- (b) Where it is impossible to protect this buffer strip during construction of an appropriate use, a vegetated buffer strip shall be established upon completion of construction.
 - (xvii) *Commencement of Construction.* 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 may be 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 DNR and FEMA of the “as built” plans.
- f. *Reserved*
- g. *State Review.* For those projects listed below located in a regulatory floodway, the following criteria shall be submitted to DNR for their review and concurrence prior to the issuance of a permit:
- (i) DNR will review an engineer’s analysis of the flood profile due to a proposed bridge pursuant to Section 8-507 e(iv).
 - (ii) DNR 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 Section 8-507 e(v).
 - (iii) The DNR will review alternative transition sections and hydraulically equivalent storage pursuant to Section 8-507 e(i, ii and viii).
 - (iv) The DNR will review and approve prior to the start of construction any Department projects, dams (as defined in Section 8-502(1) and all other state, federal or local units of government projects, including projects of the municipality or county.
- h. *Other Permits.* In addition to the other requirements of this Ordinance, 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 DNR, issued pursuant to 615 ILCS 5/5 et seq. No permit from DNR shall be required if the Division has delegated this responsibility to the City.
- i. *Dam Safety Permits.* Any work involving the construction, modification or removal of a dam as defined in 17 IL Adm. Code 3702 (Construction and Maintenance of Dams) shall obtain a DNR Dam Safety permit prior to the start of construction of a dam. If the City Manager finds a dam that does not have a DNR permit and if the City Manager finds a dam is unsafe, the City Manager shall immediately notify the owner of the dam, DNR, Dam Safety Section of DNR in Bartlett and the Illinois Emergency Management Agency (IEMA).

j. *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 Ordinance, including the mitigation requirements.

(i) Underground and overhead utilities that:

- (a) Do not result in any increase in existing ground elevations, or
- (b) Do not require the placement of above ground 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 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.

(ii) 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.

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

(iv) Construction of shoreline and streambank protection that:

- (a) Does not exceed 1000 feet in length.
- (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) *Reserved*

(v) Temporary stream crossings in which:

(a) The approach roads will be 0.5' (1/2 foot) 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 2' below the top of the lowest bank. Any fill in the channel shall be non-erosive material, such as rip-rap 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.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-508 Occupation and Use of SFHA Areas Where Floodways Are Not Identified.

In SFHA or flood plains, where no floodways have been identified and no base floor 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.

a. *Development Permit.* No person, firm, corporation or governmental body, not exempted by Illinois law, shall commence any development in a SFHA or flood plain without first obtaining a development permit from the City Manager. Application for a development permit shall be made on a form provided by the City Manager. 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 elevation of the lowest floor (including basement) of all proposed buildings subject to the requirements of Section 8-509 of this Ordinance. The application for a development permit shall also include the following information:

(i) A detailed description of the proposed activity, its purpose, and intended use;

- (ii) 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;
 - (iii) Anticipated dates of initiation and completion of activity;
 - (iv) 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 seal level (1929 adjustment) datum or N.G.V.D., 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), flood plain limit, location and orientation of cross-sections, north arrow, and a graphical 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 graphical or numerical scales (horizontal and vertical); and
 - (d) *Reserved*
 - (v) Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the criteria of Section 8-508d.
 - (vi) Any and all other local, state and federal permits or approvals that may be required for this type of development.
- b. *Application Review.* Based on the best available existing data according to the Illinois State Water Survey's Flood Plain Information Repository, the City Manager 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 Section 8-505d. 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 Ordinance. The Building Official 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.

- c. *Other Permits.* The applicant will be responsible for submitting 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 City Manager shall not issue the development permit unless all required local, state and federal permits have been obtained.
- d. *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 channel.
- e. *Riverine SFHAs.* Within all riverine SFHA's where the floodway has not been determined, the following standards shall apply:
 - (i) 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 Section 8-507e(i-xii) for the entire flood plain as calculated under the provisions of Section 8-505d. of this Ordinance. As an alternative, the developer should have an engineering study performed to determine a floodway and submit that engineering study to DNR 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 8-507 for the regulatory floodway. The floodway shall be defined according to the definition in Section 8-502oo. of this Ordinance.
 - (ii) A development permit shall not be issued unless the applicant first obtains a permit from DNR or written documentation that a permit is not required from DNR.
 - (iii) No permit from DNR shall be required if the Division has delegated permit responsibility to the City per 17 IL Adm. Code 3708 for regulatory floodways, per DNR Statewide Permit entitled "*Construction in Flood Plains with No Designated Floodways in Northeastern Illinois.*"
 - (iv) *Dam Safety Permits.* Any work involving the construction, modification or removal of a dam or an on-stream structure to impound water as defined in Section 8-502 1. shall obtain an DNR Dam Safety permit or letter indicating a permit is not required prior to the start of construction of a dam. If the City Manager finds a dam that does not have a DNR permit, the City Manager shall immediately notify the Dam Safety Section of DNR. If the City Manager finds a dam which is believed to be in unsafe condition, the City Manager shall immediately notify the owner of the dam and the Illinois Emergency Management Agency (IEMA), and the DNR, Dam Safety Section in Bartlett.

- (v) 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 Ordinance:
 - (a) Underground and overhead utilities that:
 - (i) Do not result in any increase in existing ground elevations, or
 - (ii) Do not require the placement of above ground structures in the floodway, or
 - (iii) In the case of underground stream crossings, the top of the pipe or encasement is buried a minimum of 3' below the existing streambed, and
 - (iv) 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.
 - (b) Storm and sanitary sewer outfalls that:
 - (i) Do not extend riverward or lakeward of the existing adjacent natural bank slope, and
 - (ii) Do not result in an increase in ground elevation, and
 - (iii) Are designed so as not to cause stream bank erosion at the outfall location.
 - (c) Construction of shoreline and streambed protection that:
 - (i) Does not exceed 1000 feet in length or 2 cubic yards per lineal foot of streambed.
 - (ii) Materials are not placed higher than the existing top of bank.
 - (iii) Materials are placed so as not to reduce the cross-sectional area of the stream channel by more than 10%.
 - (iv) *Reserved*

- (d) Temporary stream crossings in which:
 - (i) The approach roads will be 0.5' (1/2 foot) or less above natural grade.
 - (ii) 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.
 - (iii) The top of the roadway fill in the channel will be at least 2' below the top of the lowest bank. Any fill in the channel shall be non-erosive material, such as rip-rap or gravel.
 - (iv) All disturbed stream banks will be seeded or otherwise stabilized as soon as possible upon installation and again upon removal of construction.
 - (v) The access road and temporary crossings will be removed within one year after authorization.

- (e) The construction of light poles, sign posts and similar structures;
 - (f) The construction of sidewalks, driveways, athletic fields (excluding fences), patios and similar surfaces which are built at grade;
 - (g) The construction of properly anchored, unwallled, open structures such as playground equipment, pavilions, and carports built at or below existing grade that would not obstruct the flow of flood waters;
 - (h) The placement of properly anchored buildings not exceeding seventy (70) square feet in size, nor ten (10) feet in any one dimension (e.g., animal shelters and tool sheds);
 - (i) The construction of additions to existing buildings which do not increase the first floor area by more than twenty (20) percent, 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;
 - (j) Minor maintenance dredging of a stream channel where:

- (i) The affected length of stream is less than 1000 feet.
 - (ii) The work is confined to reestablishing flows in natural stream channels, or
 - (iii) The cross-sectional area of the dredged channel conforms to that of the natural channel upstream and downstream of the site.
 - (iv) The flood carrying capacity within any altered or relocated watercourse shall be maintained.
- (f) *Compensatory Storage.* Whenever any portion of a flood plain 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 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 flood plain storage lost below the existing 10-year flood elevation shall be placed below the proposed 10-year flood elevation. All flood plain 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.
- (g) *No External Effects.* Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within unnumbered A zones and Zone AE on the currently effective FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one-tenth foot at any point within the community. In order to demonstrate compliance with this requirement, an applicant may presume future compliance with the laws, regulations and ordinances pertaining to flood management, including the *Joliet Special Flood Hazard Areas Development Ordinance*.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-509 Permitting Requirements Applicable to All Flood Plain Areas.

In addition to the requirements found in Section 8-506, 8-507 and 8-508 for development in flood fringes, regulatory floodways, and SFHA or flood plains 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.

- a. Public Health Standards

- b. No developments in the SFHA shall include locating or storage chemicals, explosives, buoyant materials, animal wastes, fertilizers, flammable liquids, pollutants, or other hazardous or toxic materials below the FPE.
- c. New and replacement water supply systems, wells, sanitary sewer lines and on-site waste disposal systems may be permitted providing all manholes or other above ground openings located below the FPE are watertight.
- d. *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 30 days prior to the issuance of a permit for the alternation or relocation of the watercourse.
- e. *Protecting Buildings.* All buildings located within a 100-year flood plain 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 8-507. This building protection criteria applies to the following situations:
 - (i) Construction or placement of a new building.
 - (ii) Substantial improvement to an existing building as defined in Section 8-502ww, including an increase to the first floor area by more than twenty percent. This alteration shall be figured cumulatively beginning with any alteration which has taken place subsequent to April 1, 1990.
 - (iii) Substantial damage to an existing building as defined in Section 8-502ww. This alteration shall be figured cumulatively beginning with any alteration which has taken place subsequent to April 1, 1990.
 - (iv) Installing a manufactured home on a new site or a manufactured home on an existing site. This building protection requirement does not apply to returning a mobile home to the same site it lawfully occupied before it was removed to avoid flood damage; and
 - (v) Installing a travel trailer on a site for more than 180 days.

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

- f. A residential or non-residential building, when allowed, may be constructed on permanent land fill in accordance with the following:
 - (i) The lowest floor, (including basement) shall be at or above the flood protection elevation.

- (ii) The fill shall be placed in layers no greater than one (1) foot deep before compaction and should extend at least ten (10) feet 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 (10) foot 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 affect the flow or surface drainage from or onto neighboring properties.

g. A residential or non-residential building may be elevated in accordance with the following:

- (i) The building or improvements shall be elevated on crawl space, stilts, piles, walls, or other foundation that is permanently open to flood waters and not subject to damage by hydrostatic pressures of the base flood or 100-year frequency flood. The permanent openings shall be no more than one foot above grade, and consists of a minimum of two 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.
- (ii) The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamics forces such as current, waves, ice and floating debris.
- (iii) All areas below the flood protection elevation shall be constructed of materials resistant to flood damage. 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.
- (iv) No area below the flood protection elevation shall be used for storage of items or materials.
- (v) Manufactured homes, (including, but not limited to, travel trailers to be installed on a site for more than 180 days) and all manufactured homes that are placed or substantially improved within Zones A1-30, AH, and AE on the City's FIRM, situated on sites located:
 - (a) Outside of a manufactured home park or subdivision,
 - (b) In a new manufactured home park or subdivision,
 - (c) In an expansion to an existing manufactured home park or subdivision, or
 - (d) In an existing manufactured home park or subdivision on which a

manufactured home has incurred "substantial damage" as the result of a flood,

shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist floatation collapse and lateral movement. in accordance with the regulations promulgated under the *Illinois Mobile Home Tie-Down Act* and regulations set forth in 77 IL Adm. Code 870.

(vi) All other manufactured homes placed or substantially improved on sites in an existing manufactured home park or subdivision within Zones A-1-30, AH, and AE on currently effective FIRM that are not subject to the provisions of paragraph (g)(v) of this section shall be elevated so that either:

(a) The lowest floor of the manufactured home is at or above the base flood elevation, or

(b) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement.

h. Only a non-residential building may be structurally 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 hydrodynamics 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 flood proofing 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:

(i) The building is not used for human habitation.

(ii) 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 flood waters and shall also meet the Appropriate Use criteria of Section 700.0. In addition, all other requirements of Section 700, 800 and 900 must be met.

(iii) The structure shall be anchored to prevent flotation.

- (iv) Service facilities such as electrical and heating equipment shall be elevated or floodproofed to the flood protection elevation.
 - (v) The building shall be valued at less than \$5,000.00 and be less than 500 square feet in floor size.
 - (vi) The building shall be used only for the storage of vehicles or tools and may not contain other rooms, workshops, greenhouses or similar uses.
- j. All new construction and substantial improvements that have fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria: A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
- k. Non-conforming structures located in a regulatory floodway may remain in use, but may not be enlarged, replaced or structurally altered. A non-conforming structure damaged by flood, fire, wind or other natural or man-made 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 Ordinance.
- l. Within any AO zone on the currently effective FIRM, all new construction and substantial improvements of residential structures shall have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as two feet, or such higher amount specified on the currently effective FIRM.
- m. Within any AO zone on the currently effective FIRM, all new construction and substantial improvements of nonresidential structures:
- (i) shall have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as two feet, or such higher amount specified on the currently effective FIRM, or
 - (ii) together with attendant utility and sanitary facilities be completely floodproofed to that level to meet the floodproofing standard specified in 44 CFR 60.3(c)(3)(ii);
- n. Within any A99 zones on the currently effective FIRM, the standards of 44 CFR 60(a)(1) through (a)(4)(i) and 44 CFR 60(b)(5) through (b)(9) shall apply and be required.
- o. Within Zones AH and AO, adequate drainage paths around structures on slopes, to guide floodwaters around and away from proposed structures, shall be provided.
- p. Recreational vehicles placed on sites within Zones A1-30, AH, and AE on the currently

effective FIRM must either:

- (i) Be on the site for fewer than 180 consecutive days;
- (ii) Be fully licensed and ready for highway use, or
- (iii) Meet the permit requirements of 44 CFR 60(b)(1) and the elevation and anchoring requirements for "manufactured homes" in 44 CFR 60(c)(6).

A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-510 Other Development Requirements.

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

- a. New subdivisions, manufactured home parks, annexation agreements, and Planned Unit Developments (PUDs) within the SFHA shall be reviewed to assure that the proposed developments are consistent with Sections 8-506, 8-507, 8-508 and 8-509 of this Ordinance 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* (765 ILCS 205/1 et seq.).
- 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 Section 8-505d. and the floodway delineation per the definition in Section 8-502oo. and submitting it to the Illinois State Water Survey and DNR for review and approval as best available regulatory data.
- 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 flood plains shall be included within parks or other public grounds.
- d. The Mayor and 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 Ordinance.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-511 Variances.

No variances shall be granted to any development located in a regulatory floodway as defined in Section 8-502m. However, when a development proposal is located outside of a regulatory floodway, and whenever the standards of this Ordinance place undue hardship on a specific development proposal, the applicant may apply to the Mayor and City Council for a variance. The City Manager shall review the applicant's request for a variance and shall submit its recommendation to the Mayor and City Council.

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

- (i) The development activity cannot be located outside the SFHA;
- (ii) An exceptional hardship would result if the variance were not granted;
- (iii) The relief requested is the minimum necessary;
- (iv) There will be no additional threat to public health and safety;
- (v) There will be no additional public expense for flood protection, rescue or relief operations, policing or repairs to roads, utilities, or other public facilities;
- (vi) The provisions of Section 8-506d. and 8-508d. of this Ordinance shall still be met.
- (vii) The activity is not in a regulatory floodway;
- (viii) The applicant's circumstances are unique and do not represent a general problem, and
- (ix) The granting of the variance will not alter the essential character of the area involved including existing stream uses.

b. The City Manager shall notify an applicant in writing that a variance from the requirements of Section 8-509 that would lessen the degree of protection to a building will:

- (i) Result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage;

- (ii) Increase the risks to life and property; and
- (iii) Require that the applicant proceed with knowledge of these risks and that he will acknowledge in writing that he assumes the risk and liability.
- (iv) 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 Section 8-511a. and 8-511b.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-512. Disclaimer of Liability.

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

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

Section 8-513 Enforcement and Penalties.

Failure to comply with the requirements of a permit or conditions of a variance resolution shall be deemed to be a violation of this Ordinance. Upon due investigation, the City Manager may determine that a violation of the minimum standards of this Ordinance exist. The City Manager shall notify the owner in writing of such violation.

a. If such owner fails after ten days notice to correct the violation:

- (i) The City may make application to the Circuit Court for an injunction requiring conformance with this Ordinance or make such other order as the Court deems necessary to secure compliance with the Ordinance.
- (ii) Any person who violates this Ordinance shall, upon conviction thereof, be fined not less than fifty dollars (\$50.00) nor more than seven hundred fifty dollars (\$750.00) for each day the offense continues.
- (iii) A separate offense shall be deemed committed upon each day during or on which a violation occurs or continues.
- (iv) The City may record a notice of violation on the title to the property.

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

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.

Ordinance No. 10884, Section 2, adopted August 15, 1995, as amended and restated by Ordinance No. 14207, Section 1, adopted March 4, 2003.

ORDINANCE NO. 16418

AN ORDINANCE REGULATING DEVELOPMENT IN SPECIAL FLOOD HAZARD AREAS

WHEREAS, the City of Joliet is charged with the responsibility of protecting the public health, safety and general welfare of the community; and

WHEREAS, the regulation of development within flood plains and other identified flood hazard areas so as to minimize flooding and its attendant hazards contribute to the health, safety and general welfare of the City of Joliet and other areas; and

WHEREAS, the Mayor and City Council have enacted an ordinance establishing a comprehensive regulatory framework for the management and protection of special flood hazard areas, codified as Section 8-500 et seq. of the Code of Ordinances; and

WHEREAS, the Federal Emergency Management Agency has published new floodplain maps and has promulgated additional floodplain regulations which the City must also adopt in order to continue participation in the National Flood Insurance Program.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF JOLIET, ILLINOIS AS FOLLOWS:

SECTION 1: Section 8-502 of the Code of Ordinances is hereby amended with the addition of the following defined terms:

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

“Historic Structure” shall mean any structure that is (i) listed individually in the National Register of Historic Places or preliminary determined by the US Secretary of the Interior as meeting the requirements for individual listing on the National Register; (ii) certified or preliminary determined by the US Secretary of the Interior as contributing to the historic district or a district preliminary determined by the Secretary to qualify as a registered historic district; (iii) individually listed on the State inventory of historic places by the Illinois Historic Preservation Agency; or (iv) Individually listed on a local inventory of historic places that has been certified by the Illinois Historic Preservation Agency.

“Lowest Floor” shall mean the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure usable solely for parking of vehicles, building access or storage, in an area other than a basement area is not considered a buildings lowest floor; provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

“Repetitive Loss” Flood-related damages sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damaged occurred.

“Start of Construction” Includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work.

“Substantial Damage” Damage of any origin sustained by a structure whereby the cumulative percentage of damage equals or exceeds 50 percent of the market value of the structure before the damage occurred **regardless** of actual repair work performed. Volunteer labor and materials must be included in this determination. The term includes Repetitive Loss Buildings. See “Repetitive Loss”.

SECTION 2: The definitions of the following terms set forth in Section 8-502 of the Code of Ordinances is hereby amended to read as follows:

“Flood Plain” shall mean 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. Flood plains may also include detached special flood hazard areas, ponding areas, etc. The flood plain is also known as the special flood hazard area (SFHA). The flood plains are those lands within the jurisdiction of the city that are subject to inundation by the base flood or 100-year frequency flood. The SFHA's of the city are generally identified as such on the flood insurance rate map of Will County and Kendall County prepared by the Federal Emergency Management Agency and dated March 17, 2003 and February 4, 2009 respectively. The SFHA's of those parts of unincorporated territory 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 Will County and Kendall County by FEMA and dated March 17, 2003 and February 4, 2009 respectively.

“Regulatory Floodway” shall mean the channel, including onstream lakes, and that portion of the flood plain adjacent to a stream or watercourse as designated by DNR, which is needed to store and convey the existing and anticipated future 100-year frequency flood discharge with no more than a 0.1 foot increase in stage due to the loss of flood conveyance or storage, and no more than a ten (10) percent increase in velocities. The regulatory floodways are designated on the Will County and Kendall County prepared by FEMA dated March 17, 2003 and February 4, 2009 respectively. The regulatory floodways for those parts of unincorporated territory that are within the

extraterritorial jurisdiction of the city that may be annexed into the city which are designated for on the Will County and Kendall County prepared by FEMA dated March 17, 2003 and February 4, 2009 respectively. The rivers included, but not limited to, are: DuPage River, Rock Run Creek, Rock Run Slough, Rock Run Tributaries 1, 2 and 3, Sunnyland Drain, Sunnyland Drain Tributary, Caton Creek, Lily Cache Creek, DesPlaines River, Hickory Creek, Spring Creek, Illinois & Michigan Canal, and Thorne Creek. 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, DNR should be contacted for the interpretation.

SECTION 3: Section 8-505 of the Code of Ordinances is hereby amended to read as follows:

Section 8-505: Base Flood Elevation.

This Ordinance's protection standard is based on the Flood Insurance Study for Will County and Kendall County. 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 Surveys Flood Plain Information Repository. When a party disagrees with the best available data, that party may finance the detailed engineering study needed to replace existing data with better data and submit it to DNR and FEMA.

a. The base flood or 100-year frequency flood elevation for the SFHAs of all rivers and creeks shall be as delineated on the 100-year flood profiles in the Flood Insurance Study of Will County and Kendall County prepared by FEMA dated March 17, 2003 and February 4, 2009 respectively, and such other amendments or revisions to such study and maps as may be prepared from time to time. The rivers included but not limited to are: DuPage River, Rock Run Creek, Rock Run Slough, Rock Run Tributaries 1, 2 and 3, Sunnyland Drain, Sunnyland Drain Tributary, Caton Creek, Lily Cache Creek, DesPlaines River, Hickory Creek, Spring Creek, Illinois and Michigan Canal, and Thorne Creek.

b. The base flood or 100-year frequency flood elevation for the SFHAs of those parts of unincorporated Will County and Kendall County that are within the extraterritorial jurisdiction of the city or that may be annexed into the city shall be as delineated on the 100-year flood profiles in the flood insurance study of Will County and Kendall county prepared by FEMA dated March 17, 2003 and February 4, 2009 respectively, and such amendments or revisions to such study and maps as may be prepared from time to time.

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.

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 Will County and Kendall County 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 water shed as determined from adopted local and regional land use plans. Along any watercourses draining more than one (1) square mile, the above analysis shall be submitted to DNR for approval, once approved it must be submitted to the state water survey floodplain information repository for filing. For a non-riverine SFHA, the base flood elevation shall be the historic flood of record plus three (3) feet, unless calculated by a detailed engineering study and approved by the state water survey.

SECTION 4: Section 8-509 of the Code of Ordinances is hereby amended with the addition of sub-paragraph (q) as follows:

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

SECTION 5: Section 8-514 of the Code of Ordinances is hereby amended to read as follows:

Sec. 8-514. Ratifications.

For the purposes of this Ordinance, the City of Joliet hereby adopts and ratifies the Flood Insurance Study (FIS) and the Flood Insurance Rate Map (FIRM) promulgated and published by FEMA effective as of March 17, 2003 for Will County and February 4, 2009 for Kendall County. The City of Joliet also adopts and ratifies all other flood map panels now in effect for land located within the corporate limits of the City of Joliet and all unincorporated land lying within its planning jurisdiction.

SECTION 6: This Ordinance shall be construed so as to require continued compliance with the standards of the *National Flood Insurance Program*, and the administrative regulations promulgated thereunder, including, but not limited to, the requirements of 44 CFR 60.3, as amended. In the event FEMA revises or republishes map panels or other portions of the FIS and FIRM that affects land lying within the City of

Joliet or unincorporated land within its planning jurisdiction, such revisions shall be deemed adopted and incorporated herein by reference upon the publication thereof by the City Clerk.

SECTION 7: This Ordinance is not intended to repeal, abrogate or impair any existing easements, covenants, or deed restrictions. Where this Ordinance and other ordinances, easements, covenants, or deed restrictions conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

SECTION 8: For the convenience of public inspection, a restatement of the City of Joliet floodplain regulations, as amended, being Ordinance Nos. 10884, 10912 and 14207, as amended by this Ordinance, is attached hereto as Exhibit "A" and is hereby incorporated herein by reference. In addition, the City Clerk is authorized to publish and bind this Ordinance with the Zoning Ordinance of the City of Joliet and/or the Subdivision Regulations of the City of Joliet. Nevertheless, this Ordinance shall not be considered to be a part of said ordinances for other purposes. The City Clerk is not required to codify this Ordinance in the Code of Ordinances if this ordinance is published and bound with the Zoning Ordinance or Subdivision Regulations. The City Clerk shall make an appropriate reference in the Code of Ordinances indicating the location of full publication and codification.

SECTION 9: This Ordinance shall be deemed severable, and the invalidity of any section, clause, paragraph, sentence, or provision of the Ordinance shall not affect the validity of any other portion of the Ordinance.

SECTION 10: This Ordinance is adopted pursuant to the home rule powers of the City of Joliet.

SECTION 11: This Ordinance shall take effect immediately upon its passage.

PASSED this 20th day of January, 2009.

MAYOR

CITY CLERK

VOTING YES: MAYOR SCHULTZ and COUNCILWOMAN BARBER, COUNCILMEN BROPHY, GIARRANTE, COUNCILWOMAN QUILLMAN, COUNCILMEN SHETINA, TURK and UREMOVIC.

VOTING NO: NONE.

NOT VOTING: COUNCILMAN DORRIS (absent).
