

**FLOODPLAIN ORDINANCE OF THE VILLAGE OF ORLAND PARK, COOK
AND WILL COUNTIES, ILLINOIS**

Be it ordained by the Village President and Board of Trustees of the Village of Orland Park, Illinois as follows:

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Section 200.0 Purpose

This Ordinance is enacted pursuant to the police powers granted to this Village of Orland Park by 65 ILCS 5/1-2-1, 5/11-12-12, 5/11-30-2, 5/11-30-8, and 5/11-31-2. The purpose of this Ordinance is to maintain this Village of Orland Park 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:

- 200.1 To meet the requirements of 615 ILCS 5/18(g) Rivers, Lakes and Streams Act;
- 200.2 To assure that new development does not increase the flood or drainage hazards to others, or creating unstable conditions susceptible to erosion;
- 200.3 To protect new buildings and major improvements to buildings from flood damage;
- 200.4 To protect human life and health from the hazards of flooding;
- 200.5 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; and
- 200.6 To make federally subsidized Flood insurance available for property in the Village of Orland Park by fulfilling the requirements of the National Flood Insurance Program;
- 200.7 To comply with the rules and regulations of the National Flood Insurance Program codified as 44 CFR 59-79, as amended;
- 200.8 To protect, conserve, and promote the orderly development of land and water resources; and
- 200.9 To preserve the natural characteristics and functions of watercourses and Floodplains in order to moderate flood and stormwater impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits and enhance community and economic development.

Section 300.0 Definitions

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

- 300.1 **Accessory Structure** A non-habitable **Building** which is on the same parcel of property as the principal **Building** to be insured and the use of which is incidental to the use of the principal **Building**.
- 300.2 **Act** An act in relation to the regulation of the rivers, lakes and streams of the State of Illinois, 615 ILCS 5/5 et seq.
- 300.3 **Applicant** Any person, firm, corporation or agency that applies for a **Floodplain Development** permit.

- 300.4 **Appropriate Uses** Only uses of the **Designated Floodway** that are permissible and will be considered for permit issuance. The only uses that will be allowed are as specified in Section 702.0.
- 300.5 **ASCE** - American Society of Civil Engineers
- 300.6 **Base Flood** The **Flood** having a one-percent chance of being equaled or exceeded in any given year. The **Base Flood** is often referred to as the 100-year flood.
- 300.7 **Base Flood Elevation (BFE)** The height in relation to the North American Vertical Datum (**NAVD**) of 1988 (or other datum, where specified) of the crest of the **Base Flood**. Application of the **BFE** at any location is as defined in Section 500.0 of this Ordinance.
- 300.8 **Basement** Any area of the building, including any sunken room or sunken portion of a room, having its floor below ground level (subgrade) on all sides.
- 300.9 **Building** A walled and roofed **Building**, including gas or liquid storage tank, that is principally above ground, including **Manufactured Homes** and prefabricated buildings. The term also includes **Recreational Vehicles** and travel trailers installed on a site for more than 180 days in any calendar year.
- 300.10 **Channel** Any river, stream, creek, brook, branch, natural or artificial depression, ponded area, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or man-made drainageway, which has a definite bed and banks or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.
- 300.11 **Channel Modification** Alteration of a **Channel** by changing the physical dimensions or materials of its bed or banks. Channel Modification includes Damming, rip-rapping (or other armoring), widening, deepening, straightening, relocating, lining and significant removal of native vegetation from the bottom or banks. Channel Modification does not include the clearing of dead or dying vegetation, debris, or trash from the **Channel**. Channelization is a severe form of Channel Modification involving a significant change in the **Channel** cross-section and typically involving relocation of the existing **Channel** (e.g. straightening).
- 300.12 **Compensatory Storage** An artificially excavated, hydraulically equivalent volume of storage within the **Floodplain** used to balance the loss of natural **Flood** storage capacity when artificial fill or **Structures** are placed within the **Floodplain**. The uncompensated loss of natural **Floodplain** storage can increase off-site floodwater elevations and flows.

- 300.13 **Conditional Approval of a Designated Floodway Map Change** Preconstruction approval by **IDNR/OWR** and **FEMA** of a proposed change to the **Floodway** map. This preconstruction approval, pursuant to 17 Ill. Adm. Code Part 3708, 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.
- 300.14 **Conditional Letter of Map Revision (CLOMR)** A letter providing **FEMA's** comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing **Floodway**, the effective **BFEs**, or the **SFHA**.
- 300.15 **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.
- 300.16 **Dam** All obstructions, wall embankments or barriers, together with their abutments and appurtenant works, if any, constructed for the purpose of storing or diverting water or creating a pool. **Dams** may also include weirs, restrictive culverts or impoundment **Structures**. Underground water storage tanks are not included.
- 300.17 **Delegated Community** A community delegated state permitting authority for construction in the **Floodway** under 17 Ill. Adm. Part 3708 by **IDNR/OWR**. Delegation issued to Village of Orland Park on August 28, 1990.
- 300.18 **Designated Floodway** The channel, including on-stream lakes, and that portion of the **Floodplain** adjacent to a stream or watercourse, generally depicted on the **FEMA FIRM** map, which is needed to store and convey the existing **Base 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 percent increase in velocities.
- 300.18.1 The **Floodways** are designated for on the countywide **FIRM** of Cook County and Will County prepared by **FEMA** are generally identified as such on panel number(s) listed in Appendix A. When two **Floodway** maps exist for a waterway, the more recent effective **Floodway** limit shall prevail.
- 300.18.2 The **Floodways** for those parts of unincorporated Cook County and Will County that are within the extraterritorial jurisdiction of the

Village of Orland Park that may be annexed into the Village of Orland Park are designated on the countywide **FIRM** of Cook County and Will County prepared by **FEMA** and are generally identified as such on panel number(s) listed in Appendix A.

300.18.3 To locate the **Designated Floodway** boundary on any site, the **Designated Floodway** boundary should be scaled off the **FIRM** map and located on a site plan, using reference marks common to both maps. Where interpretation is needed to determine the exact location of the **Designated Floodway** boundary, **IDNR/OWR** should be contacted for the interpretation.

300.19 **Development** Any man-made change to real estate, including:

300.19.1 Construction, reconstruction, repair, or placement of a **Building** or any addition to a **Building**;

300.19.2 **Substantial Improvement** of an existing **Building**;

300.19.3 Installing a **Manufactured Home** on a site, preparing a site for a **Manufactured Home**, or installing a travel trailer or **Recreational Vehicle** on a site for more than 180 calendar days. If a travel trailer or **Recreational Vehicle** is on site for more than 180 calendar days, it must be fully licensed and ready for highway use;

300.19.4 Installing utilities, construction of roads, bridges, or similar projects;

300.19.5 Demolition of a **Building**, re development of a site, clearing of land as an adjunct of construction;

300.19.6 Construction or erection of levees, walls, fences, **Dams**, culverts, or **Channel Modification**;

300.19.7 Filling, dredging, grading, excavating, paving, drilling, mining or other non-agricultural alterations of the ground surface;

300.19.8 Storage of materials including the placement of gas and liquid storage tanks, and any other activity that might change the direction, height, or velocity of **Flood** or surface waters;

300.19.9 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 such activities as re-surfacing of pavement when there is no increase in elevation, or gardening, plowing, and similar agricultural practices that do not involve filling, grading, or construction of levees.

300.20 **Elevation Certificates** A form published by **FEMA** that is used to certify the elevation to which a **Building** has been elevated.

300.21 **Existing Manufactured Home Park or Subdivision** A **Manufactured Home** park or subdivision for which the construction of facilities for servicing the lots on which the **Manufactured Homes** are to be affixed or **Buildings** to be constructed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the Village of Orland Park initial **Floodplain** management regulations.

300.22 **Expansion to an Existing Manufactured Home Park or Subdivision** The preparation of additional sites by the construction of facilities for servicing the lots on which the **Manufactured Homes** are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

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

300.24 **Flood** A general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters, or from the unusual and rapid accumulation or runoff of surface waters from any source. Flood also includes the collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash **Flood** or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters.

300.25 **Flood Frequency** A period of years, based on a statistical analysis, during which a **Flood** of a stated magnitude may be expected to be equaled or exceeded.

300.26 **Flood Fringe** That portion of the **Floodplain** outside of the **Designated Floodway**.

- 300.27 **Flood Insurance Rate Map (FIRM)** A map prepared by **FEMA** that depicts the **Floodplain** or **Special Flood Hazard Area** within a community. This map includes insurance rate zones and **Floodplains** and may or may not depict **Floodways** and show **BFE**.
- 300.28 **Flood Insurance Study** An examination, evaluation and determination of **Flood** hazards and if appropriate, corresponding water surface elevations.
- 300.29 **Floodplain (or Special Flood Hazard Area (SFHA))** For purpose of this Ordinance, these two terms are synonymous. Means any land area susceptible to being inundated by water from any source. **Floodplain** also includes those areas of known flooding as identified by the community.
- 300.29.1 The **Floodplains** are those lands within the jurisdiction of the Village of Orland Park that are subject to inundation by the **Base Flood**. The **Floodplains** of the Village of Orland Park are shown on the countywide **FIRM** for Cook County and Will County as prepared by the **FEMA** and are generally identified on panel number(s) listed in Appendix A.
- 300.29.2 The **Floodplains** of those parts of unincorporated Cook County and Will County that are within the extraterritorial jurisdiction of the Village of Orland Park or that may be annexed into the Village of Orland Park and that are subject to inundation by the **Base Flood**. The **Floodplains** are generally identified as such on panel numbers(s) listed in Appendix A.
- 300.31 **Floodproofing** Any combination of structural and non-structural additions, changes or adjustments to **Buildings** that reduce or eliminate **Flood** damage to real estate or improved real property, water and sanitary facilities, **Buildings** and their contents.
- 300.32 **Floodproofing Certificate** 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**.
- 300.33 **Flood Protection Elevation (FPE)** The elevation of the **Base Flood** plus two feet of **Freeboard** at any given location in the **Floodplain**.
- 300.34 **Floodway** See 300.17 **Designated Floodway**.
- 300.35 **Freeboard** An increment of elevation added to the **BFE** to provide a factor of safety for uncertainties in calculations, future watershed **Development**, unknown localized conditions, wave actions and unpredictable effects such as those caused by ice or debris jams.

300.36 **Historic Structure** Any **Building** that is:

300.36.1 Listed individually in the National Register of Historic Places or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

300.36.2 Certified or preliminarily determined by the Secretary of the Interior as contributing to the historic district or a district preliminarily determined by the Secretary of the Interior to qualify as a registered historic district;

300.36.3 Individually listed on the State inventory of historic places by the Illinois Historic Preservation Agency;

300.36.4 Individually listed on a local inventory of historic places that has been certified by the Illinois Historic Preservation Agency.

300.37 **IDNR/OWR** Illinois Department of Natural Resources, Office of Water Resources.

300.38 **Letter of Map Amendment (LOMA)** Official determination by **FEMA** that a specific **Building**, area of land or a parcel of land, where there has not been any alteration of the topography since the date of the first NFIP map showing the property within the **Floodplain**, was inadvertently included within the **Floodplain** and that the **Building**, area of land or a parcel of land is removed from the **Floodplain**.

300.39 **Letter of Map Revision (LOMR)** Letter that revises **BFEs**, **Floodplains** or **Floodways** as shown on an effective **FIRM**.

300.40 **Lowest Floor** 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 **Building** in violation of the applicable non-elevation design requirements of this Ordinance.

300.41 **Manufactured Home** A **Building**, transportable in one or more sections, which is built on a permanent chassis and is designated for use with or without a permanent foundation when attached to the required utilities. The term **Manufactured Home** does not include a **Recreational Vehicle**.

300.42 **Manufactured Home Park or Subdivision** A parcel (or contiguous parcels) of land divided into two or more **Manufactured Home** lots for rent or sale.

- 300.43 **New Construction** New Construction means **Buildings** for which the **Start of Construction** commenced on or after the effective date of a **Floodplain** management regulation adopted by a community and includes any subsequent improvements to such **Buildings**.
- 300.44 **New Manufactured Home Park or Subdivision** **Manufactured Home** park or subdivision for which the construction of facilities for servicing the lots on which the **Manufactured Homes** are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the Village of Orland Park initial **Floodplain** management regulations.
- 300.45 **NAVD 88** North American Vertical Datum of 1988. **NAVD 88** supersedes the National Geodetic Vertical Datum of 1929 (NGVD).
- 300.46 **Public Body of Water** All open public streams and lakes capable of being navigated by watercraft, in whole or in part, for commercial uses and purposes, and all lakes, rivers, and streams which in their natural condition were capable of being improved and made navigable, or that are connected with or discharge their waters into navigable lakes or rivers within, or upon the borders of the State of Illinois, together with all bayous, sloughs, backwaters, and submerged lands that are open to the main **Channel** or body of water directly accessible thereto, as identified in 17 Ill. Adm. Code Part 3704.
- 300.47 **Recreational Vehicle or Travel Trailer** A vehicle which is:
- 300.47.1 Built on a single chassis;
 - 300.47.2 400 square feet or less when measured at the largest horizontal projection, to include expandable room sections regardless of height;
 - 300.47.3 Designed to be self-propelled or permanently towable by a light duty truck; and
 - 300.47.4 Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.
- 300.48 **Regional Permits** **Regional Permits** are offered for pre-approved projects which are considered minor projects that are permissible per **IDNR/OWR** Part 3708 rules for Northeastern Illinois **Designated Floodways**. A complete listing of the terms and conditions for specific project types can be obtained from the **IDNR/OWR** website.

- 300.49 **Registered Land Surveyor** A land surveyor registered in the State of Illinois, under The Illinois Land Surveyors Act. (225 ILCS 330/1, et seq.)
- 300.50 **Registered or Licensed Professional Engineer (P.E.)** An engineer registered in the State of Illinois, under The Illinois Professional Engineering Practice Act. (225 ILCS 325/1 et seq.)
- 300.51 **Repetitive Loss Flood**-related damages sustained by a **Building** 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 **Building** before the damaged occurred.
- 300.52 **Retention/Detention Facility** A retention facility stores stormwater runoff without a gravity release. A detention facility provides for storage of stormwater runoff and controlled release of this runoff during and after a **Flood** or storm.
- 300.53 **Riverine Floodplain** Any **Floodplain** or **SFHA** subject to flooding from a river, creek, intermittent stream, ditch, on-stream lake system or any other identified **Channel**. This term does not include areas subject to flooding from lakes, ponding areas, areas of sheet flow, or other areas not subject to overbank flooding.
- 300.54 **Special Flood Hazard Area (SFHA)** See 300.30 **Floodplain**.
- 300.55 **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 **Building** on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns or any work beyond the stage of excavation or the placement of a **Manufactured Home** on a foundation. For a **Substantial Improvement**, actual **Start of Construction** means the first alteration of any wall, ceiling, floor or other structural part of a **Building** whether or not that alteration affects the external dimensions of the **Building**.
- 300.56 **Statewide Permits** Statewide permits are offered for pre-approved projects that are considered minor projects which are permissible per the **IDNR/OWR** Part 3700 rules. A complete listing of the statewide permits and permit requirements can be obtained from the **IDNR/OWR** website.
- 300.57 **Structure** The results of a man-made change to the land constructed on or below the ground, including a **Building**, as defined in Section 300.9, any addition to a **Building**; installing utilities, construction of roads or similar projects; construction or erection of levees, walls, fences, bridges or culverts;

drilling, mining, filling, dredging, grading, excavating; and the storage of materials.

300.58 **Substantial Damage** Damage of any origin sustained by a **Building** whereby the cumulative percentage of damage during the life of the Building equals or exceeds 50 percent of the market value of the **Building** 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 300.51 **Repetitive Loss**).

300.59 **Substantial Improvement** Any reconstruction, rehabilitation, addition, or improvement of a **Building** taking place during the life of the Building in which the cumulative percentage of improvements equals or exceeds 50 percent of the market value of the **Building** before the **Start of Construction** of the improvement or repair is started, **or increases the floor area by more than twenty percent (20%)**.

300.59.1 **Substantial Improvement** is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the **Building** commences, whether or not that alteration affects the external dimensions of the **Building**. This term includes **Buildings** which have incurred **Repetitive Loss** or **Substantial Damage**, regardless of the actual work done.

300.59.2 The term does not, however, include either:

300.59.2.1 any project for improvement of a **Building** to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, or

300.59.2.2 any alteration of a **Historic Structure** listed on the National Register of Historic Places or the Illinois Register of Historic Places, provided that the alteration will not preclude the **Building's** continued designation as a **Historic Structure**.

300.60 **Transition Section** Reaches of the stream or **Floodway** where water flows from a narrow cross-section to a wide cross-section or vice versa.

Section 400.0 Duties of the Village Manager

401.0 Determining the Floodplain Designation.

401.1 Check all new **Development** sites to determine whether they are in a **Floodplain** using criteria listed in Section 500.0, **Base Flood** Elevation.

401.2 If the site is in a **Floodplain**, determine whether the site is in a **Floodway, Flood Fringe** or in a **Floodplain** for which a detailed study has not been conducted and which drains more than one (1) square mile.

401.2.1 If the site is within a **Flood Fringe**, the Village Manager shall require that the minimum requirements of Section 600.0 be met.

401.2.2 If the site is within a **Floodway**, the Village Manager shall require that the minimum requirements of Section 700.0 be met.

401.2.3 If the site is located within a **Floodplain** for which no detailed study has been completed and approved, the Village Manager shall require that the minimum requirements of Section 800.0 be met.

402.0 Professional Engineer Review.

402.1 If the **Development** site is within a **Floodway** or in a **Floodplain** for which a detailed study has not been conducted and which drains more than one square mile, the permit shall be referred to a **P.E.** under the employ or contract of the Village of Orland Park for review to ensure that the **Development** meets Sections 700.0 or 800.0.

402.2 In the case of an **Appropriate Use**, the **P.E.** shall state in writing that the **Development** meets the requirements of Section 700.0.

403.0 Dam Safety Requirements.

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

404.0 Other permit requirements.

Ensure any and all required federal, state and local permits are received prior to the issuance of a **Floodplain Development** permit, including, but not limited to, permits pertaining to the Clean Water Act, Public Water Supply, Endangered Species Act, Illinois Endangered and Species Protection Act.

405.0 Plan Review and Permit Issuance.

405.1 Ensure that all **Development** activities, including **New Construction** and **Substantial Improvements**, within the **Floodplains** of the jurisdiction of the Village of Orland Park meet the requirements of this Ordinance.

- 405.2 Issue a **Floodplain Development** permit in accordance with the provisions of this Ordinance and other regulations of this community when the **Development** meets the conditions of this Ordinance.
- 405.3 Ensure that all **Development** activities happen in a timely manner and any permit time extensions are issued per the requirements of Sections 601, 701 and 801 of this Ordinance.

406.0 Inspection Review.

- 406.1 Inspect all **Development** projects before, during and after construction to assure proper elevation of the **Building** and to ensure compliance with the provisions of this Ordinance.
- 406.2 Schedule on an annual basis an inspection of the **Floodplain** and document the results of the inspection.

407.0 Substantial Damage and Substantial Improvement Determinations.

Establish, procedures for administering and documenting determinations, as outlined below, of **Substantial Improvement** and **Substantial Damage** made pursuant to Section 900.0.

- 407.1 Determine the market value or require the **Applicant** to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the **Building** before the **Start of Construction** of the proposed work. In the case of repair, the market value of the **Building** shall be the market value before the damage occurred and before any repairs are made.
- 407.2 Compare the cost to perform the improvement, the cost to repair a damaged **Building** to its pre-damaged condition, or the combined costs of improvements and repairs, if applicable, to the market value of the **Building**.
- 407.3 Determine and document whether the proposed work constitutes **Substantial Improvement** or **Substantial Damage**.
- 407.4 Notify the **Applicant** if it is determined that the work constitutes **Substantial Improvement** or repair of **Substantial Damage** and that compliance with the **Flood** resistant construction requirements of the Village of Orland Park, Cook County and Will County and this Ordinance is required.

408.0 Elevation and Floodproofing Certificates.

Maintain permit files including:

- 408.1 An Elevation Certificate certifying the elevation of the **Lowest Floor** (including **Basement**) of a residential or non-residential **Building** subject to Section 900.0 of this Ordinance, and/or;

408.2 The elevation to which a non-residential **Building** has been floodproofed, using a Floodproofing Certificate, for all **Buildings** subject to Section 900.0 of this Ordinance.

409.0 Records for Public Inspection.

Maintain for public inspection and furnish upon request all permit records, including but not limited to **Base Flood** data, **Floodplain** and **Designated Floodway** maps, copies of federal or state permit documents, variance documentation, soil compaction records, **Conditional Letter of Map Revision, Letter of Map Revision, Letter of Map Amendment**, as-built elevation, **Floodproofing Certificates** and **Elevation Certificates** for all **Buildings** constructed subject to this Ordinance.

410.0 Floodway Permits.

For all **Development** projects in a **Floodway**, ensure that construction authorization has been granted by **IDNR/OWR** or a **Delegated Community**, or written documentation is provided stating that a permit is not required from **IDNR/OWR**, issued pursuant to 615 ILCS 5/5 et seq. **Floodway** permit requirements are specified in Sections 700.0 and 800.0 of this Ordinance.

411.0 Cooperation with Other Agencies.

- 411.1 Cooperate with state and federal **Floodplain** management agencies to improve **Base Flood** and **Floodway** data and to improve the administration of this Ordinance;
- 411.2 Submit data to **IDNR/OWR** and **FEMA** for proposed revisions of a regulatory map within 6 months whenever a modification of the **Floodplain** may change the **BFE** or result in a change to the **Floodplain** map;
- 411.3 Submit reports as required for the **NFIP**; and
- 411.4 Notify **FEMA** of any proposed amendments to this Ordinance.

412.0 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 **IDNR/OWR** and **FEMA** for any Ordinance changes.

413.0 Variances

If a variance is to be granted, the Village Manager shall review the requirements of Section 1100.00 to make sure they are met. In addition, the Village Manager shall complete all notifications requirements.

414.0 Enforcement

In order to assure that property owners obtain permits as required in the Ordinance, the Village Manager may take any and all actions as outlined in Section 1300.00

Section 500.0 Base Flood Elevation

This Ordinance's protection standard is based on the **FIS** for Cook and Will Counties.

- 500.1 If a **BFE** is not available for a particular site, then the protection standard shall be according to the best existing data available from federal, state or other sources.
- 500.2 When a party disagrees with the best available data, they shall submit a detailed engineering study needed to replace existing data with better data and submit it to **IDNR/OWR** and **FEMA** for review and consideration prior to any **Development** of the site.
- 501.0** The **BFE** for the **Floodplains** of Village of Orland Park shall be as delineated on the **Base Flood** profiles in the **FIS** of Cook County and Will County prepared by **FEMA** respectively dated November 1, 2019 and February 15, 2019, and such amendments to such study and maps as may be prepared from time to time.
- 502.0** The **BFE** for the **Floodplains** of those parts of unincorporated Cook County and Will County that are within the extraterritorial jurisdiction of the Village of Orland Park or that may be annexed into the Village of Orland Park shall be as delineated on the **Base Flood** profiles in the **FIS** of Cook County and Will County prepared by **FEMA** and respectively dated November 1, 2019 and February 15, 2019, and such amendments or revisions to such study and maps as may be prepared from time to time.
- 503.0** The **BFE** for each **Floodplain** delineated as an AH Zone or AO Zone shall be that elevation (or depth) delineated on the countywide **FIRM** of Cook County and Will County and listed in Appendix A, and such amendments or revisions to such study and maps as may be prepared from time to time.
- 504.0** The **BFE** for each of the remaining **Floodplains** delineated as an A Zone on the countywide **FIRM** of Cook County and Will County and listed in Appendix A, shall be according to the best existing data available from federal, state or other sources. Should no other data exist, an engineering study must be financed by the **Applicant** to determine **BFEs**.

- 504.1 When no **BFE** exists, the **BFE** for a riverine **Floodplain** shall be determined from an accepted hydraulic model, based on current industry standards.
- 504.2 The **Flood** flows used in the hydraulic models shall be obtained from an accepted hydrologic model, based on current industry standards, or by techniques presented in various publications prepared by the United States Geological Survey for estimating peak **Flood** discharges.

Section 600.0 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** by proper elevation, compliance with **Compensatory Storage** requirements, and other applicable provisions of this Ordinance. No use will be permitted that 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 900.0.

601.0 Development Permit

- 601.1 No person, firm, corporation, or governmental body shall commence any **Development** in the **Floodplain** without first obtaining a **Development** permit from the Village Manager.
- 601.2 Application for a **Development** permit shall be made on a form provided by the Village Manager.
- 601.2.1 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 **Registered P.E.**, licensed architect or **Registered Land Surveyor**; existing grade elevations, using the **NAVD 88**, and all proposed changes in grade resulting from excavation or filling; the location and dimensions of all existing and proposed **Buildings** and additions to **Buildings**.
- 601.2.2 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 900.0 of this Ordinance.
- 601.3 Upon receipt of a **Development** permit application, the Village Manager shall compare the elevation of the site to the **BFE**.
- 601.3.1 Any **Development** located on land that can be shown to be higher than the **BFE** of the current **FIRM** and which has not been filled after the date of the site's first Floodplain designation on a

FIRM, is not in the **Floodplain** and, therefore, not subject to the requirements of this Ordinance.

601.3.2 Any **Development** located on land shown to be below the **BFE** that is hydraulically connected to the **Floodplain**, but not shown on the current **FIRM**, is subject to the provisions of this Ordinance.

601.3.3 The Village Manager 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 **FIRM** identification in the **Floodplain**.

601.4 The Village Manager shall be responsible for obtaining from the **Applicant** copies of all other federal, state, and local permits, approvals or waivers that may be required for this type of activity, as specified in Section 404 of this Ordinance. The Village Manager shall not issue a permit unless all other federal, state, and local permits have been obtained.

601.5 A **Development** permit or approval shall become invalid unless the actual **Start of Construction**, as defined in Section 300, for work authorized by such permit, is commenced within 180 days after its issuance, or if the work authorized is suspended or abandoned for a period of 180 days after the work commences. All permitted work shall be completed within the local permit expiration period after the date of issuance of the permit or the permit shall expire. Time extensions, of not more than 180 days each, may be granted, in writing, by the Village Manager. Time extensions shall be granted only if the original permit is compliant with this Ordinance and the **FIRM** and **FIS** in effect at the time the extension is granted.

602.0 Preventing Increased Damages

602.1 No **Development** in the **Flood Fringe** shall create a threat to public health and safety.

602.2 If fill is being used to elevate the site above the **BFE**, the **Applicant** shall submit sufficient data and obtain a **LOMR** from **FEMA** for the purpose of removing the site from the **Floodplain**.

602.3 **Compensatory Storage.**

602.3.1 Whenever any portion of a **Floodplain** is authorized for use, the volume of space which will be occupied by the authorized fill or **Structure** below the **BFE** shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the **BFE**.

- 602.3.2 The excavation volume shall be at least equal to 1.5 times the volume of storage lost due to the fill or **Structure**
- 602.3.3 In the case of streams and watercourses, such excavation shall be made opposite or adjacent to the areas so filled or occupied.
- 602.3.4 All **Floodplain** storage lost below the existing 10-percent annual chance **Flood** elevation shall be replaced below the proposed 10-percent annual chance **Flood** elevation. All **Floodplain** storage lost above the existing 10-percent annual chance **Flood** elevation shall be replaced above the proposed 10-percent annual chance **Flood** elevation.
- 602.3.5 All such excavations shall be constructed to drain freely and openly to the watercourse.

603.0 Construction of a Building under a LOMR Based on Fill

A person who has obtained a **LOMR Based on Fill**, which removes a site in the **Floodplain** due to the use of fill to elevate the site above the **BFE**, may apply for a permit from the Village of Orland Park to construct the **Lowest Floor** of a **Building** below the **BFE** in the **Floodplain**. Village Manager shall not issue such a permit unless the **Applicant** has demonstrated that the **Building** will be reasonable safe from flooding. The Village Manager shall require a professional certification from a qualified design professional that indicates the land or **Buildings** to be removed from the SFHA are reasonably safe from flooding, according to the criteria established in **FEMA Technical Bulletin (TB) 10**. Professional certification may come from a professional engineer, professional geologist, professional soil scientist, or other design professional qualified to make such evaluations.

The Village Manager shall maintain records, including but not limited to, all correspondence, professional certification, existing and proposed grading, sump pump sizing, foundation plans, **Elevation Certificates**, **Compensatory Storage** calculations, soil testing and compaction data.

Section 700.0 Occupation and Use of Designated Floodways

This section applies to proposed **Development**, redevelopment, site modification or **Building** modification within a **Designated Floodway**. The **Designated Floodway** shall be as delineated on the countywide **FIRM** of Cook County and Will County, as defined in Section 300. Permits will only be issued for **Appropriate Uses** of the **Designated Floodway** of which periodic inundation will not pose a danger to the general health and welfare of the user or require the expenditure of public funds or the provisions of public resources or disaster relief services or result in increased **Flood** stages due to the singular or cumulative loss of regulatory **Floodway** storage or regulatory **Floodway** conveyance or increase in **Flood**

velocities. All **Floodway** modifications shall be the minimum necessary to accomplish the purpose of the project. The **Development** shall also meet the requirements of Section 900.0. No permit from **IDNR/OWR** or the Village of Orland Park shall be required if the project meets **Regional Permit** No. 3.

701.0 Development Permit

701.1 No person, firm, corporation or governmental body, shall commence any **Development** in a **Floodway** without first obtaining a **Development** permit from **IDNR/OWR** or the Village of Orland Park. Except as noted in Section 702.7.

701.2 Applications for a **Development** permit for work in a **Floodway** shall be made by submitting a completed application on the form furnished by **IDNR/OWR** or the Village of Orland Park. The application for a **Development** permit for work in a **Floodway**, shall as a minimum, include the following information:

701.2.1 Name and address of **Applicant**

701.2.2 Legal description of the property

701.2.3 Site location map of the property, drawn to scale on the **FIRM**, indicating whether it is proposed to be in an incorporated or unincorporated area

701.2.4 Name of stream or body of water affected

701.2.5 Description of proposed activity

701.2.6 Statement of purpose of proposed activity

701.2.7 Anticipated dates of initiation and completion of activity

701.2.8 Name and mailing address of the owner of the subject property if different from the **Applicant**

701.2.9 Signature of the **Applicant** or the **Applicant's** agent

701.2.10 If the **Applicant** is a corporation, the president or other authorized officer shall sign the application form

701.2.11 If the **Applicant** is a partnership, each partner shall sign the application form

- 701.2.12 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.
- 701.2.13 Plans of the proposed activity shall be provided, which include, as a minimum:
- 701.2.12.1 A vicinity map showing the site of the activity, name of the waterway, boundary lines, names of roads in the vicinity of the site, graphic or numerical scale, and north arrow;
 - 701.2.12.2 A plan view of the project and engineering study reach showing existing and proposed conditions including principal dimensions of the **Building** or work, elevations (**NAVD 88**), adjacent property lines and ownership, drainage and **Flood** control easements, location of any **Channels** and any existing or future access roads, distance between proposed activity and navigation **Channel** (when the proposed construction is near a commercially navigable body of water), **Designated Floodway** limit, **Floodplain** limit, specifications and dimensions of any proposed **Channel Modifications**, location and orientation of cross-sections, north arrow, and a graphic or numerical scale;
 - 701.2.12.3 Cross-section views of the project and engineering study reach showing existing and proposed conditions including principal dimensions of the work, as shown in plan view, existing and proposed elevations, normal water elevation, 10-percent annual chance **Flood** elevation, **BFE**, and graphic or numerical scales (horizontal and vertical);
 - 701.2.12.4 A seeding or stabilization plan for the disturbed areas.
 - 701.2.12.5 A copy of the **FIRM**, marked to reflect any proposed change in the **Designated Floodway** location.
- 701.2.13 Any and all other federal, state, and local permits or approval letters that may be required for this type of **Development**.
- 701.2.14 Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the permit criteria of Section 702.0.
- 701.2.15 If the **Designated Floodway** delineation or **BFE** will change due to the proposed project, the application will not be considered

complete until **IDNR/OWR** has indicated conditional approval of the **Designated Floodway** map change. No **Buildings** may be built until a **LOMR** has been approved by **FEMA**.

- 701.2.16 The application for a **Building** shall be accompanied by drawings of the site, drawn to scale showing property line dimensions and existing ground elevations and all changes in grade resulting from any proposed excavation or filling, and **Floodplain** and **Floodway** limits; sealed by a **Registered P.E.**, 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 900.0 of this Ordinance.
- 701.3 A **Development** permit or approval shall become invalid unless the **Start of Construction**, for work authorized by such permit, is commenced within 180 days after its issuance, or if the work authorized is suspended or abandoned for a period of 180 days after the work commences. All permitted work shall be completed within the local permit expiration period after the date of issuance of the permit or the permit shall expire. Time extensions, of not more than 180 days each, may be granted, in writing, by the Village Manager. Time extensions shall be granted only if the original permit is compliant with this Ordinance and the **FIRM** and **FIS** in effect at the time the extension is granted.
- 701.4 The Village Manager shall be responsible for obtaining from the **Applicant** copies of all other federal, state, and local permits and approvals that may be required for this type of activity.
- 701.3.1 The Village Manager shall not issue the **Development** permit unless all required federal and state permits have been obtained.
- 701.3.2 A Licensed **P.E.**, under the employ or contract of the Village of Orland Park shall review and approve applications reviewed under this Section.

702.0 Preventing Increased Damages and a List of Appropriate Uses.

- 702.1 The only **Development** in a **Floodway** allowed are **Appropriate Uses** that will not cause a rise in the **BFE** and will not create a damaging or potentially damaging increase in **Flood** heights or velocity, be a threat to public health and safety and welfare, impair the natural hydrologic and hydraulic functions of the **Floodway** or **Channel**, or permanently impair existing water quality or aquatic habitat. Construction impacts shall be minimized by appropriate mitigation methods as called for in this Ordinance. Only those **Appropriate**

Uses listed in 17 Ill. Adm. Code Part 3708 will be allowed. The approved **Appropriate Uses** are as follows:

- 702.1.1 **Flood Control Structures**, dikes, **Dams** and other public works or private improvements relating to the control of drainage, **Flooding**, erosion, or water quality or habitat for fish and wildlife.
- 702.1.2 **Structures** or facilities relating to the use of, or requiring access to, the water or shoreline, such as pumping and treatment facilities, and facilities and improvements related to recreational boating, commercial shipping and other functionally water dependent uses;
- 702.1.3 Storm and sanitary sewer relief outfalls;
- 702.1.4 Underground and overhead utilities;
- 702.1.5 Recreational facilities such as playing fields and trail systems, including any related fencing (at least 50 percent open when viewed from any one direction) built parallel to the direction of **Flood** flows, and including open air pavilions and toilet facilities (4 stall maximum) that will not block **Flood** flows nor reduce **Floodway** storage.
- 702.1.6 Detached garages, storage sheds, or other non-habitable **Accessory Structures** that will not block **Flood** flows nor reduce **Floodway** storage;
- 702.1.7 Bridges, culverts, roadways, sidewalks, railways, runways and taxiways and any modification thereto;
- 702.1.8 Parking lots built at or below existing grade where either:
 - 702.1.8.1 The depth of flooding during the **Base Flood** will not exceed 1.0 foot; or
 - 702.1.8.2 The **Applicant** of a short-term recreational use facility parking lot formally agrees to restrict access during overbank flooding events and accepts liability for all damage caused by vehicular access during all overbank flooding events.
- 702.1.9 Aircraft parking aprons built at or below ground elevation where the depth of flooding during the **Base Flood** will not exceed 1.0 foot;
- 702.1.10 **Designated Floodway** regrading, without fill, to create a positive non-erosive slop toward a watercourse.

- 702.1.11 Floodproofing activities to protect previously existing lawful **Buildings** including the construction of water tight window wells, elevating **Buildings**, or construction of floodwalls around residential, commercial or industrial principal **Buildings** where the outside toe of the floodwall shall be no more than ten (10) feet away from the exterior wall of the existing **Building**, and, which are not considered **Substantial Improvements** to the **Building**.
- 702.1.12 The replacement, reconstruction, or repair of a damaged **Building**, provided that the outside dimensions are not increased, and if the **Building** was damaged to fifty (50%) percent or more of the market value before the damage occurred, the **Building** will be protected from flooding to the **FPE**.
- 702.1.13 Modifications to an existing **Building** that would not increase the enclosed floor area of the **Building** below the **BF**E, and which will not block **Flood** flows including but not limited to, fireplaces, bay windows, decks, patios, and second story additions. If the **Building** is improved to fifty (50%) percent or more of the market value before the modification occurred (i.e., a **Substantial Improvement**), the **Building** will be protected from flooding to the **FPE**.
- 702.2 **Appropriate Uses** do not include the construction or placement of any new **Buildings**, 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**.
- 702.3 Within the **Designated Floodway**, the construction of an **Appropriate Use**, will be considered permissible provided that the proposed project meets the following engineering and mitigation criteria and is so stated in writing with supporting plans, calculations and data by a **Registered P.E.** and provided that any **Building** meets the protection requirements of Section 1000.0 of this Ordinance:
- 702.3.1 Preservation of **Flood** Conveyance, so as Not to Increase **Flood** Stages Upstream. For **Appropriate Uses** other than bridge or culvert crossings, on-stream **Structures** or **Dams**, all effective **Designated Floodway** conveyance lost due to the project will be replaced for all **Flood** events up to and including the **Base Flood**. In calculating effective **Designated Floodway** conveyance, the following factors shall be taken into consideration:

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

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

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

702.3.1.3.1 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.

702.3.1.3.2 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.

702.3.1.3.3 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.

702.3.1.3.4 Transition sections shall be provided between cross-sections with rapid expansions and contractions and when meeting the **Designated Floodway** delineation on adjacent properties.

702.3.1.3.5 All cross-sections used in the calculations shall be located perpendicular to **Flood** flows.

702.3.2 Preservation of **Floodway** Storage so as Not to Increase Downstream Flooding.

702.3.2.1 **Compensatory Storage** shall be provided for any **Designated Floodway** storage lost due to the proposed work from the volume of fill or **Structures** placed and the impact of any related **Flood** control projects.

702.3.2.2 **Compensatory Storage** for fill or **Structures** shall be equal to 1.5 times the volume of **Floodplain** storage lost.

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

702.3.2.4 The compensatory **Designated Floodway** storage shall be placed between the proposed normal water elevation and the proposed **BFE**. All **Designated Floodway** storage lost below the existing 10-percent annual chance **Flood** elevation shall be replaced below the proposed 10-percent annual chance **Flood** elevation. All **Designated Floodway** storage lost above the existing 10-percent annual chance **Flood** elevation shall be replaced above the proposed 10-percent annual chance **Flood** elevation. All such excavations shall be constructed to drain freely and openly to the watercourse.

702.3.2.5 If the **Compensatory Storage** will not be placed at the location of the proposed construction, the **Applicant's** engineer shall demonstrate through a determination of **Flood** discharges and water surface elevations that the **Compensatory Storage** is hydraulically equivalent.

702.3.2.6 There shall be no reduction in **Floodway** surface area, as a result of a **Floodway** modification, unless such modification is necessary to reduce flooding at an existing **Structure**.

702.3.3 Preservation of **Floodway** Velocities so as Not to Increase Stream Erosion or **Flood** Heights.

702.3.3.1 For all **Appropriate Uses**, except bridges or culverts or on-stream **Structures**, the proposed work will not result in an increase in the average **Channel** or **Designated Floodway** velocities or stage for all **Flood** events up to and including the **Base Flood** event.

702.3.3.2 In the case of bridges or culverts or on-stream **Structures** built for the purpose of backing up water in the stream during normal or **Flood** flows, velocities may be increased at the **Structure** site if scour, erosion and sedimentation will be avoided by the use of rip-rap or other design measures.

702.3.4 Construction of New Bridges or Culvert Crossings and Roadway Approaches.

702.3.4.1 The proposed **Structure** shall not result in an increase of upstream **Flood** stages greater than 0.1 foot when compared to the existing conditions for all **Flood** events up to and including the **Base Flood** 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 floodwalls or within recorded **Flood** easements.

702.3.4.2 If the proposed construction will increase upstream **Flood** stages greater than 0.1 feet, the developer must contact **IDNR/OWR** to obtain a permit for a **Dam** or waiver.

702.3.4.2.1 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 500.0 of this Ordinance. Bridges and Culverts must be analyzed using any commonly accepted **FEMA** approved hydraulic models.

702.3.4.2.2 Lost **Floodway** storage must be compensated for per Section 802.3.2.

702.3.4.2.3 Velocity increases must be mitigated per Section 802.3.3.

702.3.4.2.4 If the crossing is proposed over a **Public Body of Water** that is used for recreational or commercial navigation, an **IDNR/OWR** permit must be received.

702.3.4.2.5 The hydraulic analysis for the backwater caused by the bridge showing the existing condition and proposed regulatory profile must be submitted to **IDNR/OWR** for concurrence that a **CLOMR** is not required by Section 702.0.

702.3.4.2.6 All excavations for the construction of the crossing shall be designed per Section 702.3.8.

702.3.5 Reconstruction or **Modification** of Existing Bridges, Culverts, and Approach Roads.

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

702.3.5.2 If the existing bridge or culvert and roadway approach is a source of **Flood** damage to **Structures** in the upstream **Floodplain**, the **Applicant's** engineer shall evaluate the feasibility of redesigning the existing bridge or culvert and roadway approach to reduce the existing backwater, taking into consideration the effects on **Flood** stages on upstream and downstream properties.

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

702.3.6 On-Stream **Structures** Built for the Purpose of Backing Up Water.

702.3.6.1 Any increase in upstream **Flood** stages greater than 0.0 foot when compared to the existing conditions, for all **Flood** events up to and including the **Base Flood** 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 Floodwalls or within recorded **Flood** easements.

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

702.3.6.3 All **Dams** and impoundment **Structures**, as defined in Section 300.16, shall meet the permitting requirements of 17 Ill. Adm. Code Part 3702 (Construction and Maintenance of **Dams**). If the proposed activity involves a modification of the **Channel** or **Floodway** to accommodate an impoundment, it shall be demonstrated that:

702.3.6.3.1 The impoundment is determined to be in the public interest by providing **Flood** control, public recreation, or regional stormwater detention;

702.3.6.3.2 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;

702.3.6.3.3 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.

702.3.6.3.4 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;

702.3.6.3.5 The project otherwise complies with the requirements of Section 700.0.

702.3.7 Excavation in the **Floodway**.

702.3.7.1 When excavation is proposed in the design of bridges and culvert openings, including the modifications to and replacement of existing bridge and culvert **Structures**, or to compensate for lost conveyance or other **Appropriate Uses**, transition sections shall be provided for the excavation.

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

702.3.7.2.1 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; and

702.3.7.2.2 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; and

702.3.7.2.3 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; and

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

702.3.8 General Criteria for Analysis of **Flood** Elevations.

702.3.8.1 The **Flood** profiles, flows and **Floodway** data in the **Designated Floodway** study, referenced in Section 600.0, must be used for analysis of the base conditions. If the study data appears to be in error or conditions have changed, **IDNR/OWR** shall be contacted for approval and concurrence on the appropriate base conditions data to use.

702.3.8.2 If the **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:

702.3.8.2.1 The requirements of this section for the **BFEs** of the **Designated Floodway** conditions; and

702.3.8.2.2 Conditions with the receiving stream at normal water elevations.

702.3.8.3 If the **Applicant** learns from **IDNR/OWR**, local governments, or a private owner that a downstream restrictive bridge or culvert is scheduled to be removed, reconstructed, modified, or a **Public 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.

702.3.9 Conditional Letter of Map Revision.

702.3.9.1 If the **Appropriate Use** would result in a change in the **Designated Floodway** location or the **BFE**, the **Applicant** shall submit to **IDNR/OWR** and **FEMA** all information, calculations and documents necessary to be issued a conditional **Designated Floodway** map revision and receive from **IDNR/OWR** a conditional concurrence of the **Designated Floodway** change before a permit is issued.

702.3.9.2 The final **Designated Floodway** map will not be changed by **FEMA** until as-built plans or record drawings of initial filling, grading, dredging, or excavating activities are submitted and accepted by **FEMA** and **IDNR/OWR**. All field surveys shall be conducted under the supervision of a **Registered P.E.** or **Registered Land Surveyor** and shall be sealed. All required engineering analyses shall be conducted under the supervision of a **Registered P. E.**, or in the case of a federal project, by the federal agency and shall be so sealed or stated.

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

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

702.3.9.5 After initial filling, grading, dredging or excavating, no activities shall take place until a final **LOMR** is issued by **FEMA** with concurrence from **IDNR/OWR**.

702.3.10 Professional Engineer's Supervision.

All engineering analyses shall be performed by or under the supervision of a **Registered P.E.**

702.3.11 After receipt of conditional approval of the **Designated Floodway** change and issuance of a permit and a **Conditional Letter of Map Revision**, construction as necessary to change the **Floodway** designation may proceed but no **Buildings**-or **Structures** or other construction that is not an **Appropriate Use** may be placed in that area until the **Designated Floodway** map is changed and a final Letter of Map Revision is received. The **Designated Floodway** map will be revised upon acceptance and concurrence by **IDNR/OWR** and **FEMA** of the as-built plans.

702.4 Permits for **Dams**

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

702.4.2 If the Village Manager finds a **Dam** that does not have an **IDNR/OWR** permit, the Village Manager shall immediately notify the **IDNR/OWR** Bartlett office.

702.4.3 If Village Manager the finds a **Dam** which is believed to be in unsafe condition, the Village Manager shall immediately notify the owner of the **Dam**, the **IDNR/OWR** Bartlett office, and the Illinois Emergency Management Agency.

702.5 Activities That Do Not Require a **Registered Professional Engineer's** Review

Regional Permit No. 3, which authorizes, for example, underground and overhead utilities, storm and sanitary sewer outfalls, sidewalks, patios, athletic fields, playground equipment and streambank protection activities; may be permitted without a **Registered P.E.**'s review. Such activities shall still meet the other requirements of this Ordinance, including the mitigation requirements.

702.6 **Development** Activities in **Delegated Communities** Requiring State Review.

As specified in 17 Ill. Adm. Code Part 3708, the following shall not be delegated and shall be subject to **IDNR/OWR** review and permits:

702.6.1 Permits issued to organizations that are exempt from Village of Orland Park permitting authority.

702.6.2 **IDNR/OWR** projects, dams (as defined by 17 Ill. Adm. Code 3702) and all other state, federal or local unit of government projects, including projects of the municipalities and counties.

702.6.3 Construction and other activities in Public Bodies of Water pursuant to 17 Ill. Adm. Code 3704.

702.6.4 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 702.3.5.

702.6.5 An engineer's determination that a proposed new bridge, affected by backwater from a downstream receiving stream, may be built with a smaller opening pursuant to 702.3.4.

702.6.6 An analysis of alternative transition sections and hydraulically equivalent storage pursuant to Section 702.3(.1,.2,.8).

702.6.7 Projects which revise or establish the **Floodway** and/or **Flood** profiles.

Section 800.0 Occupation and Use of Floodplain Areas Where Floodways Are Not Identified.

In **Floodplains**, (including AE, AH, AO and Unnumbered A Zones) where no **Floodways** have been identified and no **BFEs** 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 **BFE**.

801.0 Development Permit.

801.1 No person, firm, corporation, or governmental body, shall commence any **Development** in a **Floodplain** without first obtaining a **Development** permit from the Village Manager.

801.2 Application for a **Development** permit shall be made on a form provided by the Village Manager.

801.2.1 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 **Registered P.E**, licensed architect or **Registered Land Surveyor**; the location and dimensions of all **Buildings** and additions to **Buildings**; and the elevations of the **Lowest Floor** (including **Basement**) of all proposed **Buildings** subject to the requirements of Section 900.0 of this Ordinance.

801.2.2 The application for a **Development** permit shall also include the following information:

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

- 801.2.2 Site location (including legal description) of the property, drawn to scale, on the **FIRM**, indicating whether it is proposed to be in an incorporated or unincorporated area;
- 801.2.3 Anticipated dates of initiation and completion of activity;
- 801.2.4 Plans of the proposed activity shall be provided that include, as a minimum:
 - 801.2.4.1 A vicinity map showing the site of the activity, name of the waterway, boundary lines, names of roads in the vicinity of the site, graphic or numerical scale, and north arrow;
 - 801.2.4.2 A plan view of the project and engineering study reach showing existing and proposed conditions including principal dimensions of the **Structure** or work, elevations, using the **NAVD 88**, adjacent property lines and ownership, drainage and **Flood** control easements, distance between proposed activity and navigation **Channel** (when the proposed construction is in or near a commercially navigable body of water), **Floodplain** limit, location and orientation of cross-sections, north arrow, and a graphical or numerical scale;
 - 801.2.4.3 Cross-section views of the project perpendicular to the flow of floodwater and engineering study reach showing existing and proposed conditions including principal dimensions of the work as shown in plan view, existing and proposed elevations, normal water elevation, 10-percent annual chance **Flood** elevation, **BF**E, and graphical or numerical scales (horizontal and vertical); and
 - 801.2.4.4 A seeding or stabilization plan for the disturbed areas.
- 801.2.3 Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the criteria of Section 802.0.
- 801.2.4 Any and all other federal, state, and local permits or approvals that may be required for this type of **Development**.
- 801.3 Based on the best available existing data according to federal, state or other sources, the Village Manager shall compare the elevation of the site to the **BF**E.
 - 801.3.1 Should no **BF**E information exist for the site, the developer's engineer shall calculate the **BF**E according to Section 504.0.

- 801.3.2 Any **Development** located on land that can be shown to have been higher than the **BFE** prior to the current **FIRM's Floodplain** identification, is not in the **Floodplain** and, therefore, not subject to the requirements of this Ordinance.
- 801.3.3 The Village Manager 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 current **FIRM's Floodplain** identification.
- 801.3.4 The Village Manager shall be responsible for obtaining from the **Applicant** copies of all other federal, state, and local permits, approvals or waivers that may be required for this type of activity. The Village Manager shall not issue the **Development** permit unless all required federal, state, and local permits have been obtained.
- 801.4 A **Development** permit or approval shall become invalid unless the **Start of Construction**, for work authorized by such permit, is commenced within 180 days after its issuance, or if the work authorized is suspended or abandoned for a period of 180 days after the work commences. All permitted work shall be completed within the local permit expiration period after the date of issuance of the permit or the permit shall expire. Time extensions, of not more than 180 days each, may be granted, in writing, by the Village Manager. Time extensions shall be granted only if the original permit is compliant with this Ordinance and the **FIRM** and **FIS** in effect at the time the extension is granted.

802.0 Preventing Increased Damages.

- 802.1 No **Development** in the **Floodplain**, where a **Floodway** has not been determined, shall create a damaging or potentially damaging increase in **Flood** heights or velocity or threat to public health, safety and welfare or impair the natural hydrologic and hydraulic functions of the **Floodway** or **Channel** or impair existing water quality or aquatic habitat. Construction impacts shall be minimized by appropriate mitigation methods as called for in this Ordinance.
- 802.2 Within all riverine **Floodplains** where the **Floodway** has not been determined, the following standards shall apply:
- 802.2.1 The developer shall have a Licensed **P.E.** state in writing and show through supporting plans, calculations, and data that the project meets the engineering requirements of Section 702.3.1 through 702.3.9 for the entire **Floodplain** as calculated under the provisions of Section 504.0 of this Ordinance.

802.2.2 As an alternative, the developer should have an engineering study performed to determine a **Floodway** and submit that engineering study to **IDNR/OWR** and **FEMA** for acceptance as a **Designated Floodway**.

802.2.3 Upon acceptance of the **Floodway** by **IDNR/OWR** and **FEMA**, the developer shall then demonstrate that the project meets the requirements of Section 700.0 for the **Designated Floodway**. The **Floodway** shall be defined according to the definition in Section 300.18 of this Ordinance.

802.2.4 A **Development** permit shall not be issued unless the **Applicant** first obtains a **IDNR/OWR** permit or a determination has been made that an **IDNR/OWR** permit is not required.

802.2.5 Permits for **Dams**

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

802.2.5.2 If the Village Manager finds a **Dam** that does not have an **IDNR/OWR** permit, the Village Manager shall immediately notify the **IDNR/OWR** Bartlett office.

802.2.5.3 If the Village Manager finds a **Dam** which is believed to be in unsafe condition, Village Manager shall immediately notify the owner of the **Dam**, the **IDNR/OWR** Bartlett office, and the Illinois Emergency Management Agency.

802.3 The following activities may be permitted without a Licensed **P.E.**'s review or calculation of **BFE** and **Designated Floodway**. Such activities shall still meet the other requirements of this Ordinance.

802.3.1 Bridge and culvert crossings of streams in rural areas meeting conditions of **IDNR/OWR** Statewide Permit No. 2;

802.3.2 Barge fleeting facilities meeting conditions of **IDNR/OWR** Statewide Permit No. 3;

802.3.3 Aerial utility crossings meeting conditions of **IDNR/OWR** Statewide Permit No. 4

802.3.4 Minor boat docks meeting conditions of **IDNR/OWR** Statewide Permit No. 5;

- 802.3.5 Minor, non-obstructive activities meeting conditions of **IDNR/OWR** Statewide Permit No. 6; activities (not involving fill or positive change in grade) are covered by this permit;
 - 802.3.6 Outfall **Structures** and drainage ditch outlets meeting conditions of **IDNR/OWR** Statewide Permit No. 7;
 - 802.3.7 Underground pipeline and utility crossings meeting the conditions of **IDNR/OWR** Statewide Permit No. 8;
 - 802.3.8 Bank stabilization projects meeting the conditions of **IDNR/OWR** Statewide Permit No. 9;
 - 802.3.9 **Accessory Structures** and additions to existing residential **Buildings** meeting the conditions of **IDNR/OWR** Statewide Permit No. 10;
 - 802.3.10 Minor maintenance dredging activities meeting conditions of **IDNR/OWR** Statewide Permit No. 11;
 - 802.3.11 Bridge and culvert replacement **Structures** and bridge widenings meeting conditions of **IDNR/OWR** Statewide Permit No. 12;
 - 802.3.12 Temporary construction activities meeting conditions of **IDNR/OWR** Statewide Permit No. 13;
 - 802.3.13 Special Uses of Public Waters meeting conditions of **IDNR/OWR** Statewide Permit No. 14; and
 - 802.3.14 Any **Development** determined by **IDNR/OWR** to be located entirely within a **Flood Fringe** area shall be exempt from State **Floodway** permit requirements.
- 802.4 The **Flood** carrying capacity of any altered or relocated watercourse shall be maintained.
- 802.5 **Compensatory Storage.**
- 802.5.1 Whenever any portion of a **Floodplain** is authorized for use, the volume of space which will be occupied by the authorized fill or **Structure** below the **BFE** shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the **BFE**.
 - 802.5.2 The excavation volume shall be at least equal to 1.5 times the volume of storage lost due to the fill or **Structure**.

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

802.5.4 All **Floodplain** storage lost below the existing 10-percent annual chance **Flood** elevation shall be replaced below the proposed 10-percent annual chance **Flood** elevation. All **Floodplain** storage lost above the existing 10-percent annual chance **Flood** elevation shall be replaced above the proposed 10-percent annual chance **Flood** elevation. All such excavations shall be constructed to drain freely and openly to the watercourse.

Section 900.0 Permitting Requirements Applicable to All Floodplain Areas.

In addition to the requirements found in Sections 600.0, 700.0 and 800.0 for **Development in Flood Fringes, Designated Floodways, and Floodplains** where no **Floodways** have been identified, the following requirements shall be met.

901.0 Public Health and Other Standards

- 901.1 No Developments in the **Floodplain** shall include locating or storing chemicals, explosives, buoyant materials, animal wastes, fertilizers, flammable liquids, pollutants, or other hazardous or toxic materials below the **FPE** unless such materials are stored in a floodproofed and anchored storage tank and certified by a **P.E.** or floodproofed **Building** constructed according to the requirements of Section 1003 of this Ordinance.
- 901.2 Public utilities and facilities such as sewer, gas and electric shall be located and constructed to minimize or eliminate **Flood** damage.
- 901.3 Public sanitary sewer systems and water supply systems shall be located and constructed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters.
- 901.4 New and replacement water supply systems, wells, sanitary sewer lines and on-site waste disposal systems may be permitted providing all manholes or other above ground openings located below the **FPE** are watertight. New and replacement on-site sanitary sewer lines or waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
- 901.5 All other activities, defined as **Development**, such as pools, fences, filling, paving, etc., shall be designed so as not to alter **Flood** flows or increase potential **Flood** damages.

902.0 Carrying Capacity and Notification of Adjacent Communities

- 902.1 For all projects involving **Channel Modification**, fill, or stream maintenance (including levees), the **Flood** carrying capacity of the watercourse shall be maintained.
- 902.2 In addition, the Village of Orland Park shall notify adjacent communities in writing 30 days prior to the issuance of a permit for the alteration or relocation of the watercourse.

903.0 Protecting Buildings

902.1 In addition to the damage prevention requirements in Sections 602 and 702 of this Ordinance, all **Buildings** located within a **Floodplain**, shall be protected from **Flood** damage below the **FPE**. This **Building** protection criteria applies to the following situations:

903.1.1 **New Construction** or placement of a new **Building** or alteration or addition to an existing **Building** valued at more than one thousand dollars (\$1,000) or seventy (70) square feet.

903.1.2 **Substantial Improvements**, including any combination of alteration, repair, rehabilitation, reconstruction, addition, or other improvements made to an existing **Building** that equal or exceed the market value by fifty percent (50%), or that increase the floor area by more than twenty percent (20%). Alteration shall be figured during the life of the **Building**. If substantially improved, the existing **Building** and the addition must meet the **Flood** Protection standards of this section.

903.1.3 Any repairs made to a **Substantially Damaged Building**. **Substantial Damage** shall be figured during the life of the **Building** by comparing the cost to repair the building to its pre-damage condition with the market value of the building immediately prior to the damage, for each event in which the building sustains damage, and adding the percentages of damage for each event.. If **Substantially Damaged**, the entire **Building** must meet the **Flood** Protection standards of this section.

903.1.4 Installing a **Manufactured Home** on a new site or a **Manufactured Home** on an existing site. (The **Building** protection requirements do not apply when returning a **Manufactured Home** to the same site it lawfully occupied before it was removed to avoid **Flood** damage).

903.1.5 Installing a travel trailer or **Recreational Vehicle** on a site for more than 180 days in any calendar year; and

903.1.6 **Repetitive Loss** to an existing **Building** as defined in Section 300.52.

903.2 The lowest floor (including **Basement**) of **New Construction** of residential **Buildings**, and **Substantially Improved** residential **Buildings**, must be elevated to the **FPE**, subject to the more specific additional requirements in Sections 903.2.1 through 903.2.3 below.

903.2.1 If fill, including grading to redistribute onsite material to alter existing topography, is used as a means of elevation:

903.2.1.1 The **Lowest Floor** (including **Basement**) shall be at or above the **FPE**.

903.2.1.2 The fill shall be placed in layers no greater than six inches before compaction and must extend at least ten (10) feet beyond the foundation before sloping below the **FPE**.

903.2.1.3 The top of the fill shall be above the **FPE**. 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.

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

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

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

903.2.2 If the **Building**'s lowest floor is elevated above ground level with an enclosed or unenclosed area below the lowest floor:

903.2.2.1 The **Building** shall be elevated on piles, walls, columns, crawlspace, or other foundation that is permanently open to floodwaters.

903.2.2.2 All enclosed areas below the **FPE** shall provide for equalization of hydrostatic pressures by allowing the automatic entry and exit of floodwaters. Each wall must have a minimum of one (1) permanent opening that is below the **BFE** and no more than one (1) foot above finished grade. The openings shall provide a total net area of not less than one (1) square inch for every one (1) square foot of enclosed area subject to flooding below the **BFE**, or

the design must be certified by a **Registered P.E.**, as providing the equivalent performance in accordance with accepted standards of practice. Refer to **FEMA TB 1, Openings in Foundation Walls and Walls of Enclosures**, for additional guidance.

903.2.2.3 All electrical, heating, ventilating, plumbing, and air conditioning equipment and utility meters shall be located at or above the **FPE**.

903.2.2.4 The **Building**, foundation, and supporting members shall be adequately anchored to prevent flotation, collapse, or lateral movement of the **Building** resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, and be designed so as to minimize exposure to current, waves, ice, and floating debris.

903.2.2.5 All **Building** components below the **FPE** shall be constructed of materials resistant to **Flood** damage.

903.2.2.6 Water and sewer pipes, electrical and telephone lines, submersible pumps, and other service facilities may be located below the **FPE** provided they are waterproofed.

903.2.2.7 The area below the **FPE** shall be used solely for parking or **Building** access and not later modified or occupied as habitable space.

903.2.3 If the floor of any area of a **Building** below the lowest floor is proposed to be below grade on all sides, typical for crawlspace construction, the **Building** shall meet the requirements of this Ordinance and **FEMA TB 11 Crawlspace Construction for Buildings Located in Special Flood Hazard Areas**. The **Building**, while **NFIP** compliant, will be considered to have a basement for **NFIP** insurance purposes.

903.2.3.1 The **Building** shall be designed and adequately anchored to resist flotation, collapse, and lateral movement of the **Building** resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

903.2.3.2 All enclosed areas below the **FPE** shall provide for equalization of hydrostatic pressures by allowing the automatic entry and exit of floodwaters. Each wall must have a minimum of one (1) permanent opening that is below the **BFE** and no more than one (1) foot above finished grade. The openings shall provide a total net area of not less than one (1) square inch for every one (1) square

foot of enclosed area subject to flooding below the **BE**, or the design must be certified by a **Registered P.E.** as providing the equivalent performance in accordance with accepted standards of practice. Refer to **FEMA TB 1, Openings in Foundation Walls and Walls of Enclosures**, for additional guidance.

903.2.3.3 Per **FEMA TB 11**, the crawlspace shall be designed so that:

903.2.3.3.1 The interior grade of the crawlspace floor below the **FPE** must not be more than two (2) feet below the lowest adjacent grade.

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

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

903.2.3.3.4 The velocity of floodwater at the site shall not exceed 5 feet per second.

903.2.3.6 Portions of the **Building** below the **FPE** must be constructed with materials resistant to **Flood** damage.

903.2.3.7 Utility systems within the crawlspace must be elevated above the **FPE**.

903.3 The lowest floor (including basement) of **New Construction** of nonresidential buildings, and **Substantial Improvement** of nonresidential **Buildings**, must either (1) be elevated to or above the **FPE**, subject to the more specific additional requirements of Sections 903.2.1 through 903.2.3 above; or (2) be structurally dry-floodproofed (in lieu of elevation), provided a **Registered P.E.** or architect submits a **FEMA Floodproofing Certificate**, documenting that the **Registered P.E.** or architect developed and/or reviewed the structural design, specifications, and plans for construction, and that the engineer or architect certifies that the design and methods of construction are in accordance with accepted standards of practice for meeting the requirements of ASCE 24-14 and the requirements listed below:

903.3.1 Below the **FPE**, the **Building** and attendant utility and sanitary facilities are watertight with walls substantially impermeable to the

passage of water and structural components capable of resisting hydrostatic and hydraulic loads and the effects of buoyancy.

903.3.2 The **Building** design accounts for **Flood** velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and impact from debris and ice.

903.3.3 **Floodproofing** measures will be incorporated into the **Building** design and operable without human intervention and without an outside source of electricity.

903.3.4 The **Building**, utility, and sanitary facilities' design and construction will prevent the effect of sewer backup into the building.

903.3.5 Levees, berms, floodwalls and similar works are not considered **Floodproofing** for the purpose of this Ordinance.

903.4 All placement of **Manufactured Homes** and or travel trailers, to be permanently installed on site for more than 180 days in any calendar year, shall be:

903.4.1 Elevated to or above the **FPE** using a support and anchoring system, designed by a **P.E.** pursuant to 77 Ill. Adm. Code § 870.110.

903.4.2 Anchored to resist flotation, collapse, or lateral movement by being tied down in accordance with the rules and regulations for the Illinois Mobile Home Tie-Down Act issued pursuant to 77 Ill. Adm. Code § 870.220

903.5 Travel trailers and **Recreational Vehicles**, on site for more than 180 days in any calendar year, shall meet the elevation requirement and anchoring requirements of Section 903.4 unless the following conditions are met:

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

903.5.2 The vehicle must not be attached to any permanent additions or external **Structures**, such as decks and porches.

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

903.5.4 The vehicles having a total area not exceeding four hundred (400) square feet measured when all horizontal projections are fully expanded.

- 903.5.5 The vehicle's wheels must remain on axles and have inflated tires.
- 903.5.6 Any air conditioning units must be attached to the frame so as to be safe for movement out of the **Floodplain**.
- 903.5.7 The vehicle must be attached to a site only by quick disconnect type utilities and security devices. Utility connections include, but are not limited to, propane tanks, electrical and sewage.
- 903.5.8 The vehicle must be licensed and titled as a **Recreational Vehicle** or park model, and must either be entirely be supported by jacks, or have a hitch jack permanently mounted, have the tires touching the ground and be supported by block in a manner that will allow the block to be easily removed by use of the jacks/hitch jack.
- 903.6 Garages, sheds or other minor **Accessory Structures** constructed ancillary to an existing residential use may be constructed with the **Lowest Floor** below the **FPE** provided the following conditions are met:
- 903.6.1 The **Building** must be not be constructed and used for habitation, must not include areas intended or used for living, sleeping, eating, or cooking, and must not include bathrooms, toilet rooms, or shower rooms.
- 903.6.2 All areas below the **BFE** shall be constructed with **Flood-resistant** materials.
- 903.6.3 The **Building** must be used only for the storage of vehicles and tools and cannot be modified later into another use.
- 903.6.4 The **Building** shall be located outside of the **Designated Floodway** unless the **Building** can be constructed and placed on a **Building** site so as not to block **Flood** flows nor reduce **Floodway** storage (Section 702.1.6), can also meet the **Appropriate Use** criteria of Section 700.0 and all other applicable requirements of this Ordinance.
- 903.6.5 All electrical lines, switches, receptacles, and fixtures must be located above the **FPE** except to the minimum extent required by applicable building or life-safety codes. Any switches, receptacles, and/or fixtures required by applicable building or life-safety codes to extend below the **FPE** shall be rated, or located in enclosures rated, for prolonged submersion.

- 903.6.6 No plumbing, heating, or air conditioning shall be permitted in garages, sheds, or other minor **Accessory Structures** allowed to be wet floodproofed under this subsection 903.6 in lieu of elevation.
- 903.6.6 The **Building** must have at least one permanent opening on each wall below the **BFE** and not more than one (1) foot above the finished, outside grade with one (1) square inch of opening for every one (1) square foot of floor area.
- 903.6.7 The **Building** must be less than fifteen thousand dollars (\$15,000) in market value or replacement cost whichever is greater or less than five hundred and seventy-six (576) square feet (24 feet x 24 feet).
- 903.6.8 The **Building** shall be anchored to resist floatation and overturning.
- 903.6.9 All flammable or toxic materials (gasoline, paint, insecticides, fertilizers, etc.) shall be stored above the **FPE**.
- 903.6.10 The **Lowest Floor** elevation should be documented, and the owner advised of the **Flood** insurance implications of building with the lowest **Flood** below the **BFE**.
- 903.7 In **Floodplain** Zones AO and AH, drainage paths shall be provided around **Buildings** on sloped ground to guide water away from the **Buildings**.
- 903.8 Existing **Buildings** located within a **Designated Floodway** shall also meet the more restrictive **Appropriate Use** standards included in Section 700.0. Non-conforming **Buildings** located in a **Designated Floodway** may remain in use and may only be enlarged, replaced or structurally altered in accordance with Section 702.0. A non-conforming **Building** 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.
- 903.9 **New Construction** or **Substantial Improvement** of **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 0.2 percent chance **Flood** elevation or three feet above the **BFE** 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 **BFE** shall be provided to all **Critical Facilities**. As necessary, adequate parking, at or

above the **BFE**, shall be provided for staffing of the **Critical Facilities** during a **Flood**.

Critical Facilities may include: emergency services facilities (such as fire and police stations), schools, sewage treatment plants, water treatment plants, sanitary pumping stations, hospitals, retirement homes, 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).

Section 1000.0 Subdivision Requirements

The Village President and Board of Trustees shall take into account **Flood** hazards, to the extent that they are known in all official actions related to land management, use and **Development**.

1001.0 New subdivisions, **Manufactured Home** parks, annexation agreements, and Planned Unit Developments within the **Floodplain** shall be reviewed to assure that the proposed Developments are consistent with Sections 600.0, 700.0, 800.0 and 900.0 of this Ordinance and the need to minimize **Flood** damage. Plats or plans for new subdivisions, **Manufactured Home** parks and Planned Unit Developments shall include a signed statement by a **Registered P.E.** that the plat or plans account for changes in the drainage of surface waters in accordance with the Plat Act (765 ILCS 205/2).

1002.0 Proposals for new subdivisions, **Manufactured Home** parks, travel trailer parks, Planned Unit Developments and additions to **Manufactured Home** parks and additions to subdivisions shall include **BFE** data and **Floodway** delineations. Where this information is not available from an existing adopted study, the **Applicant's** engineer shall be responsible for calculating the **BFE** per Section 504.0 and the **Floodway** delineation per the definition in Section 300.18.

1003.0 Streets, blocks, lots, parks and other public grounds shall be located and laid out in such a manner as to preserve and utilize natural streams and **Channels**. Wherever possible, the **Floodplains** shall be included within parks or other public grounds.

1004.0 The Village President and Board of Trustees shall not approve any Planned Unit Development or plat of subdivision located outside the corporate limits unless such agreement or plat is in accordance with the provisions of this Ordinance.

1005.0 All public utilities and facilities, such as sewer, gas, electrical and water systems, must be located and constructed to minimize or eliminate **Flood** damage.

Section 1100.0 Variances

1100.0 No variances shall be granted within a **Designated Floodway**, as defined in Section 300.18, if any increase in **Flood** levels would result.

1101.0 Whenever the standards of this Ordinance place undue hardship on a specific **Development** proposal, the **Applicant** may apply to the Village Plan Commission for a variance. The Village Plan Commission shall review the **Applicant's** request for a variance and shall submit its recommendation to the Village President and Board of Trustees. The Village of Orland Park may attach such conditions to granting of a variance as it deems necessary to further the **Flood** protection intent of this Ordinance.

1102.0 No variance shall be granted unless the **Applicant** demonstrates, and the Village President and Board of Trustees finds, that all of the following conditions are met:

1102.1 The **Development** activity cannot be located outside the **Floodplain**.

1102.2 An exceptional hardship would result if the variance were not granted.

1102.3 The variance granted is the minimum necessary, considering the **Flood** hazard, to afford relief.

1102.4 There will be no additional threat to public health or safety, destruction of beneficial stream uses and functions including, aquatic habitat, creation of a nuisance, causation of fraud on or victimization of the public, or conflict with existing local laws or ordinances.

1102.5 There will be no additional public expense for **Flood** protection, lost environmental stream uses and functions, rescue or relief operations, policing, or repairs to streambeds and banks, roads, utilities, or other public facilities; and

1102.6 The provisions of Sections 602.0 and 802.0 of this Ordinance shall still be met; and

1102.7 The **Applicant's** circumstances are unique and do not establish a pattern inconsistent with the intent of the NFIP; and

1102.8 All other required state and federal permits or waivers have been obtained.

1103.0 The Village Manager shall notify an **Applicant** in writing that a variance from the requirements of Section 900.0 that would lessen the degree of protection to a **Building** will:

1103.1 Result in increased premium rates for **Flood** insurance up to amounts as high as \$25 per \$100 of insurance coverage; and

1103.2 Increase the risks to life and property; and

1103.3 Require that the **Applicant** proceed with knowledge of these risks and that the **Applicant** will acknowledge in writing the assumption of the risk and liability.

1104.0 Variances requested in connection with restoration of a historic site or **Historic Structure**, may be granted to allow repair or rehabilitation of **Historic Structures** using criteria more permissive than the requirements of Sections 1102 and 1103, subject to the conditions that:

1104.1 The variance is the minimum necessary to preserve the historic character and design of the **Building**; and

1104.2 The repair or rehabilitation will not preclude the **Building**'s continued designation as a **Historic Structure**.

1105.0 The findings of fact and conclusions of law made by the Village President and Board of Trustees according to Section 1102, the notifications required by Section 1103, and a record of hearings and evidence considered as justification for the issuance of all variances from this ordinance shall be maintained by the Village of Orland Park in perpetuity.

Section 1200.0 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 **Floodplain**, will be free from flooding or damage. This Ordinance does not create liability on the part of the Village of Orland Park or any officer or employee thereof for any **Flood** damage that results from reliance on this Ordinance or any administrative decision made lawfully thereunder.

Section 1300.0 Penalty

1301.0 Failure to obtain a permit for **Development** in the **Floodplain** or failure to comply with the conditions of a permit or a variance shall be deemed to be a violation of this Ordinance. Upon due investigation, the Village Manager may determine that a violation of the minimum standards of this Ordinance exists. The Village Manager shall notify the owner in writing of such violation. In order to document receipt, this notice shall be sent by certified mail, return receipt.

1302.0 If such owner fails, after ten days from the date the written notice is issued, to correct the violation:

1302.1 The Village of Orland Park 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.

1302.2 Any person who violates this Ordinance shall, upon conviction thereof, be fined not less than fifty dollars (\$50.00) or more than seven hundred fifty dollars (\$750) for each offense.

1302.3 A separate offense shall be deemed committed upon each day during or on which a violation occurs or continues.

1302.4 The Village of Orland Park shall record a notice of violation on the title to the property.

1303.0 The Village 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.

1303.1 The Village Manager is authorized to issue an order requiring the suspension of the subject **Development**. The stop-work order shall be in writing, shall indicate the reason for the issuance, and shall order the action, if necessary, to resolve the circumstances requiring the stop-work order. The stop-work order constitutes a suspension of the permit.

1303.2 No site **Development** permit shall be permanently suspended or revoked until a hearing is held by the Village President and Board of Trustees. Written notice of such hearing shall be served on the permittee and shall state: (1) the grounds for complaint or reasons for suspension or revocation; and (2) the time and place of the hearing. At such hearing, the permittee shall be given an opportunity to present evidence on his/her behalf. At the conclusion of the hearing, the Village President and Board of Trustees shall determine whether the permit shall be suspended or revoked.

1304.0 Nothing herein shall prevent the Village of Orland Park from taking such other lawful action to prevent or remedy any violations. All costs connected therewith shall accrue to the person or persons responsible.

Section 1400.0 Abrogation and Greater Restrictions

This Ordinance repeals and replaces other Ordinances adopted by the Village President and Board Of Trustees to fulfill the requirements of the **NFIP** including: January 21, 2019.

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

Section 1500.0 Severability

The provisions and sections of this Ordinance shall be deemed separable and the invalidity of any portion of this Ordinance shall not affect the validity of the remainder.

Section 1600.0 Effective Date

This Ordinance shall be in full force and effect from and after its passage and approval and publication, as required by law.

Passed by the Village President and Board of Trustees of the Orland Park, Illinois, this _____ day of October, 2019

Clerk

Approved by me this _____ day of October, 2019.

Mayor

Attested and filed in my office this _____ day of October, 2019.

Clerk