

DuPage County Ordinance - Stormwater and Floodplain Updates (Revised 5-11-10)

Section No.	Existing Ordinance Language	Proposed Language
15-132.2	<p>The regulatory flood plain shall be determined by the highest base flood elevation for a development site at the time of application as determined by:</p> <p>a. Flood plain studies in the Watershed Plans.</p> <p>b. Flood plain studies prepared as part of Interim Watershed Plans.</p> <p>c. OWR studies adopted as State Regulatory Maps listed in Exhibit 2.</p> <p>d. Flood Insurance Studies, Flood Insurance Rate Maps, and Flood Boundary and Floodway Maps published by FEMA listed in Exhibit 2.</p> <p>e. Project specific flood plain studies that meet the standards established in the Plan and approved by the Director.</p>	<p>The regulatory floodplain boundary for a development site shall be determined using the following:</p> <p>a. If an FEQ watershed plan model has DuPage County floodplain studies that have been completed <u>AND</u> adopted by FEMA as the regulatory floodplain. then floodplain boundary shall be based on the FEQ flood elevation.</p> <p>b. If an FEQ watershed plan model has been completed but has <u>NOT</u> been adopted by FEMA as the regulatory floodplain, the floodplain boundary shall be based on the FIS regulatory model (using the FIS regulatory flowrates). DuPage County floodplain studies prepared as part of Watershed Plans or Interim Watershed Plans.</p> <p>c. If no regulatory model is available, the flood elevation shall be determined using a FEMA-accepted model.</p> <p>d. For projects with no mapped regulatory floodplain that require site-specific floodplain studies, the flood elevation shall be determined using a FEMA-accepted model.</p>
15-132.3	<p>The Director, or the Administrator in a complete waiver community, may require the applicant to perform a project specific flood plain study when no other regulatory flood plain has been established as provided in Subsection 15-132.2 of this Ordinance. If the drainage area is one square mile or greater, the study shall also require approval from OWR or their designee.</p>	<p>The Director, or the Administrator in a complete waiver community, may require the applicant to perform a project specific flood plain study when no other regulatory flood plain has been established as provided in Subsection 15-132.2 of this Ordinance. If the drainage area is one square mile or greater, <i>approval from IDNR-OWR or their designee shall be required.</i></p>
15-132.4	<p>Any development located within the regulatory flood plain as listed in Exhibit 2 may require approval from OWR or its designee or FEMA or both. Exhibit 2 includes approved OWR and FEMA studies and maps used for insurance and flood plain management purposes.</p>	<p>Any development located within the regulatory floodplain may require approval from FEMA. If the drainage area is one square mile or greater, IDNR-OWR approval shall also be required. Refer to Section 15-XXX.XX for a list of projects that require IDNR-OWR approval.</p>
15-132.5	<p>The regulatory floodway shall be designated by OWR or its designee and is shown on maps listed in Exhibit 2. If a floodway is not designated on the maps in Exhibit 2, then the regulatory floodway shall be deemed to be the regulatory flood plain.</p>	<p>The regulatory floodway shall be designated by OWR or its designee and is shown on maps listed in Exhibit 2; IDNR-OWR Part 3708 rules shall apply to the designated floodway. If a floodway is not designated on the maps in Exhibit 2 and the tributary area is greater than one square mile, IDNR-OWR Part 3700 rules shall apply.</p>
15-133.1	<p>Development shall preserve effective floodway conveyance such that there will be no increases in flood elevations, flows, or floodway velocity, unless any such increases are contained in a public flood easement and a watershed benefit is provided.</p>	<p>Development (<i>other than streambank stabilization projects</i>) shall preserve effective floodway conveyance such that there will be no increases in flood elevations of 0.1 feet or greater, flows, or floodway velocity, unless any such increases are contained in a public flood easement and a watershed benefit is provided.</p>
15-133.2	<p>Structures that are floodproofed shall:</p> <p>a. Be anchored (including manufactured homes) to prevent flotation, collapse, or lateral movement of the structure.</p> <p>b. Use flood resistant materials below the base flood elevation.</p> <p>c. Use construction methods and practices that do not increase the potential for increases in flood damage.</p> <p>d. Locate electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities at least one foot above the base flood elevation.</p> <p>e. Provide adequate drainage.</p>	<p>Structures (both habitable and non-habitable) that are floodproofed shall:</p> <p>a. Be anchored (including manufactured homes) to prevent flotation, collapse, or lateral movement of the structure.</p> <p>b. Use flood resistant materials below the base flood elevation.</p> <p>c. Use construction methods and practices that do not increase the potential for increases in flood damage.</p> <p>d. Locate electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities at least one foot above the base flood elevation.</p> <p>e. Provide adequate drainage.</p>
15-133.3	<p>Temporary or permanent storage of the following are prohibited unless elevated or floodproofed to one foot above the base flood elevation:</p> <p>a. Items susceptible to flood damage; or</p> <p>b. Unsecured buoyant materials or materials that may cause off-site damage including bulky materials, flammable liquids, chemicals, explosives, pollutants, or other hazardous materials; or</p> <p>c. Landscape wastes.</p>	<p>No change.</p>
15-133.4	<p>All usable space in new buildings, added to existing buildings, or in existing buildings in the flood plain undergoing substantial improvement shall be elevated to at least one foot above the base flood elevation.</p>	<p>All usable space in new buildings, added to existing buildings, or in existing buildings in the flood plain undergoing substantial improvement shall be elevated to at least one foot above the base flood elevation. <i>Accessory structures to single family residences, such as detached garages, attached garages, and sheds, may be constructed with the lowest floor at or above the BFE.</i></p>
15-133.5	<p>In areas outside the regulatory floodway but within the flood plain, maximum flow depths on new parking lots shall not exceed one foot during the base flood condition and shall be designed for protection against physical flood damages. Flood hazard in parking areas below the base flood elevation shall be clearly posted.</p>	<p>No change. In areas outside the regulatory floodway but within the flood plain, maximum flow depths on new parking lots <i>that are used for permanent parking</i> shall not exceed one foot during the base flood condition and shall be designed for protection against physical flood damages. <i>Parking areas that are used solely for the purpose of overflow parking shall be allowed flood depths greater than one foot.</i> Flood hazard in parking areas below the base flood elevation shall be clearly posted.</p>
15-133.6	<p>New structures other than buildings shall either be elevated to at least one foot above the base flood elevation or designed for protection against physical flood damages. Floodproofing devices shall be operational without human intervention. If electricity is required for protection against flood damage, then there must be a backup power source that will activate without human intervention. The floodproofing shall be certified by a professional engineer.</p>	<p>New structures other than buildings shall either be elevated to at least <i>one?</i> foot above the base flood elevation or designed for protection against physical flood damages. Floodproofing devices shall be operational without human intervention. If electricity is required for protection against flood damage, then there must be a backup power source that will activate without human intervention. The floodproofing shall be certified by a professional engineer.</p>
	<p>New or expansion of existing manufactured home parks or subdivisions and placement of manufactured homes not in existing manufactured home parks or subdivisions shall require that:</p> <p>a. All stands or pads shall be elevated to or above the base flood elevation; and</p>	

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15-133.7	<p>b. Adequate access and drainage shall be provided; and</p> <p>c. If pilings are used for elevation, applicable design and construction standards for pilings shall be met; and</p> <p>d. Anchoring shall be accomplished in accordance with the rules and regulations for the Illinois Mobile Home Tie-Down Act issued pursuant to 77 Ill. Adm. Code § 870 to resist flotation, collapse, and lateral movement.</p>	No change.
15-133.8	<p>Parked recreational vehicles shall be required to meet the elevation and anchoring requirements of Section 15-133.7 unless:</p> <p>a. They are on site for fewer than 180 consecutive days; and,</p> <p>b. They are fully licensed and ready for highway use. A recreation vehicle is ready for highway use if it is on its wheels and/or jacking system, is attached to the site only by quick disconnect type utility and service devices, and has no permanently attached additions.</p>	No change.
15-133.9	Existing structures shall not be enlarged, replaced, or structurally altered unless the changes meet the requirements for development. If the changes constitute substantial improvement to a building in the flood plain, then the entire building shall meet the requirements for development.	No change.
15-133.10	Existing structures may be floodproofed. Floodproofing shall meet the requirements listed in Section 15-133(2) for development in the flood plain and be operational without human intervention. If electricity is required, then there must be a backup power source that will activate without human intervention. The floodproofing shall be certified by a professional engineer.	No change.
15-133.11	<p>Any placement of fill, structures, or other materials above grade in the flood plain shall require compensatory storage equal to at least 1.5 times the volume of flood plain storage displaced and shall be provided at the same incremental flood frequency elevation as the flood storage displaced.</p> <p>Compensatory storage shall be operational prior to placement of fill, structures, or other materials in the regulatory flood plain. Grading in Special Management Areas shall be done in such a manner that the existing flood plain storage is maintained at all times. Compensatory storage is not required for flood protection of existing buildings for flood plain volume displaced by the building and within the area of 10 feet adjacent to the building.</p>	<p>Any placement of fill, structures, or other materials above grade in the flood plain shall require compensatory storage equal to at least 1.5 times the volume of flood plain storage displaced and shall be provided incrementally between the 0 - 10-year and the 10 - 100-year flood recurrence intervals. Compensatory storage for fill in depressional storage areas shall be provided non-incrementally at a ratio of 1:1.</p> <p>Compensatory storage shall be operational prior to placement of fill, structures, or other materials in the regulatory flood plain. Grading in Special Management Areas shall be done in such a manner that the existing flood plain storage is maintained at all times. Compensatory storage is not required for flood protection of existing buildings for flood plain volume displaced by the building and within the area of 10 feet adjacent to the building.</p>
15-133.12	A copy of an application for a CLOMR, CLOMA, LOMA, or LOMR including all the required information, calculations, and documents shall be submitted to the Department concurrent with the application to FEMA or OWR or its designee.	No change.
15-133.13	No filling, grading, dredging, or excavating which changes the base flood elevation, base flood flow rate or the floodway boundary shall take place until a CLOMR is issued by FEMA.	In accordance with FEMA and State regulations, a CLOMR shall be required for any project that either: (1) revises the regulatory floodway boundary or (2) encroaches upon a floodplain without an established floodway and causes an increase of 0.1 feet or more.
15-133.14	If a LOMR is required by FEMA, no building construction shall take place until the LOMR is received.	In accordance with NFIP Regulations, a building permit shall not be issued until a LOMR is issued by FEMA.
15-133.15	Any fill required to elevate a building must extend at least 10 feet beyond the foundation before the grade slopes below the highest base flood elevation.	Any fill required to elevate a building must follow the guidelines contained in FEMA Technical Bulletin 10-01.
15-133.16	<p>When a structure is elevated by some means other than filling in the regulatory flood plain:</p> <p>a. The useable space of any building, the bottom of the lowest structural member of the first finished floor (lowest habitable floor), and all electrical, heating, ventilating, plumbing, and air conditioning equipment shall be located at least one foot above the highest base flood elevation; and</p> <p>b. Elevation can be accomplished using stilts, piles, walls, or other foundations. Areas below the lowest floor that are subject to flooding shall be designed so that hydrostatic forces on exterior walls are automatically equalized by allowing for the entry and exit of floodwaters and shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as currents, waves, ice, and floating debris. Designs for meeting this requirement shall be prepared, signed, and sealed by a structural engineer or architect and meet or exceed the following minimum criteria:</p> <p>(1) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding; and</p> <p>(2) The bottom of all openings shall be no higher than one foot above grade; and</p> <p>(3) Openings may be equipped with screens, louvers, valves, or other coverings or devices, provided that such coverings and devices do not impede the automatic entry and exit of floodwaters; and</p> <p>(4) The grade interior to the foundation of the structure shall not be more than 2 feet below the lowest adjacent exterior grade; and</p> <p>(5) An adequate drainage system must be installed to remove floodwaters from the area interior</p>	No change.

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	to the structure foundation within a reasonable period of time after the floodwaters recede. c. All materials and structures less than one foot above the base flood elevation shall be resistant to flood damage.	
15-133.17	Existing flood storage that is lost due to channel modification shall require compensatory storage.	Existing flood storage that is lost due to channel modification shall require compensatory storage <i>at a 1:1 ratio</i> .
15-133.18	Any removal, replacement, or modification of stormwater facilities that has an existing hydraulic impact shall provide a watershed benefit and shall require compensatory storage to mitigate for any potential increases in flow or flood elevations. All structures and their associated low entry elevations within the created backwater of the existing stormwater facility shall be identified.	Any removal, replacement, or modification of stormwater facilities that has an existing hydraulic impact shall provide a watershed benefit. <i>For projects that provide a watershed benefit through water quality improvements, compensatory storage shall be required to mitigate for any potential increases in flows or flood elevations</i> . All structures and their associated low entry elevations within the created backwater of the existing stormwater facility shall be identified.
15-133.19	The release rate from new or modified storm sewer outfalls shall meet the requirements of Section 15-114.2 of this Ordinance or demonstrate compliance with Section 15-112.	Remove this.
15-133.20	On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.	No change.
15-133.21	Sanitary sewer systems and water distribution systems shall be designed to minimize or eliminate infiltration or inflow of flood waters and discharge of sewage.	Remove this.
15-133.22	Hydrologic and hydraulic impacts of developments located in the regulatory floodway shall be evaluated using the applicable regulatory model and confirmed using Watershed Plan models, if available, or models meeting the Plan standards for watershed planning. The hydrologic and hydraulic impacts of development shall be evaluated using events representing the frequency range from 50 percent (2-yr) to one percent (100-yr) probability of being equalled or exceeded in a given year. The results of any such evaluation shall be submitted to the Department.	Hydrologic and hydraulic impacts of developments located in the regulatory floodway shall be evaluated using the <i>appropriate model as described in the following hierarchy:</i> 1) <i>FEMA approved floodplain study model</i> 2) <i>Watershed Plan Models</i> 3) <i>Project specific model using a FEMA-approved model.</i> <i>Only one model from the above hierarchy shall be used to evaluate the hydrologic and hydraulic impacts of proposed developments.</i>
15-133.23	Any proposed development in the regulatory floodway shall evaluate the hydrologic and hydraulic impacts for existing and any future planned watershed conditions.	Any proposed development in the regulatory floodway shall evaluate the hydrologic and hydraulic impacts for <i>post-project</i> conditions.
15-133.24	In the regulatory floodway portion of the regulatory flood plain, all of the requirements of this Section 15-133 shall apply to any proposed development, and only the following appropriate uses shall be considered for permits: a. Bridges, culverts, and associated roadways, sidewalks, and railways, necessary for crossing over the floodway or for providing access to other appropriate uses in the floodway and any modification thereto; and b. At or below grade trail systems; and c. Regulatory floodway regrading, without fill, to create a positive slope toward a watercourse; and d. Floodproofing activities to protect existing structures; and e. Stormwater facilities relating to the control of drainage or flooding; and f. Above-ground and below-ground utilities and sanitary and storm sewer outfalls; and g. The storage and conveyance of floodwaters; and h. Erosion control structures and water quality and habitat structures; and i. Recreational boating and commercial shipping facilities.	Add these appropriate uses from IDNR-OWR: j- Detached garages, storage sheds, or other non-habitable accessory buildings that will not block flood flows nor reduce floodway storage; k. Open space and 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
15-133.25	Transition sections within the regulatory floodway are required for the calculation of effective conveyance including the modification and the replacement of existing bridge and culvert structures, or to compensate for lost conveyance for other appropriate uses. The following ratios shall be used to calculate transition sections: a. Water will expand no faster than one foot horizontal for every four feet of flooded stream length. b. Water will contract no faster than one foot horizontal for every one foot of flooded stream length. c. Water will not expand or contract faster than one foot vertical for every 10 feet of flooded stream length.	No change.

Additional Items:

1. Projects meeting the following criteria shall be exempt from the hydrologic and hydraulic modeling requirements set forth in the Ordinance:
 - a. A project that is located in the regulatory floodplain but is located entirely outside of the regulatory floodway.
 - b. The construction of an at-grade pedestrian path located within the regulatory floodway, provided the proposed project meets the following requirements:
 - i. The project must have an at-grade intention, with a balance of cut and fill at each cross-section. Net cut over the length of the project is acceptable.
 - ii. The maximum width of the proposed path is twelve (12) feet or less.
 - c. The construction of a public safety feature, such as a pedestrian bridge railing or a guard rail for a roadway, provided the proposed ~~construction~~ public safety feature does not result in a loss of 10% or more of the existing ~~conveyance~~ cross-sectional area.
2. For channels and depressional areas that are not currently mapped as regulatory floodplain, a site specific BFE will be required if any of the following conditions apply:
 - a. Channel with a tributary area greater than 100 acres.
 - b. Depressional storage area with greater than 20 acres of tributary area.

The site-specific BFE will be based on the results of a ~~critical duration~~ analysis performed using a FEMA-accepted model. *If the chosen model is not FEQ, the BFE shall be based on the critical duration.* For unmapped areas with greater than one square mile of tributary area, the site-specific BFE analysis shall be submitted to IDNR-OWR *or their designee* for approval. Compensatory storage requirements contained in Section 15-133.11 shall apply to any fill placed within the site specific floodplain for any channel or depressional storage area.

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3. The maximum allowable increase in flood elevation is 0.1 feet for proposed developments that encroach on the regulatory floodplain. The allowable flood elevation increase shall apply to all events up to the base flood storm event.
4. For bridge and culvert replacements within the regulatory floodway, no floodway analysis shall be required provided it can be demonstrated that the pre- and post-construction BFE is unchanged.
5. For proposed developments that require a floodway construction permit, the County has been delegated the authority to issue floodway construction permits on behalf of IDNR-OWR. However, a permit application must still be submitted to IDNR-OWR. The County does not have delegated authority for specific types of permitting, including:
 - a. Permitting of projects undertaken by federal or state agencies including those that are funded, planned, or designed by federal or state agencies.
 - b. Permitting of projects undertaken by DEC including those in which DEC is involved in the planning or design.
 - c. Permitting of jurisdictional dams.
 - d. Permitting of work in public bodies of water.
 - e. State approval of new or revised regulatory floodway limits or regulatory flood profiles.
 - f. State certification of flood discharges.
 - g. State approval of base flood elevations (BFE) determinations where no regulatory BFE's currently exist and the drainage area of the watercourse is one square mile or greater.
6. A general permit can be issued to proposed minor projects within the regulatory floodway that meet the criteria of IDNR-OWR Regional Permit No. 3.
- ~~7. Non-habitable accessory structures to single family residences, such as detached garages, attached garages, and sheds, may be constructed with the lowest floor at or above the BFE. Non-habitable accessory structures located within the regulatory floodway must meet IDNR-OWR Appropriate Use criteria.~~
8. If an approved FEQ watershed plan model has been completed for the study area and the flood of record produces a higher elevation than the regulatory BFE, the flood of record elevation from FEQ shall be used, plus one foot, as the FPE.

FEQ Modeling Guidelines:

1. Only the following FEQ unsteady flow hydraulic models will be used to evaluate a project:
 - Models that have been reviewed and approved by FEMA
 - Approved watershed plan models

No other FEQ models should be considered for use in the permitting of a proposed project.
2. Only projects that have activity occurring within the regulatory floodway will be evaluated using the FEQ model. If the proposed project is located wholly within the flood fringe, then no FEQ modeling would be required.
3. Projects involving the at-grade construction of a trail would not require the use of the FEQ model.
4. Projects consisting wholly of stream bank stabilization will not require the use of the FEQ model provided that the cut and fill portions of the project are balanced, as detailed in the revised stream bank stabilization requirements.
5. Projects replacing an existing culvert with a culvert of identical size and material will not require the use of the FEQ model.
6. Use of the FEQ model to evaluate indirect impacts to wetlands will only be completed for wetland areas that are located within the 100-year recurrence interval floodplain.
7. Evaluation of the results of the FEQ model will use the following thresholds to determine no adverse impact:
 - There will be no increase in elevation for any storm event greater than 0.1'. If this threshold is exceeded, a determination of whether there are less than 5% of the total number of storms included in the simulation shall have an increase of less than 0.25' and are not within the largest 10 storm events by elevation, a project will be determined to have no adverse impact.
 - No increase in flow greater than 10%.
 - No increase in velocity greater than 10%, unless there is either protection to prevent erosion or evidence that the proposed velocity will be non-erosive.

Definitions:

1. Flood Protection Elevation (FPE) - The elevation of the Base Flood Elevation (BFE) plus one foot of freeboard. If an approved FEQ watershed plan model produces a higher elevation than the regulatory BFE, the FPE shall be the FEQ flood of record elevation plus one foot of freeboard.