COLLIN COUNTY

FLOODPLAIN MANAGEMENT REGULATIONS

Approved by the Collin County Commissioners Court on: XX

Court Order Number: XX

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COLLIN COUNTY FLOODPLAIN MANAGEMENT REGULATIONS

1.01 DEFINITIONS

For the purpose of these Regulations, the following terms, phrases, words and their derivations shall have the meaning given herein. Definitions not expressly prescribed herein are to be determined in accordance with customary usage in planning and engineering practice. The word “shall” is mandatory and the word “may” is permissive.

100-YR STORM EVENT – the rainfall event having a 1 percent chance of being equaled or exceeded in any given year.

ADVERSE IMPACT - changes to drainage patterns, flooding, erosion, and water quality on adjacent property caused by development of a property.

ADJACENT – Where used in these Regulations, “adjacent” shall mean the area between the Special Flood Hazard Area (SFHA) and the contour representing an elevation 2 feet above the Base Flood Elevation (BFE) in the case of Zone AE, or the contour that follows the SFHA in the case of Zone A.

ATTENDANT UTILITY – any utility that accompanies a structure, including, but not limited to ductwork, electrical, mechanical, plumbing, and heating and cooling.

APPLICANT – an Owner or Developer who seeks approval of a floodplain development proposal pursuant to these Regulations.

APPURTENANT STRUCTURE – a structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure.

AREA OF FUTURE CONDITIONS FLOOD HAZARD – the land area that would be inundated by the 100-yr storm event based on fully developed watershed hydrology.

AREA OF SHALLOW FLOODING – a designated AO, AH, AR/AO, or AR/AH zone on a Community's Flood Insurance Rate Map (FIRM) with a 1 percent or greater annual chance of flooding to an average depth of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

BASE FLOOD – the flood having a 1 percent chance of being equaled or exceeded in any given year. Also, the flood resulting from the 100-yr storm event.

BASE FLOOD ELEVATION (BFE) – the Water Surface Elevation (WSEL) resulting from the 100-yr storm event, even if located outside of Special Flood Hazard Areas (SFHAs). The BFE is used to delineate the base flood in plan view. The BFE may be calculated by the Applicant’s Engineer or as shown on the FEMA Flood Insurance Rate Map (FIRM) and found in the accompanying Flood Insurance Study (FIS) for Zones A, AE, or AH for Collin County. The BFE shall be in relation to the datum specified in the FIS for Collin County.

BASEMENT – any area of the building having its floor below ground level on all sides.

COMMUNITY – a political entity that has the authority to adopt and enforce floodplain ordinances for the area under its jurisdiction.

CONDITIONAL LETTER OF MAP REVISION (CLOMR) – 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 regulatory floodway, the effective BFEs, or the Special Flood Hazard Area (SFHA). The letter does not revise an effective National Flood Insurance Program (NFIP) map, it indicates whether the project, if built as proposed, would be recognized by FEMA.

COUNTY – Collin County, Texas.

CRITICAL FEATURE – an integral and readily identifiable part of a flood protection system, without which the flood protection provided by the entire system would be compromised.

DEVELOPER – any person, partnership, firm association, corporation (or combination thereof), or any officer, agent, employee, servant or trustee thereof, who performs or participates in the performing of any act toward the development of a subdivision, within the intent, scope and purview of these Regulations.

DEVELOPMENT – all land modification activity, including the grading or construction of buildings, roadways, parking lots and/or other impervious structures or surfaces.

DIRECTOR OF ENGINEERING – where used in these Regulations, “Director of Engineering” shall mean the Collin County Director of Engineering and their authorized and/or appointed representatives.

DRAINAGE PLAN – a plan for handling stormwater affecting existing and proposed property and/or roadways due to development, including water surface elevations, floodplains, velocities, and mitigation measures. Drainage plans include all areas handling stormwater, including Special Flood Hazard Areas (SFHAs).

ELEVATED BUILDING – a non-basement building, which has its lowest elevated floor, raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

ENGINEER – a person licensed under the provisions of the Texas Engineering Registration Act to practice the profession of engineering in the State of Texas.

EXISTING CONDITIONS WATERSHED – the watershed or drainage area at the time the Applicant submits a request for permit or plat approval.

EXISTING CONSTRUCTION – structures for which the "start of construction" commenced before the effective date of the initial Flood Insurance Rate Map (FIRM) or before January 1, 1975, for FIRMs effective before that date. "Existing construction" may also be referred to as "existing structures."

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 (including, at a minimum, the installation of utilities, the construction of roadways, and either final site grading or the pouring of concrete pads) is completed before the effective date of these Regulations.

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

FEMA – Federal Emergency Management Agency.

FLOOD OR FLOODING – a general and temporary condition of partial or complete inundation of normally dry land areas from:

(1) the overflow of inland waters.

(2) the unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD INSURANCE RATE MAP (FIRM) – an official map of a Community, on which FEMA has delineated both the Special Flood Hazard Areas (SFHAs) and the risk premium zones applicable to the Community.

FLOOD INSURANCE STUDY (FIS) – the official report provided by FEMA that contains flood profiles, water surface elevation of the base flood, as well as the Flood Insurance Rate Map (FIRM).

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

FLOOD STUDY – an examination, evaluation and determination of flood hazards and corresponding design flows, water surface elevations, floodplains, and velocities. Flood studies, when used herein, are associated with analysis to determine Base Flood Elevations (BFEs).

FLOODPLAIN OR FLOOD-PRONE AREA – any land area susceptible to being inundated by water from any source. A floodplain is a plan view depiction of the extent of flooding based on calculated water surface elevations.

FLOODPLAIN ADMINISTRATOR – an individual responsible for enforcing these Regulations.

FLOODPLAIN MANAGEMENT – the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

FLOODPLAIN MANAGEMENT REGULATIONS – State or Local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

FLOODWAY – see Regulatory Floodway

FULLY DEVELOPED WATERSHED – the watershed or drainage area at full build-out based on the best available information for planned future land use.

HIGHEST ADJACENT GRADE – the highest natural elevation of the ground surface next to the proposed walls of a structure.

HISTORIC STRUCTURE – any structure that is:

(1) Listed individually in the Department of Interior's 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;

(2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

(3) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or

(4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:

(a) By an approved state program as determined by the Secretary of the Interior or;

(b) Directly by the Secretary of the Interior in states without approved programs.

LETTER OF MAP AMENDMENT (LOMA) – FEMA's comment or official letter of an amendment to the currently effective FEMA Flood Insurance Rate Map (FIRM) which established that a structure or group of structures is not located in a Special Flood Hazard Area (SFHA) as shown on the FIRM. A LOMA is issued only by FEMA.

LETTER OF MAP REVISION (LOMR) – FEMA's modification to an effective FEMA Flood Insurance Rate Map (FIRM). LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective base flood elevations, or the Special Flood Hazard Area (SFHA). The LOMR officially revises the FIRM, and sometimes the Flood Insurance Study (FIS), and when appropriate, includes a description of the modifications. The LOMR is generally accompanied by an annotated copy of the affected portions of the FIRM or the FIS. A LOMR is issued only by FEMA.

LETTER OF MAP REVISION – FILL (LOMR-F) – FEMA's modification of the Special Flood Hazard Area (SFHA) shown on the FEMA Flood Insurance Rate Map (FIRM) based on the placement of fill outside the existing regulatory floodway. A LOMR-F is issued only by FEMA.

LOWEST FLOOR – the lowest floor of the lowest enclosed area (including basements). An unfinished or flood resistant enclosure, usable solely for parking or vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirement of Section 60.3 of the National Flood Insurance Program regulations.

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

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

MEAN SEA LEVEL – the North American Vertical Datum (NAVD) of 1988 or other datum, to which Base Flood Elevations (BFEs) shown in the Collin County Flood Insurance Study (FIS) are referenced.

NATURAL CREEK – a small body of flowing water, generally shallow in depth and flowing into a larger body of water. This may be represented by a blue line on a USGS topographic map but the absence of a blue line does not necessarily mean a natural creek does not exist.

NEW CONSTRUCTION – structures for which the "start of construction" commenced on or after the effective date of an initial FEMA Flood Insurance Rate Map (FIRM) or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures.

NEW 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 (including at a minimum, the installation of utilities, the construction of roadways, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of these Regulations.

OWNER – the owner of record of the land subject to these requirements.

PERMIT – a permit obtained through the Collin County Development Services Department and is required for all development inside and outside a Special Flood Hazard Area (SFHA). A permit may require a Flood Study if deemed necessary by these regulations.

REACH – a section of a stream or river along which similar hydrologic conditions exist.

RECREATIONAL VEHICLE – a vehicle which is built on a single chassis, 400 square feet or less when measured at the largest horizontal projections, designed to be self-propelled or permanently towable by a light duty truck, and designed primarily as temporary living quarters for recreational, camping, travel, or seasonal use. Where used in these Regulations, “recreational vehicle” refers to recreational vehicles in use, not in storage.

RECREATIONAL VEHICLE PARK – A tract or parcel of land upon which two or more spaces are provided, leased, rented, or offered for occupancy by recreational vehicles.

REGULATORY FLOODWAY – the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

RIVERINE – relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

SINGLE-FAMILY RENTAL DEVELOPMENT – A development consisting of detached single-family residential dwelling units intended primarily for lease or rental occupancy and developed under common ownership.

SPECIAL FLOOD HAZARD AREA (SFHA) – the land in the floodplain subject to a 1 percent or greater chance of flooding in any given year. Areas of special flood hazard are depicted on the Collin County FIRM as Zones A, AO, AH, or AE.

START OF CONSTRUCTION – the date the building permit was issued, provided the actual start of construction or substantial improvement, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the placement of a manufactured home on a foundation or the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation. Permanent construction does not include land preparation (clearing, grading, filling, etc.) or the installation of roadways and/or walkways. It also does not include the excavation or erection of temporary forms for basements, footings, piers or foundations or the installation of accessory buildings (such as garages or sheds) not occupied as dwelling units or not part of the main structure. For a substantial improvement, the 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.

STRUCTURE – for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank or a manufactured home, that is principally above ground.

SUBSTANTIAL DAMAGE – damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

SUBSTANTIAL IMPROVEMENT – any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions. This term also does not include any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure."

SURVEYOR – a person licensed under the provisions of the Texas Professional Land Surveying Practices Act to practice the profession of surveying in the State of Texas.

VALLEY STORAGE – a measure of the volume capacity within a floodplain.

VARIANCE – a grant of relief from the terms of these Regulations. (For full requirements see Section 60.6 of the National Flood Insurance Program regulations.)

VIOLATION – the failure of a structure or other development to be fully compliant with these Regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Title 44 of the Code of

Federal Regulations (CFR) Part 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) is presumed to be in violation until such time as that documentation is provided.

WATER SURFACE ELEVATION (WSEL) – the height, in relation to the datum shown in the FIS for Collin County, of floods of various magnitudes and frequencies.

ZONES – Geographical areas shown on a Flood Insurance Rate Map (FIRM) that reflect the severity of type of flooding in the area. Zones that begin with the letter “A” are considered Special Flood Hazard Areas (SFHA). Example zone designations and their meanings are shown below.

Zone A	Areas of the 100-yr riverine flood where base flood elevations have not been determined.
Zone AE	Areas of the 100-yr riverine flood where base flood elevations have been determined and are shown on the FEMA Flood Insurance Rate Map (FIRM) and in the Flood Insurance Study (FIS).
Zone AH	Areas of the 100-yr flood where base flood elevations are shown and the depths of ponding are between 1.0 and 3.0 feet.
Zone AO	Areas of the 100-yr flood where average depths of inundation are determined and the depths of sheet flow are between 1.0 and 3.0 feet.
Zone X	(Shaded): Areas of the 500-yr flood, areas of the 100-yr flood with average depths of less than 1.0 foot or with drainage areas less than 1 square mile, and areas protected by levees from the 100-yr flood. (Unshaded): Areas determined to be outside both the 100-yr and 500-yr floodplains.

1.02 GENERAL REQUIREMENTS

A. The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Collin County, Texas and incorporated areas," dated November 21, 2024, with accompanying flood insurance rate maps dated November 21, 2024, and any revisions thereto are hereby adopted by reference and declared to be a part of this article.

B. All development and new construction within the FEMA designated floodplain will require review, permitting and approval by the Director of Engineering. A Flood Study may be required with the permit. A pre-development meeting may be scheduled to discuss Flood Study requirements.

C. All storm events shall be studied. This includes the 2, 5, 10, 25, 50 and 100-yr storm events.

D. Land in a floodplain subject to flooding as a result of the 100-yr storm event may be reclaimed provided that in all storm events:
   1. There is no increase in the WSEL;
   2. Non-erosive velocities are maintained;
   3. Channel stability in the reach being reclaimed is not adversely impacted; and,
   4. An equivalent volume of valley storage is provided in the same reach as the proposed development.

E. Increases in the floodplain WSEL may be considered only when the floodplain area experiencing the increase is wholly contained within the subject property.

F. Alterations of the floodplain that increase the WSEL of any flood are subject to the adverse impacts requirements of the Collin County Drainage Design Standards.

G. Adverse impacts shall not be allowed within the County. Adverse impacts take place when the actions of one property owner adversely affects the rights of another property owner. Adverse impacts can be measured in terms of increased flood peaks, increased flood stages, higher flood velocities, increased erosion and sedimentation, degradation of stormwater quality, or other impacts the County considers important. Adverse impact management helps the Developer and County identify the potential impacts of development on public and private property and implement action to mitigate them before the damages occur.

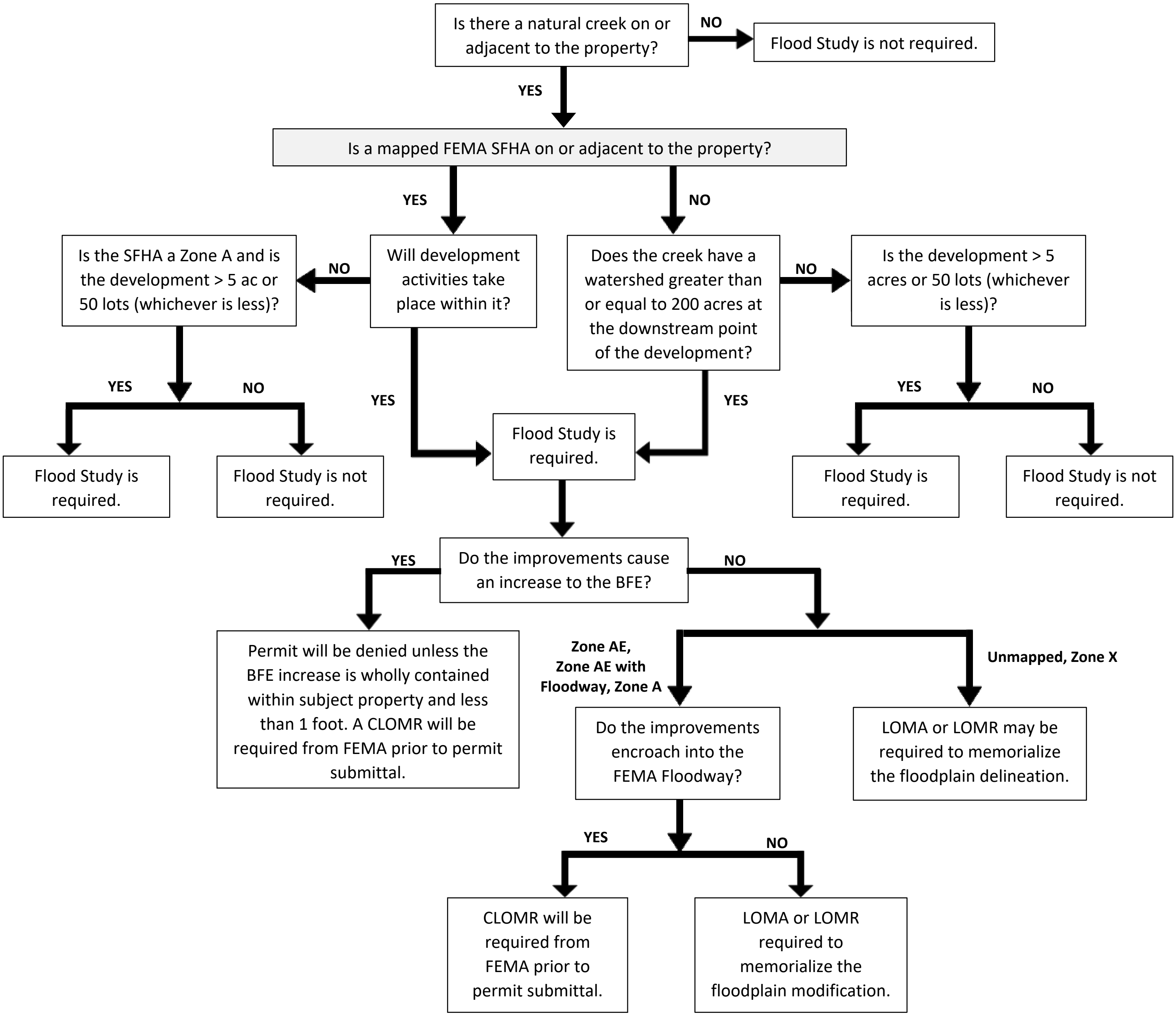
H. Velocities throughout the channel must be analyzed for all storm events to ensure that any new fill and grading is protected.

I. Velocities in the post-developed condition shall be less than 5 feet per second. If velocities exceed 5 feet per second, only a 5% increase from the existing condition velocity can occur without a certified geotechnical/geomorphologic study being submitted providing documentation that a higher velocity will not increase erosion.

J. Decreases in valley storage may be considered only in situations where no adverse impacts are evident and where creating valley storage may result in the loss of environmentally sensitive areas.

K. The flowchart in Figure 1.02-1 shall be followed when developing in or near any floodplain.

Figure 1.02-1. Floodplain Development Process In or Near Streams/Floodplains



Note: Downstream Evaluations may be required as detailed in the Collin County Drainage Standards, including when Flood Studies are not required.

Note: Base Flood Elevations for non-mapped streams must be determined in accordance with the Collin County Drainage Standards.

Note: For purposes of this section, recreational vehicle spaces, manufactured home spaces, and single-family rental units shall be treated as lots.

1.03 FLOODPLAIN ADMINISTRATION

A. Designation of the Floodplain Administrator
The Collin County Director of Engineering is appointed the Floodplain Administrator to administer and implement the provisions of these Regulations and other appropriate sections of Title 44 of the Code of Federal Regulations (CFR) pertaining to floodplain management. The Floodplain Administrator shall appoint a qualified person to review all permit applications and approve any such permits in the absence of the administrator.

B. Duties & Responsibilities of the Floodplain Administrator
Duties and responsibilities of the Floodplain Administrator shall include, but not be limited to, the following:
1. Maintain and hold all records pertaining to the provisions of this order open for public inspection;
2. Review permit applications to determine whether a proposed building site, including the placement of manufactured homes or recreational vehicles, will be reasonably safe from flooding;
3. Review and approve or deny all applications for permits required by adoption of this order;
4. Review permits for proposed development to assure that all necessary permits have been obtained from the Federal, State, or local governmental agencies (including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1344) from which prior approval is required;
5. Where interpretation is needed to determine the exact location of the boundaries of SFHAs (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), the Floodplain Administrator shall make the necessary interpretation, which may require the Owner to apply for a LOMA or LOMR from FEMA;
6. Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained;
7. When BFE data has not been defined on the FIRM, the Floodplain Administrator shall review and approve the BFE determined by the Flood Study provided by the Owner, Developer, or Applicant;
8. When a regulatory floodway has not been designated, the Floodplain Administrator must require that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A and AE on the Community's FIRM, unless it is demonstrated that the proposed development will not increase the WSEL of the base flood within the Community, unless the increase is fully contained within the subject property and less than 1 foot;
9. Review all proposed development applications to determine whether such proposals will be reasonably safe from flooding;
10. Require that new and replacement water supply and sanitary sewage systems within SFHAs be designed to minimize or eliminate infiltration of flood waters into the systems, and that discharges from the systems into flood waters and onsite

waste disposal systems be located to avoid impairment to them or contamination from them during flooding;

11. Require proposed development (including the construction of a structure) to obtain a LOMA or LOMR prior to filing a final plat and/or obtaining a building permit, when appropriate (see Section 1.02, Figure 1.02-1); and
12. Require proposed development to obtain a conditional letter of map revision (CLOMR) prior to any construction in a Zone AE SFHA. After such construction, a formal LOMR shall be required.
13. Facilitate the Request for Variance process:
    a. A person or persons desiring to obtain a variance from any requirement of these Regulations or applicable statute must submit a detailed Request for Variance.
    b. The request must cite the specific Regulation, provision, and/or statute from which the variance is sought, and must include detailed reasons for the Variance.
    c. The Collin County Commissioners Court shall hear and render judgement on Requests for Variances from the requirements of these Regulations.
    d. The Collin County Commissioners Court shall hear and render judgement on an appeal only when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement or administration of these Regulations.
    e. Any person or persons aggrieved by the decision of the Collin County Commissioners Court may appeal such decision in the courts of competent jurisdiction. The appeal under this section must be filed within ten (10) business days from the date of the Collin County Commissioners Court order in which the decision is rendered.
    f. The Floodplain Administrator shall maintain a record of all actions involving an appeal and shall report variances to the Federal Emergency Management Agency upon request.
    g. Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of these Regulations. However, such variances for the repair or rehabilitation of historic structures shall be based upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
    h. Variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures

constructed below two feet above the base flood level, providing the relevant factors in Section 1.05.C of these Regulations have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.

i. Upon consideration of the factors noted above and the intent of these Regulations, the Collin County Commissioners Court may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of these Regulations.
j. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result, including but not limited to, the base flood water surface elevation.
k. Prerequisites for granting variances:
    i. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
    ii. Variances shall only be issued upon:
        1. showing a good and sufficient cause;
        2. a determination that failure to grant the variance would result in exceptional hardship to the applicant; and
        3. a determination that the granting of a variance will not result in increased 'flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws, other regulations, or ordinances.
    iii. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with the lowest floor elevation below two feet above the base flood elevation, based on fully developed watershed conditions (if available) and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
l. Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that:
    i. The criteria outlined in these Regulations are met; and
    ii. The structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

1.04 FLOOD STUDY REQUIREMENT

Figure 1.02-1 shall be used to determine if a Flood Study is required when developing in or near streams and/or floodplains. If a Flood Study is required, the Owner shall be responsible for providing a Flood Study which enables the County Floodplain Administrator to review and reproduce the results of the hydrologic and hydraulic model. The Applicant shall provide the following Flood Study Administrative Review Checklist with their submittal.

COLLIN COUNTY FLOOD STUDY ADMINISTRATIVE REVIEW CHECKLIST	
Project Name:	**Date:**
Project Location:	
Engineering Firm:	
Engineering Firm Contact (Name and Number):	
Creek/Waterway Encroached:	
GENERAL	**Please check or N/A**
Floodplain Reclamation | No Floodplain Reclamation (circle one)	
Project Description	
Project Purpose	
Table of Contents	
Conclusion/Summary	
Stamp/Seal/Firm #	
All electronic data submitted (HEC-HMS, HEC-RAS, PondPack, Excel, etc.)	
HYDROLOGY	
Unit Hydrograph Methodology Used	
Drainage Area Map	
Runoff Coefficients/Curve Numbers	
Time of Concentration	
Intensity Values for Peak Event	
Summary of Peak Discharges	
Pre and Post-Project Conditions (2, 5, 10, 25, 50 and 100-yr Storm Events)	
HYDRAULICS	
Hydraulic Methodology Used	
Channel Sections	
N-Values	
Contraction/Expansion Coefficients	
Ineffective Flow Limits	
Summary of Results	
Pre and Post-Project Comparisons (2, 5, 10, 25, 50 and 100-yr Storm Events)	
Water Surface Elevation	
Velocity	
Valley Storage	
SUPPORTING DOCUMENTS	
Location Map	
FIRM Map	
Proposed Grading Plan (include acreage of property and acreage developed)	
Work Map	
Floodplain and Floodway delineated within limits of study	
Channel sections provided within limits of study	
Channel Cross Sections (Pre and Post-Project)	
Hydrologic & Hydraulic Models (HEC-HMS, HEC-RAS)	

1.05 FLOOD HAZARD REDUCTION

A. General Standards

In all flood-prone areas, the following provisions are required for all new construction and substantial improvements:

1. Residential structures, manufactured homes, and pad sites for recreational vehicles shall not be placed within the 100-yr floodplain;
2. A LOMA or LOMR (issued by FEMA) is required prior to building construction to show that any residential structures, manufactured homes, and recreational vehicles will not be within an SFHA upon completion of construction;
3. All structures shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
4. Construction shall be by methods and practices that minimize flood damage;
5. All materials used shall be resistant to flood damage;
6. All equipment used for electrical, heating, ventilation, plumbing, air conditioning and other service facilities shall be designed and/or located to prevent water from entering or accumulating within the components during conditions of flooding;
7. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
8. All new and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the systems into flood waters; and
9. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

B. Specific Standards

In all flood-prone areas, the following provisions are required:

1. Residential Construction
   a. Permit required.
   b. New residential construction is not allowed in an SFHA. A LOMA or LOMR (issued by FEMA) is required to show that any residential construction proposed in an existing SFHA will be removed from the SFHA upon completion of construction.
   c. The lowest floor (including basements) of any new residential construction adjacent to an SFHA shall be elevated a minimum of 2 feet above the BFE.
   d. Substantial improvement of any residential structure located in an SFHA built before the adoption of these Regulations shall have the lowest floor (including basements) elevated a minimum of 2 feet above the BFE.
   e. For residential construction adjacent to an SFHA, an Engineer or Surveyor shall submit proposed lowest floor elevations with permit or plat application to the Floodplain Administrator.
2. Nonresidential Construction
   a. Permit required.

b. Nonresidential construction is not permitted within an SFHA.
c. New construction and substantial improvements of any commercial, industrial or other non-residential structure shall have the lowest floor (including basements) elevated a minimum of 2 feet above the BFE.
d. An Engineer or Surveyor shall submit proposed lowest floor elevations with permit or plat application and an elevation certification upon construction of the lowest floor slab to the Flood Administrator. A record of such certification shall be maintained by the Floodplain Administrator.
e. If the revision of a SFHA is required for the nonresidential construction, proof of an approved LOMR will be required prior to obtaining the Certificate of Compliance.

3. Enclosures
   a. New construction and substantial improvements, with fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters.
   b. Designs for meeting this requirement must either be certified by an Engineer or Architect or meet or exceed the following minimum criteria:
      i. A minimum of two openings on separate walls having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
      ii. The bottom of all openings shall be no higher than one foot above grade.
      iii. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic entry and exit of floodwaters.
      iv. All utilities and common facilities including gas, electrical systems, sewage systems and water supply systems must be located and elevated or constructed to avoid or minimize flood damage.
4. Manufactured Homes, Tiny Homes, and Single Family for Rent Communities
   a. New manufactured home, tiny home, and single-family for rent sites shall not be placed within the 100-yr floodplain.
   b. Manufactured homes to be placed or substantially improved on sites in an Existing Manufactured Home Park or Subdivision with Zones AE, A, and AH shall be elevated so that either:
      i. the lowest floor of the manufactured home is a minimum of 2 feet above the BFE, or
      ii. the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to a foundation system to resist flotation, collapse, and lateral movement.
5. Recreational Vehicles
   a. New recreational vehicle parks shall not be placed within the 100-yr floodplain.

b. Recreational vehicles placed on sites within Zones AE, A, and AH shall be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices and has no permanently attached additions.

C. Standards for Developments

1. All proposals for development, including residential subdivisions, single-family rental developments, build-to-rent communities, manufactured home parks and subdivisions, recreational vehicle parks, and tiny home subdivisions or communities, shall meet the requirements of these Regulations, the Collin County Subdivision Regulations and all FEMA requirements.
2. Base flood elevation data shall be generated in accordance with FEMA requirements for situations requiring a Flood Study as determined in Section 1.02, Figure 1.02-1.
3. All development shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.
4. Notwithstanding any other provision of these Regulations, no permit will be issued if the Floodplain Administrator determines that the development will increase flood hazards.

D. Standards for Areas of Shallow Flooding (AO/AH Zones)

The SFHA may include areas designated as shallow flooding. These areas have delineated SFHAs associated with flood depths of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may not be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

1. All new construction and substantial improvements of residential structures shall have the lowest floor (including basements) elevated a minimum of 2 feet above the BFE or the highest adjacent grade at least as high as the depth number specified in feet on the Community's FIRM (at least 2 feet if no depth number is specified).
2. All new construction and substantial improvements of non-residential structures;
    a. shall have the lowest floor (including basements) elevated a minimum of 2 feet above the BFE or the highest adjacent grade at least as high as the depth number specified in feet on the Community's FIRM (at least 2 feet if no depth number is specified), or
    b. together with attendant utility and sanitary facilities, shall be designed so that below the specified base flood depth in an AO Zone, or below the base flood elevation in an AH Zone, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy.

3. An Engineer or Surveyor shall submit proposed lowest floor or waterproofing elevations with permit or plat application and an elevation certification upon construction of the lowest floor slab or waterproofing to the Floodplain Administrator.
4. Within Zones AH or AO, adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures is required.

E. Floodways

All proposed construction within the floodway will require a CLOMR. Floodway modifications shall only occur on the subject property and shall not modify the floodway on adjacent properties.

F. Penalties

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of these Regulations and other applicable regulations. Violation of the provisions of these Regulations by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person who violates this court order or fails to comply with any of its requirements shall upon conviction thereof be fined not more than $2,000.00 for each violation, and in addition, shall pay all costs and expenses involved in the case. Each day a violation occurs is a separate offense. Nothing herein contained shall prevent Collin County from taking such other lawful action as is necessary to prevent or remedy any violation.

G. Severability

In the event any article, appendix, section, paragraph, sentence, clause or phrase of these Regulations shall be declared unconstitutional or invalid by the valid judgment or decree of any court of competent jurisdiction for any reason, such declaration shall not affect any remaining part of these Regulations. It is the express intent of the Collin County Commissioners Court that the articles, appendices, sections, paragraphs, sentences, clauses or phrases of these Regulations be severable.

1.06 PROCEDURES FOR MAP CHANGES

A. Letter of Map Amendment (LOMA)

Upon the determination of an Engineer or Surveyor that the ground elevation below a structure or structures (including any basements) on a property is at an elevation greater than the base flood elevation, a property owner may apply to FEMA for a LOMA in accordance with Title 44 of the Code of Federal Regulations (CFR) Chapter 1, Part 70. Such a determination shall be based on a professional survey and/or the hydraulic, computer model (HEC-RAS) used by an Engineer to define the SFHA.

B. Letter of Map Revision (LOMR)

1. Existing structure or structures – Upon the determination of the Floodplain Administrator that the ground elevation of a property is not in accordance with the approved FIRM, a property owner may apply to FEMA for a LOMR or LOMR-F

in accordance with Title 44 of the CFR Chapter 1, Part 72. Such a determination shall be based on a professional survey and the hydraulic computer model (HEC-RAS) used by an Engineer to define the SFHA. All supporting documentation shall be submitted to the Floodplain Administrator for review and approval prior to submission to FEMA for review and approval.

2. Proposed structure or structures – Upon determination of the Floodplain Administrator that property currently indicated in an SFHA could be removed from the SFHA through modifications of the floodplain as identified on the FIRM, a property owner may apply to FEMA for a CLOMR or CLOMR-F in accordance with Title 44 of the CFR Chapter 1, Part 72. Such modifications and the determination shall be based on a professional survey and the hydraulic computer model (HEC-RAS) used by an Engineer to define the SFHA. In this instance, the property owner shall not begin construction within the existing floodplain or the area of the proposed floodplain until FEMA issues a CLOMR or CLOMR-F. Additionally, after FEMA's issuances of a CLOMR or CLOMR-F and such modifications have been completed, the property owner shall apply to FEMA for a LOMR or LOMR-F. The LOMR or LOMR-F is required prior to filing of a plat with the County Clerk or issuance of any permits associated with residential building construction. The LOMR or LOMR-F is required prior to obtaining the Certificate of Compliance following construction.