

# **FLOODPLAIN DEVELOPMENT ORDINANCE**

**DES MOINES COUNTY, IOWA**

ORDINANCE NO. 25

Original Floodplain Development Ordinance  
Adopted July 19, 1993

Current Ordinance  
Adopted October 5, 2021  
Amended November 9, 2021

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## ARTICLE I – LEGAL AUTHORITY, FINDINGS OF FACT AND PURPOSE

- A. **Legal Authority.** Chapter 331 of the *Code of Iowa* grants counties the authority, except as expressly limited by the Constitution and if not inconsistent with the laws of the General Assembly, to exercise any power and perform any function it deems appropriate to protect and preserve the rights, privileges, and property of the county or of its residents, and to preserve and improve the peace, safety, health, welfare, comfort and convenience of its residents.
- B. **Findings of Fact.**
1. The flood hazard areas of unincorporated Des Moines County are subject to periodic inundation which can result in loss of life and 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 peace, safety, health, welfare, comfort and convenience of its residents.
  2. These flood losses, hazards, and related adverse effects are caused by:
    - a) the occupancy of flood hazard areas by uses vulnerable to flood damages which create hazardous conditions as a result of being inadequately elevated or otherwise protected from flooding, and
    - b) the cumulative effect of obstructions on the floodplain causing increases in flood heights and velocities.
  3. This ordinance relies upon engineering methodology for analyzing flood hazards which is consistent with the standards established by the Department of Natural Resources.
- C. **Statement of Purpose.** It is the purpose of this ordinance to protect and preserve the rights, privileges and property of unincorporated Des Moines County and its residents, and to preserve and improve the peace, safety, health, welfare, comfort and convenience of its residents by minimizing those flood losses described in Section B(2) of this Article, with provisions designed to:
1. Reserve sufficient floodplain area for the conveyance of flood flows so that flood heights and velocities will not be increased substantially.
  2. Restrict or prohibit uses which are dangerous to health, safety, or property in times of flood or which cause excessive increases in flood heights or velocities.
  3. Require that uses vulnerable to floods, including public utilities which serve such uses, be protected against flood damage at the time of initial construction.
  4. Protect individuals from buying lands which are unsuited for intended purposes because of flood hazard.
  5. Assure that eligibility is maintained for property owners in the county to purchase flood insurance through the National Flood Insurance Program.

## ARTICLE II – GENERAL PROVISIONS

- A. **Lands to Which Regulations Apply.** The provisions of this ordinance shall apply to all lands and development which have significant flood hazards. The Flood Insurance Rate Maps (FIRMs) for Des Moines County and Incorporated Areas, as listed on FIRM Index 19057CINDOC<sup>1</sup> dated October 21, 2021, which were prepared as part of the Des Moines County Flood Insurance Study, shall be used to identify such flood hazard areas and all areas shown thereon to be within the boundaries of the base flood shall be considered as having significant flood hazards. Where uncertainty exists with respect to the precise location of the base flood boundary, the location shall be determined on the basis of the base flood elevation at the particular site in questions. The Des Moines County Flood Insurance Study is hereby adopted by reference and is made a part of this ordinance for the purpose of administering floodplain management regulations.
- B. **Compliance.** No structure or land shall hereafter be used and no structure shall be located, extended, converted or structurally altered without full compliance with the terms of this ordinance and other applicable regulations which apply to uses within the jurisdiction of this ordinance.
- C. **Abrogation and Greater Restriction.** It is not intended by this ordinance to repeal, abrogate or impair any existing easements, covenants, or deed restrictions. However, where this ordinance imposes greater restrictions, the provision of this ordinance shall prevail. All other ordinances inconsistent with this ordinance are hereby repealed to the extent of the inconsistency only.
- D. **Interpretation.** In their interpretation and application, the provisions of this ordinance shall be held to be minimum requirements and shall be liberally construed in favor of the governing body and shall not be deemed a limitation or repeal of any other powers granted by state statutes.
- E. **Warning and Disclaimer of Liability.** The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on engineering and scientific methods of study. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural cause, such as ice jams and bridge openings restricted in debris. This ordinance does not imply that areas outside the regulated areas or that uses permitted within the regulated areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Des Moines County or any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.
- F. **Severability.** If any section, clause, provision or portion of this ordinance is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of this ordinance shall not be affected thereby.

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<sup>1</sup> Amended November 9, 2021

## ARTICLE III – DEFINITIONS

A. **General.** Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

B. **Terms Defined.**

**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.

**BASE FLOOD.** The flood having one (1) percent chance of being equaled or exceeded in any given year; also commonly referred to as the “one-hundred (100) year flood”.

**BASE FLOOD ELEVATION (BFE).** The elevation floodwaters would reach at a particular site during the occurrence of a base flood event.

**BASEMENT.** Any enclosed area of a building which has its floor or lowest level below ground level (subgrade) on all sides. Also see "lowest floor".

**DEVELOPMENT.** Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations. 'Development' does not include “minor projects” or “routine maintenance of existing buildings and facilities” as defined in this section. It also does not include gardening, plowing, and similar practices that do not involve filling or grading.

**ENCLOSED AREA BELOW LOWEST FLOOR.** The floor of the lowest enclosed area in a building when all the following criteria are met:

1. The enclosed area is designed to flood to equalize hydrostatic pressure during floods with walls or openings that satisfy the provisions of Article IV, Section A(3)a of this ordinance, and
2. The enclosed area is unfinished (not carpeted, drywalled, etc.) and used solely for low damage potential uses such as building access, parking or storage, and
3. Machinery and service facilities (e.g., hot water heater, furnace, electrical service) contained in the enclosed area are located at least one (1) foot above the base flood elevation, and
4. The enclosed area is not a "basement" as defined in this section.

**EXISTING CONSTRUCTION.** Any structure for which the "start of construction" commenced before the effective date of the first floodplain management regulations adopted by Des Moines County.

**EXISTING FACTORY-BUILT HOME PARK OR SUBDIVISION.** A factory-built home park or subdivision for which the construction of facilities for servicing the lots on which the factory-built 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 before the effective date of the first floodplain management regulations adopted by Des Moines County.

**EXPANSION OF EXISTING FACTORY-BUILT HOME PARK OR SUBDIVISION.** The preparation of additional sites by the construction of facilities for servicing the lots on which the factory-built 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).

**FACTORY-BUILT HOME.** Any structure, designed for residential use; which is wholly or in substantial part, made, fabricated, formed or assembled in manufacturing facilities for installation or assembly and installation, on a building site. For the purpose of this Ordinance factory-built homes include mobile homes, manufactured homes and modular homes and also includes "recreational vehicles" which are placed on a site for greater than 180 consecutive days and not fully licensed for and ready for highway use.

**FACTORY-BUILT HOME PARK.** A parcel or contiguous parcels of land divided into two or more factory-built home lots for sale or lease.

**FIVE-HUNDRED (500) YEAR FLOOD.** A flood, the magnitude of which has a two-tenths (0.2) percent chance of being equaled or exceeded in any given year or which, on average, will be equaled or exceeded at least once every five-hundred (500) years.'

**FLOOD.** A general and temporary condition of partial or complete inundation of normally dry land areas resulting from the overflow of streams or rivers or from the unusual and rapid runoff of surface waters from any source.

**FLOOD INSURANCE RATE MAP (FIRM).** The official map prepared as part of (but published separately from) the Flood Insurance Study which delineates both the flood hazard areas and the risk premium zones applicable to unincorporated Des Moines County.

**FLOOD INSURANCE STUDY (FIS).** A report published by FEMA for a community, issued along with the community's Flood Insurance Rate map(s). The study contains such background data as the base flood discharge and water surface elevations that were used to prepare the FIRM.

**FLOODPLAIN.** Any land area susceptible to being inundated by water as a result of a flood.

**FLOODPLAIN MANAGEMENT.** An overall program of corrective and preventive measures for reducing flood damages and promoting the wise use of floodplains, including but not limited to emergency preparedness plans, flood control works, floodproofing and floodplain management regulations.

**FLOODPROOFING.** Any combination of structural and nonstructural additions, changes, or adjustments to structures, including utility and sanitary facilities, which will reduce or eliminate flood damage to such structures.

**FLOODWAY.** The channel of a river or stream and those portions of the floodplains adjoining the channel, which are reasonably required to carry and discharge flood waters or flood flows so that confinement of flood flows to the floodway area will not cumulatively increase the water surface elevation of the base flood by more than one (1) foot.

**FLOODWAY FRINGE.** Those portions of the Special Flood Hazard Area outside the floodway.

**FREEBOARD.** A factor of safety usually expressed in feet above a flood level for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, clogged bridge openings, and the hydrological effect of urbanization of the watershed.

**HIGHEST ADJACENT GRADE.** The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

**HISTORIC STRUCTURE.** Any structure that is:

1. Listed individually in the National Register of Historic Places, maintained by the Department of Interior, or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing of 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 by either i) an approved state program as determined by the Secretary of the Interior or ii) directly by the Secretary of the Interior in states without approved programs.

**LOWEST FLOOR.** The floor of the lowest enclosed area in a building including a basement except when the criteria listed in the definition of 'Enclosed Area below Lowest Floor' are met.

1. The enclosed area is designed to flood to equalize hydrostatic pressure during floods with walls or openings that satisfy the requirements for a "fully enclosed area below lowest floor" as defined in this Ordinance and
2. The enclosed area is unfinished (not carpeted, drywalled, etc.) and used solely for low damage potential uses such as building access, parking or storage, and
3. Machinery and service facilities (e.g., hot water heater, furnace, electrical service) contained in the enclosed area are located at least one (1) foot above the 100-year flood level, and
4. The enclosed area is not a "basement" as defined in this section.

**MAXIMUM DAMAGE POTENTIAL DEVELOPMENT.** Development including any of the following, or other buildings or building complexes similar in nature or use:

1. Hospitals and similar institutions
2. Buildings or building complexes containing documents, data, or instruments of great public value
3. Buildings or building complexes containing materials dangerous to the public or fuel storage facilities
4. Power installations needed in an emergency

**MINOR PROJECTS.** Small development activities (except for filling, grading and excavating) valued at less than five-hundred (500) dollars.

**NEW CONSTRUCTION.** Those structures or development for which the start of construction commenced on or after the effective date of the first floodplain management regulations adopted by Des Moines County.

**NEW FACTORY-BUILT HOME PARK OR SUBDIVISION.** A factory-built home park or subdivision for which the construction of facilities for servicing the lots on which the factory-built 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 first floodplain management regulations adopted by Des Moines County.

**RECREATIONAL VEHICLE.** A vehicle which is:

1. Built on a single chassis;
2. Four hundred (400) square feet or less when measured at the largest horizontal projection;
3. Designed to be self-propelled or permanently towable by a light duty truck; and
4. Designed primarily not for use as a permanent dwelling but as a temporary living quarters for recreational, camping, travel, or seasonal use.

**ROUTINE MAINTENANCE OF EXISTING BUILDINGS AND FACILITIES.** Repairs necessary to keep a structure in a safe and habitable condition that do not trigger a building permit, provided they are not associated with a general improvement of the structure or repair of a damaged structure. Such repairs include:

1. Normal maintenance of structures such as re-roofing, replacing roofing tiles and replacing siding
2. Exterior and interior painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work
3. Basement sealing
4. Repairing or replacing damaged or broken window panes
5. Repairing plumbing systems, electrical systems, heating or air conditioning systems and repairing wells or septic systems

**SHALLOW FLOODING AREA.** A designated AO, AH, AR/AO, AR/AH, or VO Zone on 'Des Moines County's Flood Insurance Rate Map (FIRM), which has a one (1) percent or greater annual chance of flooding to an average depth of one (1) to three (3) feet, where a clearly defined channel is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow. These areas are typically found within an area of land that is protected by a levee, and the flood waters constitute 'back channel flooding', associated with small drainageways within the leveed area of a larger stream or river.

**SPECIAL FLOOD HAZARD AREA (SFHA).** The land within Des Moines County subject to the base flood. This land is identified as Zones A, A1-30, AE, AH, AO, AR and/or A99 on the County's Flood Insurance Rate Map.



**START OF CONSTRUCTION.** Includes substantial improvement, and means the date the development permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement, was within one-hundred eighty (180) days of the permit date. The actual start means either the first placement or permanent construction of a structure on a site, such as pouring of a slab or footings, the installation of pile, the construction of columns, or any work beyond the stage of excavation; or the placement of a factory-built home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property 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 the building, whether or not that alteration affects the external dimensions of the building.

**STRUCTURE.** Anything constructed or erected on the ground or attached to the ground, including, but not limited to, buildings, factories, sheds, cabins, factory-built homes, storage tanks, grain storage facilities and other similar uses.

**SUBSTANTIAL DAMAGE.** Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damage condition would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred. "Substantial Damage" also means flood-related damages sustained by a structure on two (2) separate occasions during a ten (10)-year period for which the cost of repairs at the time of such flood event, on the average, equals or exceeds twenty-five (25) percent of the market value of the structure before the damage occurred. Volunteer labor and donated materials shall be included in the estimated cost of repair.

**SUBSTANTIAL IMPROVEMENT.** Any improvement to a structure which satisfies either of the following criteria:

1. Any repair, reconstruction, or improvement of a structure taking place during a 10-year period, the cumulative cost of which equals or exceeds fifty (50) percent of the market value of the structure in either of the following circumstances:
  - a) Before the "start of construction" of the first improvement of the structure, or
  - b) Before the damaged occurred, if the structure has been "substantially damaged" and is being restored.

The term does not, however, include any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe conditions for the existing use. The term also does not include any alteration of an "historic structure", provided the alteration will not preclude the structure's designation as an "historic structure".

2. Any addition which increases the original floor area of a building by twenty-five (25 percent) or more. All additions constructed after February 17, 1982 shall be added to any proposed addition in determining whether the total increase in original floor space would exceed twenty-five (25) percent.

**VARIANCE.** A grant of relief by Des Moines County from the terms of the floodplain management regulations.

**VIOLATION.** The failure of a structure or other development to be fully compliant with Des Moines County's floodplain management regulations.

## ARTICLE IV – FLOODPLAIN MANAGEMENT STANDARDS

- A. **General Floodplain Standards.** All development must be consistent with the need to minimize flood damage and shall meet the following applicable performance standards:
1. Where base flood elevations have not been provided in the Flood Insurance Study, the Department of Natural Resources shall be contacted to determine the base flood elevation, and whether the land involved is either wholly or partly within the floodway or floodway fringe.
    - a) Until a floodway has been designated, no development or substantial improvement may be permitted within Special Flood Hazard Areas unless the applicant has demonstrated that the proposed development or substantial improvement will not increase the base flood elevation more than one (1) foot. The applicant will be responsible for providing the Department of Natural Resources with sufficient technical information to make such a determination.
    - b) Review by the Iowa Department of Natural Resources is not required for the proposed construction of new or replacement bridges or culverts where:
      - (1) The bridge or culvert is located on a stream that drains less than one hundred (100) square miles, and
      - (2) The bridge or culvert is not associated with a channel modification that constitutes a channel change as specified in Chapter 567-71.2(1)b of *Iowa Administrative Code*.
  2. All development within the Special Flood Hazard Areas shall be:
    - a) Designed and adequately anchored to prevent flotation, collapse or lateral movement of the structure.
    - b) Constructed with materials and utility equipment resistant to flood damage.
    - c) Constructed by methods and practices that minimize flood damage.
  3. **All New and Substantially Improved Structures.**
    - a) Fully enclosed areas below the "lowest floor" (not including basements) that are subject to flooding shall be used solely for vehicle parking, building access and low damage potential storage. These areas shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or meet or exceed the following minimum criteria:
      - (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 shall be provided.
      - (2) The bottom of all openings shall be no higher than one foot above grade.
      - (3) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided they permit the automatic entry and

exit of floodwaters.

- b) New and substantially improved structures must be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
- c) New and substantially improved structures must be constructed with electrical meter, electrical service panel box, water heater, heating, air conditioning, ventilation equipment (including ductwork), and other similar machinery and equipment elevated (or in the case of non-residential structures, optionally floodproofed to) a minimum of one (1) foot above the base flood elevation.
- d) New and substantially improved structures shall be constructed with plumbing, gas lines, water/gas meters and other similar service utilities either elevated (or in the case of non-residential structures, optionally floodproofed to) a minimum of one (1) foot above the base flood elevation, or designed to be watertight and withstand inundation to such a level.

4. Non-Residential Structures.

- a) All new or substantially improved non-residential structures shall have the lowest floor (including basement) elevated a minimum of one (1) foot above the base flood elevation, or together with attendant utility and sanitary systems, be floodproofed to such a level.
- b) When floodproofing is utilized, a professional engineer registered in the State of Iowa shall certify that the floodproofing methods used are adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood; and that the structure, below the base flood elevation, is watertight with walls substantially impermeable to the passage of water. A record of the certification indicating the specific elevation (in relation to North American Vertical Datum to which any structures are floodproofed shall be maintained by the Administrator.

5. Residential Structures.

- a) All new or substantially improved residential structures shall have the lowest floor, including basement, elevated a minimum of one (1) foot above the base flood elevation.
- b) Construction shall be upon compacted fill which shall, at all points, be no lower than one (1.0) feet above the base flood elevation, and extend at such elevation at least eighteen (18) feet beyond the limits of any structure erected thereon.
- c) Alternate methods of elevating (such as piers or extended foundations) may be allowed, subject to favorable consideration by the Board of Supervisors, where existing topography, street grades, or other factors preclude elevating by fill. In such cases, the methods used must be adequate to support the structure as well as withstand the various forces and hazards associated with flooding.
- d) All new residential structures located in areas that would become isolated due to flooding of surrounding ground shall be provided with a means of

access that will be passable by wheeled vehicles during the base flood. However, this criterion shall not apply where the Administrator determines there is a sufficient flood warning time for the protection of life and property. When estimating flood warning time, consideration shall be given to the criteria listed in Chapter 567-75.2(3) of *Iowa Administrative Code*.

6. Factory-Built Homes.

- a) All new and substantially improved factory-built homes, including those placed in existing factory-built home parks or subdivisions, shall be elevated on a permanent foundation such that the lowest floor of the structure is a minimum of one (1) foot above the base flood elevation.
- b) All new and substantially improved factory-built homes, including those placed in existing factory-built home parks or subdivisions, shall be anchored to resist flotation, collapse, or lateral movement. The following specific requirements (or their equivalent) shall be met:
  - (1) Over-the-top ties shall be provided at each of the four corners of the factory-built home, with two (2) additional ties per side at intermediate locations and factory-built homes less than fifty (50) feet long requiring one (1) additional tie per side;
  - (2) Frame ties shall be provided at each corner of the home with five (5) additional ties per side at intermediate points and factory-built homes less than fifty (50) feet long requiring four (4) additional ties per side.
  - (3) All components of the anchoring system shall be capable of carrying a force of forty-eight hundred (4,800) pounds.
  - (4) Any additions to factory-built homes shall be similarly anchored.

7. Accessory Structures for Residential Uses:

- a) Detached garages, sheds, and similar structures that are incidental to a residential use are exempt from the base flood elevation requirements where the following criteria are satisfied:
  - (1) The structure shall be designed to have low flood damage potential. Its size shall not exceed 600 square feet, and those portions of the structure located less than one (1) foot above the base flood elevation shall be constructed of flood resistant materials.
  - (2) The structure shall not be used for human habitation, and shall instead be used only for low damage potential purposes such as vehicle parking and limited storage.
  - (3) The structure shall be constructed and placed on the building site, so as to offer minimum resistance to the flow of floodwaters.
  - (4) The structure shall be firmly anchored to prevent flotation, collapse and lateral movement, which may result in damage to other structures.
  - (5) The structure's service facilities such as electrical and heating equipment shall be elevated or floodproofed to at least one foot above the base flood elevation.

- (6) The structure's walls shall include openings that satisfy the provisions of Section 3(a) of this Article.
- b) Exemption from the base flood elevation requirements for such a structure may result in increased premium rates for flood insurance coverage of the structure and its contents.

8. Recreational Vehicles.

- a) Recreational vehicles are exempt from the requirements of Section 6 of this Article, regarding anchoring and elevation of factory-built homes, when the following criteria are satisfied:
  - (1) The recreational vehicle shall be located on the site for less than one-hundred eighty (180) consecutive days, and,
  - (2) The recreational vehicle must 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 and is attached to the site only by quick disconnect type utilities and security devices and has no permanently attached additions.
- b) Recreational vehicles that are located on the site for more than one-hundred eighty (180) consecutive days and are not ready for highway use must satisfy requirements of Section 6 of this Article, regarding anchoring and elevation of factory-built homes.

9. Utility and Sanitary Systems.

- a) On site waste disposal systems shall be located or designed to avoid impairment to the system or contamination from the system during flooding.
  - (1) For homes located on the river side of a levee, the owner shall install a closed sanitary septic system, contingent on the approval of the Des Moines County Health Department.
- b) All new and replacement sanitary sewage systems shall be designed to minimize and eliminate infiltration of flood waters into the systems as well as the discharge of effluent into flood waters. Wastewater treatment facilities shall be provided with a level of flood protection equal to or greater than one (1) foot above the base flood elevation.
- c) New or replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system. Water supply treatment facilities shall be provided with a level of protection equal to or greater than one (1) foot above the base flood elevation.
- d) Utilities such as gas or electrical systems shall be located and constructed to minimize or eliminate flood damage to the system and the risk associated with such flood damaged or impaired systems.

10. Material and Equipment Storage. Storage of materials and equipment that are flammable, explosive or injurious to human, animal or plant life is prohibited unless elevated a minimum of one (1) foot above the base flood elevation. Other material and equipment that does have any of the aforementioned characteristics must either:

- a) Be similarly elevated, or
  - b) Not be subject to major flood damage and be anchored to prevent movement due to flood, or
  - c) Be readily removable from the area within the time available after flood warning.
11. Levees and Flood Control Structures. Flood control structural works such as levees, flood walls, etc. shall provide, at a minimum, protection from a base flood with a minimum of three (3) feet of design freeboard and shall provide for adequate interior drainage. In addition, structural flood control works shall be approved by the Department of Natural Resources.
12. Alterations to Waterways. Watercourse alterations or relocations shall be designed to maintain the flood carrying capacity within the altered or relocated portion. In addition, such alterations or relocations must be approved by the Department of Natural Resources.
13. Pipeline Crossings. Pipeline river and stream crossings shall be buried in the streambed and banks or otherwise sufficiently protected to prevent rupture due to channel degradation and meandering.
14. Maximum Damage Potential Development. All new or substantially improved Maximum Damage Potential Development shall have the lowest floor (including basement) elevated a minimum of one (1) foot above the elevation of the five-hundred (500) year flood, or together with attendant utility and sanitary systems, be floodproofed to such a level.
- a) When floodproofing is utilized, a professional engineer registered in the State of Iowa shall certify that the floodproofing methods used are adequate to withstand the flood depths, pressures, velocities, impact and uplift forces, and other factors associated with the five-hundred (500) year flood; and that the structure below the five-hundred (500) year flood elevation is watertight with walls and substantially impermeable to the passage of water.
  - b) A record of the certification indicating the specific elevation (in relation to North American Vertical Datum 1988) to which any structures are floodproofed shall be maintained by the Administrator.
  - c) Where five-hundred (500) year flood elevation data has not been provided in the Flood Insurance Study, the Iowa Department of Natural Resources shall be contacted to compute such data. The applicant will be responsible for providing the Department with sufficient technical information to make such determinations.
15. Subdivisions:
- a) Subdivisions (including factory-built home parks and subdivisions) shall be consistent with the need to minimize flood damage, and shall have adequate drainage provided to reduce exposure to flood damage.
  - b) Development associated with subdivision proposals (including the installation of public utilities) shall meet the applicable performance standards.

- c) Subdivision proposals intended for residential development shall provide all lots with a means of vehicular access that will remain dry during occurrence of the base flood.
- d) Proposals for subdivisions greater than five (5) acres or fifty (50) lots (whichever is less) shall include the base flood elevation data for those areas located within the area of significant flood hazard.

B. **Special Floodway Provisions.** The floodway is that portion of the floodplain which must be protected from developmental encroachment to allow the free flow of flood waters. In addition to the General Floodplain Standards (Section A of this Article), development within the floodway must meet the following applicable standards:

1. Where floodway data has been provided in the Flood Insurance Study, such data shall be used to define the floodway limits. Where no floodway data has been provided, the Department of Natural Resources shall be contacted to provide a floodway delineation.
  - a) The applicant shall be responsible for providing the Department with sufficient technical information to make such a determination.
2. No development shall be permitted in the floodway that would result in any increase in the base flood elevation. Consideration of the effects of any development on flood levels shall be based upon the assumption that an equal degree of development would be allowed for similarly situated lands.
3. All development within the floodway shall:
  - a) Be consistent with the need to minimize flood damage.
  - b) Use construction methods and practices that will minimize flood damage.
  - c) Use construction materials and utility equipment that are resistant to flood damage.
4. No development shall affect the capacity or conveyance of the channel or floodway or any tributary to the main stream, drainage ditch, or any other drainage facility or system.
5. Structures, buildings, recreational vehicles, and sanitary and utility systems, if permitted, shall meet the applicable General Floodplain standards and shall be constructed or aligned to present the minimum possible resistance to flood flows.
6. Structures, if permitted, shall have a low flood damage potential and shall not be used for human habitation.
7. Storage of materials or equipment that are buoyant, flammable, explosive or injurious to human, animal or plant life is prohibited. Storage of other materials may be allowed if readily removable from the floodway within the time available after flood warning.
8. All channel changes and modifications within the floodway shall be designed to maintain the flood carrying capacity within the altered or relocated portion. In addition, such changes and modifications must be approved by the Department of Natural Resources.

9. Any fill allowed in the floodway must be shown to have some beneficial purpose and shall be limited to the minimum amount necessary.
10. Pipeline river or stream crossings shall be buried in the stream bed and banks or otherwise sufficiently protected to prevent rupture due to channel degradation and meandering or due to the action of flood flows.

C. **Special Provisions for Shallow Flooding Areas.** In addition to the General Floodplain Standards, development within shallow flooding areas shall meet the following applicable standards:

1. The requirement that utility infrastructure, storage of materials, or the lowest floor of a structure be elevated a minimum of one (1) foot above the base flood elevation (as outlined in Section A of this Article) shall not apply to Shallow Flooding Areas. Instead, the following minimum floodproofing elevations shall apply:
  - a) In shallow flooding areas designated as an AH Zone on the Flood Insurance Rate Map, the minimum floodproofing/flood protection elevation shall be equal to the base flood elevation as specified on the FIRM.
  - b) In shallow flooding areas designated as an AO Zone on the Flood Insurance Rate Map, the minimum floodproofing/flood protection elevation shall be equal to the number of feet as specified on the FIRM (or, if no number is specified, a minimum of two (2) feet above the highest natural grade adjacent to the structure).
3. In shallow flooding areas designated as either an AH or AO Zone on the Flood Insurance Rate Map, drainage paths shall be provided around structures on slopes, to adequately guide water away from structures.



## ARTICLE V – ADMINISTRATION

### A. Appointment, Duties and Responsibilities of Administrator.

1. The Des Moines County Land Use Administrator is hereby appointed to implement and administer the provisions of this ordinance and will herein be referred to as the Administrator.
2. Duties and Responsibilities of the Administrator shall include, but not necessarily be limited to the following:
  - a) Review all floodplain development permit applications to ensure that the provisions of this ordinance will be satisfied.
  - b) Review all floodplain development permit application to ensure that all necessary permits have been obtained from federal, state or local governmental agencies, including approval when required from the Department of Natural Resources for floodplain construction.
  - c) Record and maintain a record of:
    - (1) the elevation (in relation to North American Vertical Datum of the lowest floor of all new or substantially improved buildings, or
    - (2) the elevation to which new or substantially improved structures have been floodproofed.
  - d) Notify adjacent communities and/or counties and the Department of Natural Resources prior to any proposed alteration or relocation of a watercourse.
  - e) Keep a record of all permits, appeals, variances and such other transactions and correspondence pertaining to the administration of this ordinance.
  - f) Notify the Federal Insurance Administrator of any annexations or modifications to the community's boundaries.
  - g) Review subdivision proposals to ensure such proposals are consistent with the purpose of this ordinance and advise the Board of Supervisors of potential conflict.
  - h) Maintain the accuracy of Des Moines County's Flood Insurance Rate Maps when development placed within the floodway results in any of the following:
    - (1) An increase in the Base Flood Elevations, or
    - (2) Alteration to the floodway boundary
  - i) Perform site inspections to ensure compliance with the standards of this ordinance.
  - j) Forward all requests for Variances to the Board of Supervisors for consideration, and ensure that all requests include the information ordinarily submitted with applications, as well as any additional information deemed necessary to the Board.

### B. Floodplain Development Permit.

1. Permit Required. A Floodplain Development Permit issued by the Administrator shall be secured prior to initiation of any floodplain development (any man-made

change to improved or unimproved real estate, including but not limited to: buildings or other structures, mining, filling, grading, paving, storage of materials and equipment, excavation or drilling operations) including the placement of factory-built home.

2. Application for Permit. Application for a Floodplain Development Permit shall be made on forms supplied by the Administrator and upon payment of the administrative fee (with rate set by the Board of Supervisors through resolution), shall include the following information:
    - a) Description of the work to be covered by the permit for which application is to be made.
    - b) Description of the land on which the proposed work is to be done (i.e. lot, block, tract, street address or similar description that will readily identify and locate the work to be done).
    - c) Location and dimensions of all structures and additions.
    - d) Indication of the use or occupancy for which the proposed work is intended.
    - e) Elevation of the base flood.
    - f) Elevation (in relation to North American Vertical Datum) of the lowest floor (including basement) of buildings or of the level to which a building is to be floodproofed.
    - g) For structures being improved or rebuild, the estimated costs of improvements and market value of the structure prior to the improvements.
    - h) Such other information as the Administrator deems reasonably necessary for the purpose of this ordinance.
  3. Action on Permit Application. The Administrator shall, within a reasonable time, make a determination as to whether the proposed floodplain development meets the applicable standards of this ordinance and shall approve or disapprove the application. For disapprovals, the applicant shall be informed, in writing, of the specific reasons therefore. The Administrator shall not issue permits for variances except as directed by the Board of Supervisors.
  4. Construction and Use to be as Provided in Application and Plans. Floodplain Development Permits based on the basis of approved plans and applications authorize only the use, arrangement and construction set forth in such approved plans and applications and no other use, arrangement or construction. Any use, arrangement, or construction at variance with that authorized shall be deemed a violation of this Ordinance. The applicant shall be required to submit certification by a professional engineer or land surveyor, as appropriate, registered in the state of Iowa, that the finished fill, structure floor elevations, flood-proofing, or other flood protection measures were accomplished in compliance with the provisions of this Ordinance, prior to the use or occupancy of any structure. It is the applicant's responsibility to contract with a consulting engineer or surveyor to obtain the required certification.
- C. Variances. The Board of Supervisors may authorize upon request in specific cases such variances from the terms of this ordinance that will not be contrary to the public interest where, owing to special conditions, a literal enforcement of the provisions of this ordinance

will result in unnecessary hardship.

1. Variances granted must meet the following applicable standards:
  - a) No variance shall be granted for any development within the floodway which would result in any increase in flood heights during the occurrence of the base flood. Consideration of the effects of any development on flood levels shall be based upon the assumption that any equal degree of development would be allowed for similarly situated lands.
  - b) Variances shall only be granted upon:
    - (1) a showing of 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 the 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.
  - c) Variances shall only be granted upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
  - d) In cases where the variance involves a lower level of flood protection for buildings than what is ordinarily required by this Ordinance, the applicant shall be notified in writing over the signature of the Administrator that:
    - (1) the issuance of a variance will result in increased premium rates for flood insurance up to amounts as high as twenty-five (25) dollars for one-hundred (100) dollars of insurance coverage, and
    - (2) such construction increases risk to life and property.
  - e) All variances granted shall have the concurrence or approval of the Department of Natural Resources.
2. Factors Upon Which the Decision of the Board Shall be Based. In passing upon applications for Variances, the Board shall consider all relevant factors specified in other sections of this ordinance, along with the following:
  - a) The danger to life and property due to increased flood heights or velocities caused by encroachments.
  - b) The danger that materials may be swept on or other land or downstream to the injury of others.
  - c) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination and unsanitary conditions.
  - d) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.
  - e) The importance of the services provided by the proposed facility to the county.
  - f) The requirements of the facility for a floodplain location.
  - g) The availability of alternative locations not subject to flooding for the proposed use.

- h) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
- i) The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.
- j) The safety of access to the property in times of flood for ordinary and emergency vehicles.
- k) The expected heights, velocity, duration, rate of rise and sediment transport of the flood water expected at the site.
- l) Such other factors which are relevant to the purpose of this ordinance.

3. Conditions Attached to Variances. Upon consideration of the factors listed above, the Board may attach such conditions to the granting of variances as it deems necessary to further the purpose of this ordinance. Such conditions may include, but not necessarily be limited to:

- a) Modification of waste disposal and water supply facilities.
- b) Limitation of periods of use and operation.
- c) Imposition of operational controls, sureties, and deed restrictions.
- d) Requirements for construction of channel modification, dikes, levees, and other protective measures, provided such are approved by the Department of Natural Resources and are deemed the only practical alternative to achieving the purpose of this ordinance.
- e) Floodproofing measures.

## ARTICLE VI – PENALTIES FOR VIOLATION

- A. **Ordinance Violations and Penalties.** Any violation of the provisions of this ordinance or failure to comply with any of its requirements shall constitute a county infraction, as defined by Chapter 331.307 of the *Iowa Code*. Each day that the violation persists shall constitute a separate repeat offense.
1. Any person or firm who violates this ordinance or fails to comply with any of its requirements shall upon conviction thereof be fined not more than seven-hundred fifty (750) dollars for the first offense, and not more than one-thousand (1,000) dollars for each repeat offense, or be imprisoned for not more than thirty (30) days for each offense.
  2. Nothing herein contained shall prevent Des Moines County from taking such other lawful action as is necessary to prevent or remedy any violation.

## ARTICLE VII – AMENDMENTS

- A. **Amendments to Ordinance.** The regulations and standards set forth in this ordinance may from time to time be amended, supplemented, changed, or repealed. No amendment, supplement, change, or modification shall be undertaken without prior approval of the Iowa Department of Natural Resources.