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## 10.02 FC—Flood Control District

### A. Findings of Fact.

1. The flood hazard areas of the City are subject to periodic inundation which results 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 public health, safety and general welfare.
2. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately elevated or otherwise unprotected from flood damage also contribute to flood loss.

### B. Statement of Goals, Purpose and Policy.

1. Floodplain compatible development does not include new residential development. Allow the improvement of existing dwelling units in the floodplain only when federal regulations are followed.
2. Promote and enhance the use of the floodplain for open space, pedestrian, bicycle and equestrian transportation, wildlife habitat and appropriate recreational activities.
3. Limit development within the floodplain by not allowing connection of nonconforming and/or floodplain incompatible uses to municipal water or sewer facilities within the floodplain.
4. Prevent the destruction of the floodplain, stream channels and natural terraces, by regulating filling, grading, dredging and other development which may increase flood damage; and by preventing the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.
5. Allow for the economic return on investment for development which is compatible and designed for the discharge of the one-hundred-year flood without injury or loss of life or property, such as turf farms, gravel mines and golf courses.
6. Minimize expenditures of public and private money for costly flood control, emergency measures and damage by limiting development in floodplains. Costs which are avoided by limiting development in the floodplain include: the need for rescue and relief efforts associated with flooding; the costs associated with prolonged business interruptions; and the costs associated with damage to public facilities and utilities, such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard.
7. Actively and effectively participate in the National Flood Insurance Program in order to allow property holders within the floodplain to obtain insurance and to minimize the loss of life and property during a one-hundred-year flood event.
8. *Warning and Disclaimer of Liability.* The degree of flood protection required by this Section is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. On rare occasions, greater floods can and will occur and flood heights may be increased by man-made or natural causes. This Section does not imply that land outside the regulatory flood boundary or uses permitted or approved within such areas will be free from flooding or flood damages. This Section shall not create liability on the part of the City of Brighton or any official or employee for any flood damages that result from reliance on this Section or any administrative decision lawfully made under this Section.

### C. Regulatory Floodplain Boundary.

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1. The provisions of this Section apply to the areas of special floodplain area identified by the Federal Emergency Management Agency in the scientific and engineering report entitled, "The Flood Insurance Study for Adams County, Colorado and Incorporated Areas," dated March 5, 2007, with accompanying flood insurance rate maps and flood boundary-floodway maps (FIRM and FBFM), as may be amended from time to time. Additional flood boundaries that shall apply are identified in the current Flood Hazard Area Delineation Studies for Todd Creek, the South Platte River, Adams County, Second Creek and Third Creek, as published and amended by the Urban Drainage and Flood Control District (UDFCD), and any that may be established in the future. If these studies conflict, the most restrictive shall apply. The flood insurance study, the flood insurance rate maps and the UDFCD Flood Hazard Area Delineation Studies shall be available for public review at the offices of the Utilities Department, City of Brighton.
  2. An applicant that disputes the location of a regulatory floodplain boundary may file with the City Engineer a written request for a hearing before the City Council, which will be held within 30 days after the City Engineer receives the request. The written request shall specify the nature of the dispute, and shall include a statement from a registered Colorado professional engineer as to projected flood profiles, elevation and projected velocity, and the basis for the claim that the location of the boundary is incorrect. The City Council recognizes that only formal letters of map and study amendments issued by the Federal Emergency Management Agency are effective to change the boundary line for federal regulatory purposes.
  3. If a lot or parcel of land lies partly within the regulatory floodplain, the part of such lot or parcel within that area shall meet all the standards and requirements prescribed by this Section. If land outside the City is included within a regulatory floodplain area, the requirements of this Section apply to the land upon annexation without any requirements that the City Council further approve a flood boundary map covering such area.

**D. Administration.**

1. *Designation and duties of Floodplain Administrator.* The City Engineer or the Floodplain Administrator as designated by the City Manager shall administer the requirements of this Section, and shall:
  - a. Determine that the requirements of this Section have been met before issuing any permit for development in the floodplain;
  - b. Review applications for structures located in the regulatory floodplain to assure that all necessary conditional use permits, certificates of appropriateness or exemptions for historic structures, and other required permits have been received from those governmental agencies from which approval is required by City, federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. § 1334;
  - c. Notify adjacent communities, Adams County, the Colorado Water Conservation District Board and the Federal Emergency Management Agency before permitting any change in a watercourse;
  - d. Obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures;
  - e. Maintain, for public inspection, all records pertaining to the provisions of this Section, including the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures; and
  - f. Where interpretation is needed as to the exact location of the boundaries of a regulatory floodplain (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Floodplain Administrator shall make the necessary interpretations.

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2. *Flood regulations in relation to other regulations.* The requirements of this Section supplement those imposed on the same lands by any underlying zoning provisions of this code, Chapter 14, Storm drainage of the Brighton Municipal Code, any ordinance of the City or annexation agreement. If there is a conflict between these requirements or agreements, the more restrictive controls. If a use not conforming to the requirements of this Section is discontinued for 6 consecutive months, no person shall use the structure or premises unless the use and structure conform to the requirements of this Section.
  3. *Existing structures.* Any activity for which a floodplain permit was issued by the City Engineer or a CLOMR was issued by FEMA prior to the adoption of this Section may be completed according to the standards in place at the time of the permit or CLOMR issuance and will not be considered in violation of this code if it meets the standards. The use of any structure on land within the regulatory floodplain that was lawful before the application Section may continue subject to the provisions of Section 1.05 and the following conditions:
    - a. If any person makes repairs to or replaces a portion of any such structure but the cost of repair or replacement does not exceed 50% of its market value, such person shall elevate the repaired or replaced portion as required by this Section.
    - b. If any person makes substantial improvement to any structure in the floodplain, such person shall permanently modify the entire structure and the use of the structure to conform to the requirements of this Section.
    - c. No person shall change a use unless the structure and the use of the structure are modified permanently to conform to the requirement of this Section.
    - d. If a conflict arises between the requirements of this Section and the provisions for nonconforming uses, structures and lots contained in this code, the requirements of this Section control.
    - e. When this Section requires calculation of a percentage of market value of a structure for the purposes of cost of repair or replacement, extent of damage or increases in value, the market value and the required calculation shall be determined pursuant to written appraisal detailing the methodology used by a person qualified to evaluate the particular situation. The methodology and the appraiser shall be acceptable to the City Manager.
  4. *Issuance of a floodplain permit.*
    - a. *Floodplain permit required.* Any development within the floodplain, except which is specifically exempted in Subparagraph b. below requires the application, review and approval of a valid floodplain permit issued by the City Engineer in accordance this section and the requirements outlined in this subsection.
    - b. Development exempted from floodplain permit:
      - (1) The normal repair and maintenance of existing utilities, including but not limited to sewer, water, telephone, cable, power, bridges and streets;
      - (2) Water monitoring devices;
      - (3) Flood control facilities approved by the applicable urban drainage control district, the Army Corps of Engineers, the Federal Emergency Management Agency and the City Utilities Department;
      - (4) Irrigation structures; and

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- (5) Compliance. No structure or land shall be located, altered, or have its use changed within the regulatory floodplain without full compliance with the terms of this Section, and other applicable ordinances and regulations.
5. *Application materials.* Application for a floodplain permit shall be presented on forms furnished by Floodplain Administrator and may include plans in duplicate drawn to scale showing the location, dimensions, and elevation of proposed landscape alterations, existing and proposed structures, including the placement of manufactured homes, and the location in relation to the regulatory floodplain area. Additionally, the following information is required:
- a. Cross-sections illustrating the floodplain in the area to be occupied by the development and the base flood elevation;
  - b. Elevation (in relation to mean sea level), of the lowest floor (including basement) of all new and substantially improved structures;
  - c. Elevation in relation to mean sea level to which any nonresidential structure shall be flood proofed;
  - d. A certificate from a registered Colorado professional engineer or architect that the nonresidential flood proofed structure shall meet the flood proofing criteria of Section 10.02.E., Flood Plain Regulations.
  - e. A floodplain analysis by a Colorado registered professional engineer of the flood profile, elevation and velocity, using methodology acceptable to the Federal Emergency Management Agency, including existing and anticipated uses and making a determination that the proposed construction will not cause a rise in the elevation of the water surface of the base flood.
  - f. An analysis by a registered Colorado professional engineer or licensed architect of the structural design, specifications, and plans for the construction certifying that the design and methods of construction are in compliance with the regulations and requirements of this Section;
  - g. Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of the proposed development; and
  - h. In addition to the application materials required to obtain a permit, the City Engineer may require the applicant to furnish additional information and details deemed necessary to evaluate the effects of the proposed development upon the floodplain and the safety of inhabitants and visitors.
6. *Application review.* Approval, denial or approval with conditions of a floodplain permit by the Floodplain Administrator shall be based on all of the provisions of this Section. When reviewing an application for a floodplain permit, the Floodplain Administrator may approve, disapprove or approve with conditions the application after reviewing the following relevant factors:
- a. The danger to life and property due to flooding or erosion damage;
  - b. The effects upon the efficiency or capacity of the floodway;
  - c. The susceptibility of the proposed facility and its contents to flood damage and the effect of damage on the individual owner;
  - d. The danger that materials may be swept onto other lands to the injury or damage to another;
  - e. The compatibility of the proposed use with existing developments;
  - f. The safety of access to the property in times of flood for ordinary and emergency vehicles;

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- g. The costs of providing governmental services during and after flood conditions, including maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical and water services;
  - h. The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site;
  - i. The necessity to the facility of a water front location, where applicable;
  - j. The availability of alternative locations, not subject to flooding or erosion damages, for the proposed use;
  - k. Whether or not the proposed development constitutes a critical facility as designated in Section 10.02.I., Critical Facilities, or designated by other action of the City Council, and if it is, the required freeboard elevation above the base flood elevation shall be no less than 2 feet; and
  - l. The application of the provisions and regulations of the City of Brighton Land Use Development Code and Comprehensive Plan.
- E. **Floodplain Regulations.** When reviewing an application for a permit, the City Engineer shall determine whether it meets the purposes of this Section and approve or disapprove a complete permit application after reviewing the following regulations:
- 1. No new residential dwelling units or uses shall be established in the floodplain. Existing dwelling unit uses may be improved if they meet the requirements of this Section.
  - 2. Permitted and conditional uses allowed in the floodplain are listed in Article 4.
  - 3. No development, use, fill, excavation, construction or alteration within a regulatory floodplain shall be permitted, which acting alone or in combination with existing or future uses, would cause or result in any of the following:
    - a. The disposal of garbage, sludge, waste materials or other potentially injurious substances;
    - b. An obstruction or depositing of any material which would impair the flow capacity of a regulatory floodplain or increase floodwater depths or velocities so as to cause probable damage to others wherever located;
    - c. A substantial increase in sedimentation and/or erosion
  - 4. With the exception of critical facilities outlined in Section 10.02.I. Critical Facilities, the freeboard of the lowest floor (including basement), electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork) of new construction and substantial improvements of any commercial, industrial, or other nonresidential structure shall be either elevated to at least 1 foot above the base flood elevation, or together with attendant utility and sanitary facilities, be designed so that at 1 foot above the base flood elevation 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 and effects of buoyancy.

A registered Colorado professional engineer or architect shall develop and review structural designs, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with this Section 10.02.E.4. and accepted standards of practice.
  - 5. Structures shall be placed on and anchored to permanent foundations which shall have structural components capable of resisting hydrostatic and hydrodynamic loads, and shall be anchored to resist flotation, collapse or lateral movement during a base flood, as designed by a registered, professional engineer.

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6. The enclosure of accessible areas below the base flood elevation is prohibited, except for crawl spaces with headroom less than 4 feet in height. No enclosure shall be permitted which has the potential of becoming habitable space.
  7. No lot shall be created which will violate the provisions of this Article. In particular, no lot shall be created which is intended for the establishment of a dwelling unit or other disallowed use.
  8. Subdivisions for allowed uses within floodplains. The development or redevelopment of subdivisions for commercial and/or industrial uses which are allowed as a permitted or conditional use, in part or in whole, within the boundaries of the one-hundred-year floodplain shall meet the following requirements:
    - a. Designs shall minimize flood damage;
    - b. All utilities, including but not limited to sewer, water, power and telephone systems, shall be located and constructed to minimize or eliminate flood damage, and must meet the provisions of Paragraph 10. below;
    - c. Adequate drainage shall be provided to reduce exposure to flooding; and
    - d. Base flood elevation data shall be provided for each lot. Base flood elevations shall be provided by the applicant.
  9. Manufactured home parks and subdivisions.
    - a. Development, in whole or in part, of a manufactured home park or subdivision within the boundaries of the floodplain is not permitted.
    - b. Nonconforming manufactured home parks or subdivisions shall not be improved or expanded in such a way as to add additional space and/or lots for manufactured homes within the boundaries of the floodplain.
    - c. When a manufactured home is moved onto an existing lot within the floodplain, a permanent foundation and/or compacted fill must be provided so that the lowest floor of the manufactured home shall be at least 1 foot above the base flood elevation.
  10. Construction materials and methods for utilities.
    - a. Sanitary sewer and potable water utilities may pass through the floodplain to serve and connect to points out of the floodplain; in no case shall new sewer or water taps be given to uses which do not conform to the provisions of this code.
    - b. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage and shall be constructed using methods and practices that minimize flood damage.
    - c. All new and replacement water supply and sewer systems shall be designed to minimize or eliminate infiltration of flood waters into that system and to minimize or eliminate discharge of the systems into flood waters.
    - d. All wastewater systems shall be located to avoid impairment to them or contamination from them during flooding.
    - e. 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 the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered Colorado professional engineer or architect or meet or exceed the following minimum criteria:

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- (1) A minimum of 2 openings having a total net area of not less than 1 square inch for every square foot of enclosed area subject to flooding shall be provided; and
    - (2) The bottom of all openings shall be no higher than 1 foot above grade; and
    - (3) Openings may be equipped with screens, louvers, valves or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
  11. No person shall store or process materials that are hazardous, flammable, poisonous or explosive, that in times of flooding could in any way be harmful to human, animal or plant life, or that are buoyant and not adequately anchored or contained, except at or above the regulatory floodplain elevation for the area in which they are located.
  12. No development shall require additional public or private expenditures beyond the costs of the development proposed by the applicant.
  13. No development shall take place in which it would be difficult or impossible to obtain safe access by ordinary and emergency vehicles.
  14. No development shall adversely affect surrounding or downstream development.
  15. The carrying capacity of a relocated or altered watercourse shall be maintained.
  16. Recreational vehicles. All recreational vehicles placed on sites within Zones A1-30, AH, and AE on the City's FIRM must either:
    - a. Be on the site for fewer than 180 consecutive days;
    - b. 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); or
    - c. Recreational vehicles must be placed in an elevated or a permanent foundation such that the lowest floor is elevated to 1 foot above the base flood elevation and shall be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
- F. **Floodway Regulations.** Where otherwise permitted, any development, obstruction or activity that will result in an encroachment in or modification to the floodway shall be permitted only if the following requirements are met, using floodplain modeling and technical analysis consistent with floodplain modeling guidelines and standards established or approved by the Utilities Director. Required demonstrations for floodway encroachments and/or modifications. At least one of the following requirements must be met for any floodway encroachment or modification:
1. *No rise.* The development, obstruction or activity must be shown by appropriate floodplain modeling to result in no increase in base flood elevations, also referred to as *no rise*.
    - a. A certification signed by a registered professional engineer accurately documenting that no increase in base flood elevations will result from the proposed development, obstruction or activity, in a form approved by the Utilities Director, must be submitted prior to issuance of a floodplain permit, and
    - b. A certification signed by a registered professional engineer accurately documenting the as-built base flood elevations after completion of the development, obstruction or activity as resulting in no increase in base flood elevations must be submitted prior to the issuance of a certificate of occupancy, or, in the event no certificate of occupancy is required, upon completion of the improvements; or
  2. *No rise except on applicant land or easement.* The development, obstruction or activity must be shown by appropriate floodplain modeling to result in no increase in base flood elevations or change in

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floodway or flood fringe boundaries, except on the applicant's contiguous property or on property for which the applicant has obtained and recorded easements sufficient to allow for the associated changes, and:

- a. A certification signed by a registered professional engineer accurately documenting that no increase in the floodway or base flood elevations on other than the applicant's contiguous property or on property for which the applicant has obtained and recorded easements sufficient to allow for the associated changes will result from the proposed development, obstruction or activity, in a form approved by the Utilities Director, must be submitted prior to issuance of a floodplain permit; and
- b. A certification signed by a registered professional engineer accurately documenting the as-built floodway and base flood elevations after completion of the development, obstruction or activity as resulting in no increase in the floodway or base flood elevations on other than the applicant's contiguous property or other than provided by recorded easements must be submitted prior to the issuance of a certificate of occupancy, or, in the event no certificate of occupancy is required, upon completion of the improvements.

**G. Map Revisions.**

1. *Conditional map revisions.* A Conditional Letter of Map Revision must be approved by FEMA, or, for a City basin floodplain, a preliminary map revision must be approved by the Utilities Director, prior to issuance of a floodplain permit or initiation of construction or permitted activities for any proposed development or activity in the floodplain or floodway that:
  - a. results in any of the following:
    - (1) an increase in base flood elevation of more than 0.00 feet,
    - (2) a decrease in base flood elevation of more than 0.30 feet,
    - (3) a change in watercourse location,
    - (4) the addition of new area within the floodplain or floodway, or
    - (5) a physical change to the hydrology of the floodplain or floodway or hydraulic conveyance with the floodway; or
  - b. requires any of the following in order to meet the requirements for a floodplain use permit:
    - (1) technical analysis to correct existing map errors,
    - (2) technical analysis that incorporates improved technical data, or
    - (3) technical analysis that applies improved or alternative hydrologic or hydraulic methodologies.
2. *Final map revisions.* Upon completion of development or other activities for any development or activity in the floodplain or floodway that results in a change to base flood elevations, floodway or flood fringe boundaries, regardless of whether a Conditional Letter of Map Revision has been required pursuant to Conditional Map Revisions above, a Letter of Map Revision or Physical Map Revision must be approved by FEMA, or, for a City basin floodplain, a final map revision must be approved by the Utilities Director, prior to issuance of a certificate of occupancy, or, in the event no certificate of occupancy is required, upon completion of the improvements.

- H. Properties Removed from Floodplain by Fill.** A floodplain permit shall not be issued for the construction of a new structure or addition to an existing structure on a property removed from the floodplain by the issuance of a FEMA letter of map revision based on fill (LOMR-F), unless such new structure or addition complies with the following:

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1. *Residential construction.* The lowest floor (including basement), electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork), must be elevated to 1 foot above the base flood elevation that existed prior to the placement of fill.
  2. *Nonresidential construction.* The lowest floor (including basement), electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork), must be elevated to 1 foot above the base flood elevation that existed prior to the placement of fill, or together with attendant utility and sanitary facilities be designed so that the structure or addition is watertight to at least 1 foot above the base flood level that existed prior to the placement of fill with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effect of buoyancy.

**I. Critical Facilities.**

1. *Protection for critical facilities.* All new and substantially improved critical facilities and new additions to critical facilities located within the regulatory floodplain shall be regulated to a higher standard than structures not determined to be critical facilities. For the purposes of this Section protection shall include one of the following:
  - a. Location outside the regulatory floodplain; or
  - b. Elevation of the lowest floor or flood proofing of the structure, together with attendant utility and sanitary facilities, to at least 2 feet above the base flood elevation.
2. *Ingress and egress for new critical facilities.* New critical facilities shall, when practicable as determined by the City Engineer, have continuous non-inundated access (ingress and egress for evacuation and emergency services) during a 100-year flood event.
3. *Classification of critical facilities.* For the purposes of this Section, the following shall be classified as critical facilities:
  - a. Essential services facilities include public safety, emergency response, emergency medical, designated emergency shelters, communications, public utility plant facilities, and transportation lifelines.

Specific exemptions to this category include wastewater treatment plants (WWTP), non-potable water treatment and distribution systems, and related appurtenances.

Public utility plant facilities may be exempted if it can be demonstrated to the satisfaction of the City Engineer that the facility is an element of a redundant system for which service will not be interrupted during a flood.
  - b. Hazardous materials facilities include facilities that produce or store highly volatile, flammable, explosive, toxic and/or water-reactive materials.

Specific exemptions to this category include:

Finished consumer products within retail centers and households containing hazardous materials intended for household use, and agricultural products intended for agricultural use.

Buildings and other structures containing hazardous materials for which it can be demonstrated to the satisfaction of the local authority having jurisdiction by hazard assessment and certification by a qualified professional (as determined by the local jurisdiction having land use authority) that a release of the subject hazardous material does not pose a major threat to the public.
  - c. At-risk population facilities include medical care, congregate care, and schools.

**J. Floodplain Variance Criteria.**

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1. *Variance applications.* A person wishing to develop or use land or structures in such a way that does not conform to the requirements of this Section and cannot be made to conform without unreasonable expense or unreasonable impact on the existing structure may apply to the Board of Adjustment for a variance from the requirements of this Section. No variance shall be accepted, processed or granted which will permit a use which is incompatible with the discharge of the one-hundred-year flood, as determined by the list of permitted and conditional uses within the floodplain. In particular, no variance application shall be accepted, processed or granted which would permit the construction of new dwelling units. Variance applications shall be in compliance with the application requirements outlined above.
  2. *Variance criteria.* Variances to the above standards shall only be issued by the Board of Adjustment upon finding all the following criteria to be true:
    - a. The variance is the result of good and sufficient cause;
    - b. A determination by the Board of Adjustment that failure to grant the variance would result in exceptional hardship to the applicant;
    - c. A determination by the Board of Adjustment 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 other standards outlined in this Article;
    - d. The development will not increase the risk that materials may be swept onto other lands or be injurious to others;
    - e. That there is a public necessity of locating the development within the floodplain and the proposed use cannot be located elsewhere;
    - f. That the development will be safely accessible by emergency vehicles during times of flood;
    - g. Variances will not be issued in the regulatory floodway if any increase in the base flood elevation occurs;
    - h. *Historic structures.* Variances may be issued for the repair or rehabilitation of historic structures 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;
    - i. That the cost of providing essential services as maintaining and protecting public utility systems, roads and bridges during and after floods will not rise as a result of the development; and
    - j. The property for which the variance is sought does not exceed half of an acre.-
  3. *Increased insurance premiums.* 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 the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the variance.
  4. *Engineering certification.* If a variance is to allow development within a floodway, a certification by a registered professional engineer shall be provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- K. **Defined Terms.** The following terms used in this Section shall have the meaning given below. All other terms shall have their usual customary meaning, or the meaning given elsewhere in this code or other applicable uniform or international code adopted by the City, except where the context clearly indicates a different meaning.

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*Base flood.* The flood having a 1% chance of being equaled or exceeded in any given year.

*Base flood elevation.* The elevation shown on a FEMA Flood Insurance Rate Map for Zones AE, AH, A1-A30, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO, V1-V30, and VE that indicates the water surface elevation resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year.

*Development.* Any man-made change in improved and unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

*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 streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.

*Expansion to an existing manufactured home park or subdivision.* The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

*Flood.* The water from a river, stream, watercourse, lake or other body of standing water which temporarily overflows or inundates adjacent lands and which may affect other lands and activities through stage elevation backwater and/or increased ground water level. Also means a general and temporary condition of partial or complete inundation of normally dry land areas due to unusual and rapid accumulation or runoff of surface waters from any source.

*Flood, 100-year flood.* A flood having a recurrence interval that has a one-percent chance of being equaled or exceeded during any given year (one-percent-annual-chance flood). The terms "one-hundred-year flood" and "one-percent-chance flood" are synonymous with the term "100-year flood." The term does not imply that the flood will necessarily happen once every 100 years.

*Flood, 500-year flood.* A flood having a recurrence interval that has a 0.2-percent chance of being equaled or exceeded during any given year (0.2-percent-chance-annual flood). The term does not imply that the flood will necessarily happen once every 500 years.

*Flood, 500-year flood plain.* The area of land susceptible to being inundated as a result of the occurrence of a five-hundred-year flood.

*Flood insurance rate map.* The official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

*Flood insurance study.* The official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Boundary Floodway Map and the water surface elevation of the base flood.

*Flood plain.* The relatively flat or lowland area adjoining a river, stream, watercourse, lake or other body of standing water which has been or may be covered temporarily by flood water. For administrative purposes, the flood plain may be defined as the area that would be inundated by the one-hundred-year flood.

*Flood Plain Administrator.* The Flood Plain Administrator, also referred to in this Section as the "City Engineer," is the City employee appointed by the City Manager to administer the duties set forth in Section 17-16-200, FC - Flood Plain Control District.

*Flood plain district.* That portion of the flood plain subject to inundation by the one-hundred-year flood.

*Flood profile.* A graph or a longitudinal profile showing the relationship of the water surface elevation of a flood event to location along a stream or river.

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*Flood proofing.* A combination of structural provisions, changes or adjustments to properties and structures subject to flooding primarily for the reduction or elimination of flood damages to properties, water and sanitary facilities, structures and contents of buildings in a flood plain area.

*Flood protection elevation.* An elevation 1 foot above the elevation or *flood profile* of the one-hundred-year flood under existing channel and flood plain conditions.

*Flood storage area.* The fringe area of the flood plain in which flows are characteristically of shallow depths and low velocities.

*Floodway area.* That area of the flood plain required for a reasonable passage or conveyance of the *one-hundred-year flood* which is characterized by flows of two (2) feet per second or more, for depths of eighteen (18) inches or more and/or which will convey the flood flows with not more than one-half-foot rise in the water surface profile based on the assumption that there will be equal degree of encroachment extended for a significant reach on both sides of the watercourse.

*Floodway district.* That area represented by the floodway which has been hydraulically defined and shown on the map in the office of the City Clerk.

*Freeboard.* The vertical distance in feet above a predicted water surface elevation intended to provide a margin of safety to compensate for unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood, such as debris blockage of bridge openings and the increased runoff due to urbanization of the watershed.

*High water mark.* The line on the bank of a stream, river, lake or impoundment to which the high water ordinarily rises annually in seasons, as indicated by changes in the characteristics of soil, vegetation or other appropriate means, taking into consideration the characteristics of the surrounding areas. Where the ordinary high water mark cannot be found, it shall be presumed to be the edge of vegetation growing along the channel bank. In braided channels, the ordinary high water mark shall be measured so as to include the entire stream feature.

*Letter of map revision (LOMR).* FEMA's official revision of an effective flood insurance rate map (FIRM), or flood boundary and floodway map (FBFM), or both. 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 (BFEs), or the special flood plain area (SFHA).

*Letter of map revision based on fill (LOMR-F).* FEMA's modification of the special flood hazard area (SFHA) shown on the flood insurance rate map (FIRM) based on the placement of fill outside the existing regulatory floodway.

*Lowest floor.* The inside bottom surface of an enclosed area, including a basement. An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage, in areas 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 nonelevation design requirements of this Code.

*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.

*New construction.* The construction of a new structure (including the placement of a mobile home) or facility or the replacement of a structure or facility which has been totally destroyed.

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*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 streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of floodplain management regulations adopted by a community.

*No-rise certification.* A record of the results of an engineering analysis conducted to determine whether a project will increase flood heights in a floodway. A no-rise certification must be supported by technical data and signed by a registered Colorado professional engineer. The supporting technical data should be based on the standard step-backwater computer model used to develop the 100-year floodway shown on the flood insurance rate map (FIRM) or flood boundary and floodway map (FBFM).

*Reach.* A hydraulic engineering term to describe longitudinal segments of a stream or river. A *reach* will generally include the segments of the flood plain where flood heights are primarily controlled by man-made or natural flood plain obstructions or restrictions. In an urban area, the segment of a stream or river between two consecutive bridge crossings would most likely be a *reach*.

*Recreational vehicle - A vehicle which is: (1) Built on a single chassis; (2) 400 square feet or less when measured at the largest horizontal projections; (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 temporary living quarters for recreational, camping, travel, or seasonal use.*

*Special flood hazard area.* The land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year, i.e., the 100-year floodplain.

*Start of construction.* The date the building permit was issued, including substantial improvements, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured 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 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 a building, whether or not that alteration affects the external dimensions of the building.

*Structure.* A walled and roofed building, including a gas or liquid storage tank, which is principally above ground, as well as a manufactured home.

*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 just prior to when 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. The value of the structure shall be determined by the local jurisdiction having land use authority in the area of interest. This includes structures which have incurred "Substantial Damage", regardless of the actual repair work performed. The term does not, however, include either:

1. 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 conditions or

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2. Any alteration of a "historic structure" provided that the alteration will not preclude the structure's continued designation as a "historic structure."

*Violation.* The failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in 44 CFR Section 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.