

CHAPTER 12

FLOOD DAMAGE PREVENTION REGULATION

ARTICLE I

STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES

SECTION A. STATUTORY AUTHORIZATION

The Legislature of the State of Colorado has in the Colorado Land Use Act (C.R.S. § 24-65.1-101 *et seq.*, C.R.S. § 29-20-101, and C.R.S. § 30-28-101) delegated the responsibility of local governmental units to adopt regulations designed to minimize flood losses. Therefore, the Clear Creek Board of County Commissioners does ordain as follows:

SECTION B. FINDINGS OF FACT

1. The flood hazard areas of Clear Creek County are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the public health, safety and general welfare.
2. These flood losses are created by the cumulative effect of obstructions in floodplains which cause an increase in flood heights and velocities, and by the occupancy of flood hazards areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, floodproofed or otherwise protected from flood damage.

SECTION C. STATEMENT OF PURPOSE

It is the purpose of this regulation to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

1. Protect human life and health;
2. Minimize expenditure of public money for costly flood control projects;
3. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. Minimize prolonged business interruptions;
5. Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;
6. Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas;

7. Insure that potential buyers are notified that property is in a flood area;
8. Insure that those who occupy the areas of special flood hazards assume responsibility for their actions;
9. Minimize significant hazards to public health and safety or to property in flood hazards areas to encourage open space activities such as agriculture, recreation, and mineral extraction, and to ensure that any combination of these activities are conducted in a mutually compatible manner; and
10. Prohibit all activities which, in time of flooding, would create significant hazards to public health and safety or to property and to protect shallow wells, solid waste disposal sites, and septic tanks and sewage disposal systems from inundation by floodwaters.

SECTION D. METHODS OF REDUCING FLOOD LOSSES

In order to accomplish its purposes, this regulation uses the following methods:

1. Restrict or prohibit uses that are dangerous to health, safety or property in times of flood, or cause excessive increases in flood heights or velocities;
2. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
3. Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of flood waters;
4. Control filling, grading, dredging and other development which may increase flood damage;
5. Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

ARTICLE II

DEFINITIONS

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

ALLUVIAL FAN FLOODING - means flooding occurring on the surface of an alluvial fan or similar landform which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and unpredictable flow paths.

AREA OF SHALLOW FLOODING - means a designated AO, AH, or VO zone on a community's Flood Insurance Rate Map (FIRM) with a one percent chance or greater annual chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the path of

flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

AREA OF SPECIAL FLOOD HAZARD - is the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. The area may be designated as Zone A on the Flood Hazard Boundary Map (FHBM). After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zones A, AE, AH, AO, A1-99, VO, V1-30, VE or V.

BASE FLOOD - means the flood having a one percent chance of being equaled or exceeded in any given year.

BASEMENT - means any area of the building having its floor sub-grade (below ground level) on all sides.

DEVELOPMENT - means 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.

ELEVATED BUILDING – means for insurance purposes, a nonbasement building which has its lowest floor raised above ground level by foundation walls, shear walls, posts, piers, pilings or columns.

EXISTING CONSTRUCTION - means for the purposes of determining rates, structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. "Existing construction" may also be referred to as "existing structures."

EXISTING MANUFACTURED HOME PARK OR SUBDIVISION - means 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- means 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 OR FLOODING - means a general and temporary condition of partial or complete inundation of normally dry land areas from:

1. the overflow of inland waters;
2. the unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD INSURANCE RATE MAP (FIRM) - means an official map of a community, on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

FLOOD INSURANCE STUDY - is the official report provided by the Federal Emergency Management Agency. The report contains flood profiles, water surface elevation of the base flood, as well as the

Flood Boundary-Floodway Map.

FLOODPLAIN OR FLOOD-PRONE AREA - means any land area susceptible to being inundated by water from any source (see definition of flooding).

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

FLOODPLAIN MANAGEMENT REGULATIONS - means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

FLOOD PROTECTION SYSTEM - means those physical structural works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the areas within a community subject to a "special flood hazard" and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

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

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

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

HISTORIC STRUCTURE - means any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
3. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior; or
4. Individually listed on a local inventory or historic places in communities with historic preservation programs that have been certified either:
 - (a) by an approved state program as determined by the Secretary of the Interior; or
 - (b) directly by the Secretary of the Interior in states without approved programs.

LEVEE - means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to

provide protection from temporary flooding.

LEEVE SYSTEM - means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

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

MANUFACTURED HOME - means 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 - means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

MEAN SEA LEVEL - means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

NEW CONSTRUCTION - means, for the purpose of determining insurance rates, structures for which the "start of construction" commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

NEW MANUFACTURED HOME PARK OR SUBDIVISION - means 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.

RECREATIONAL VEHICLE - means 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.

START OF CONSTRUCTION - (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (Pub. L. 97-348)), includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a 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 - means that which is built or constructed, an edifice or building of any kind, or any piece or work artificially built up or composed of parts joined together in some definite manner; the use of which requires more or less permanent location on the ground; but not including earthworks, ditches, canals, dams, reservoirs, pipe-lines, telephone, telegraph, electric power lines, fences less than six (6) feet in height, walks, driveways, or curbs.

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

SUBSTANTIAL IMPROVEMENT - means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before "start of construction" of the improvement. This 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
2. Any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as a "historic structure."

VARIANCE - is a grant of relief to a person from the requirement of this regulation when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner otherwise prohibited by this regulation. (For full requirements see Section 60.6 of the National Flood Insurance Program regulations.)

VIOLATION - means 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 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.

WATER SURFACE ELEVATION - means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

ARTICLE III

GENERAL PROVISIONS

SECTION A. APPLICABILITY

The regulation shall apply to all parcels identified as areas of special flood hazard within the jurisdiction of Clear Creek County, as shown on the Flood insurance Rate Maps (FIRM) and Flood Insurance Study.

SECTION B. BASIS FOR ESTABLISHING AREAS OF SPECIAL FLOOD HAZARD

The areas of special flood hazard identified by the Federal Emergency Management Agency in a scientific and engineering report entitled, "The Flood Insurance Study for Clear Creek County," dated March 19, 2007, with accompanying Flood Insurance Rate Maps (FIRM) and any revisions thereto are hereby adopted by reference and declared to be a part of this regulation.

SECTION C. ESTABLISHMENT OF DEVELOPMENT PERMIT

A Development Permit shall be required to ensure conformance with the provisions of this regulation.

SECTION D. COMPLIANCE

No structure or land shall hereafter be constructed, located, altered, extended, converted or have its use changed without full compliance with the terms of this regulation and other applicable regulations.

SECTION E. ABROGATION AND GREATER RESTRICTIONS

1. This regulation is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this regulation and ~~other~~^{other} regulations, easements, covenants, or deed restrictions conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
2. Nothing in these regulations shall be construed as exempting an applicant for a permit from any other requirement of this jurisdiction or other state or federal laws and regulations.
3. To the extent that the requirements of these regulations differ from any other applicable requirements, the more restrictive requirements shall apply.

SECTION F. INTERPRETATION

In the interpretation and application of this regulation, all provisions shall be:

1. considered as minimum requirements;

2. liberally construed in favor of the governing body; and
3. deemed neither to limit nor repeal any other powers granted under State statutes.

SECTION G. ENFORCEMENT AND PENALTIES

1. Any person engaging in a development in the designated area of state interest or conducting a designated activity of state interest who does not obtain a Permit pursuant to these Regulations, who does not comply with Permit conditions or these Regulations, or who acts outside of the jurisdiction of the Permit may be enjoined by the County from engaging in such development or conducting such activities and may be subject to such other criminal or civil liability as may be prescribed by law.
2. If the County determines at any time that there are material changes in the construction or operation of the Project from that approved by the County, the Permit shall be immediately suspended and a hearing shall be held to determine whether new conditions are necessary to ensure compliance with Permit Application Approval Criteria or if the Permit should be revoked.
3. The remedies set forth here are cumulative of all other remedies, legal and equitable, provided by law.

SECTION H. WARNING AND DISCLAIMER OR LIABILITY

The degree of flood protection required by this regulation is considered reasonable by the Federal Emergency Management Agency for regulatory purposes and is based on scientific and engineering considerations. On rare occasions greater floods can and will occur and flood heights may be increased by man-made or natural causes. This regulation does not imply that land outside the areas of special flood hazards will be free from flooding or flood damages. This regulation shall not create liability on the part of the community or any official or employee thereof for any flood damages that result from reliance on this regulation or any administrative decision lawfully made thereunder.

SECTION I. NON-CONFORMING USES

The provisions of this chapter shall not apply to any non-conforming use existing on the date the area is designated or subjected to regulation, provided that, when such a non-conforming use shall be discontinued for six (6) months or more or a non-conforming structure is damaged or destroyed to the extent of at least fifty (50) percent of the appraised value, any reuse, reconstruction, or replacement of such structure shall be deemed a new use and shall be subject to the provisions of these regulations.

ARTICLE IV

ADMINISTRATION

SECTION A. DEVELOPMENT PERMIT PROCEDURES

1. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Article III, Section B. Application for a development permit shall be made on forms furnished by the Floodplain Administrator and may include, but not be limited to: Plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the areas in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing.

In the case of development proposals in special flood hazard areas established by Article III, Section B. where the provisions of Article IV, Section C.2. "Use of Other Base Flood Data" apply, the following information is required:

- (a) Elevation, in relation to mean sea level and based on a known point of reference, of the lowest floor (including basement) of all structures;
 - (b) Elevation, in relation to mean sea level, to which any structure has been floodproofed;
 - (c) Certification by a registered professional engineer that the floodproofing methods for any non-residential structure meet the floodproofing criteria in Article V, Section B.2.; and
 - (d) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
2. Approval or denial of a Development Permit by the Floodplain Administrator shall be based on all of the provisions of these regulations and the following relevant factors:
 - (a) The danger to life and property due to flooding or erosion damage;
 - (b) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - (c) The danger that materials may be swept onto other lands to the injury of others;
 - (d) The compatibility of the proposed use with existing and anticipated development;
 - (e) The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (f) 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 systems;
 - (g) 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;
 - (h) The necessity to the facility of a waterfront location, where applicable;
 - (i) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
 - (j) The relationship of the proposed use to the comprehensive plan for that area.

SECTION B. DESIGNATION OF THE FLOODPLAIN ADMINISTRATOR

The Clear Creek County Planning Director or their designee is hereby appointed the Floodplain Administrator to administer and implement the provisions of this regulation and other appropriate sections of 44 C.F.R. (National Flood Insurance Program Regulations) pertaining to floodplain management, by granting, granting with conditions, or denying development permit applications in

accordance with its provisions, except as provided by Article IV, Section D. of these regulations.

SECTION C. DUTIES & RESPONSIBILITIES OF FLOODPLAIN ADMINISTRATOR

Duties and responsibilities of the Floodplain Administrator shall include, but not be limited to, the following:

1. Permit review.
 - (a) Review all development permits to determine that the permit requirements of this regulation have been satisfied and to determine whether proposed building sites will be reasonably safe from flooding.
 - (b) Review all development permits to determine that all necessary permits have been obtained from those Federal, State, or local governmental agencies from which prior approval is required, which also may include watershed organizations and municipal watershed protection plans.
 - (c) Review all development permits to determine if the proposed development adversely affects the flood carrying capacity of the area of special flood hazard. For the purpose of this regulation, "adversely affects" means damage to adjacent properties because of rises in flood stages attributed to physical changes of the channel and the adjacent overbank areas.
 - (1) If it is determined that there is no adverse effect and the development is not a building, then the permit shall be granted without further consideration.
 - (2) If it is determined that there is an adverse effect, then technical justification (e.g., a registered professional engineer's certification that no impact to upstream/downstream properties will occur) for the proposed development shall be required.
2. Use of Other Base Flood Data.

When base flood elevation data has not been provided in accordance with Part 65 IDENTIFICATION AND MAPPING OF SPECIAL HAZARD AREAS of 44 C.F.R. Ch. 1, the Floodplain Administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available for the parcel from a Federal, State, or other source as criteria for requiring that new construction, substantial improvements, or other development in Zone A are administered in accordance with Article V, Section B.
3. Information to be Obtained and Maintained.

Where base flood elevations exist or are required under Article V, Section C., the following information will be obtained and maintained by the Floodplain Administrator:

 - (a) Obtain and record the actual elevation (in relation to mean sea level and based on a known point of reference) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.
 - (b) For all new or substantially improved floodproofed structures:
 - (1) Verify and record the actual elevation (in relation to mean sea level) to which the structure has been floodproofed; and
 - (2) Maintain the floodproofing certifications required in Article IV, Section A.1.(c).
 - (c) Maintain for public inspection all records pertaining to the provisions of this regulation.
4. Notification and Monitoring Procedures Concerning the Alteration of Watercourses.
 - (a) Notify adjacent communities, notify the appropriate watershed group and the Colorado Water Conservation Board prior to any alteration or relocation of a watercourse, and

- submit evidence of such notification to the Federal Emergency Management Agency.
 - (b) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.
 - (c) Approval and permit(s) from the U.S. Army Corps of Engineers.
 - (d) A monitored impact assessment for a minimum of ten (10) years is required.
5. Interpretation of FIRM Boundaries
Make interpretations, where needed, as to the exact location of the boundaries of the areas of special flood hazards (e.g., where there appears to be a conflict between a mapped boundary and actual field conditions).
 6. When a regulatory floodway has not been designated, the Floodplain Administrator must require that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.
 7. Under the provisions of 44 C.F.R. Chapter 1, Section 65.12, of the National Flood Insurance Program regulations, a community may approve certain development in Zones A1-30, AE, AH, on the community's FIRM which increases the water surface elevation of the base flood by more than one foot, provided that the community **first** applies for a conditional FIRM revision through FEMA (Conditional Letter of Map Revision).

SECTION D. VARIANCE PROCEDURES

The issuance of a variance is for floodplain management purposes only. Insurance premium rates are determined by statute according to actuarial risk and will not be modified by the granting of a variance. The County, after examining the applicants' hardships, shall approve or disapprove a request. While the granting of a variance is generally limited to a lot size less than one-half acre, deviations from that limitation may occur.

1. The Clear Creek Board of County Commissioners is hereby appointed to review, grant, grant with conditions, or deny all variance requests in accordance with the provisions of this regulation.
2. The Clear Creek Board of County Commissioners shall hear and render judgement on an appeal only when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement or administration of this regulation.
3. Any person or persons aggrieved by the decision of the Clear Creek Board of County Commissioners or any taxpayer, may appeal such decision to the District Court of Clear Creek County, as provided in Rule 106(a)(4) of the Colorado Rules of Civil Procedure.
4. In passing upon such applications, the Clear Creek Board of County Commissioners shall consider all technical evaluations, all relevant factors, standards specified in other Sections of this regulation, and:
 - (a) the danger that materials may be swept onto other lands to the injury of others;

- (b) the danger to life and property due to flooding or erosion damage;
 - (c) the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners;
 - (d) the importance of the services provided by the proposed facility to the community;
 - (e) the necessity to the facility of a waterfront location, where applicable;
 - (f) the availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
 - (g) the compatibility of the proposed use with the existing and anticipated development;
 - (h) the relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
 - (i) the safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (j) the expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and effects of wave action, if applicable, expected at the site; and
 - (k) the costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, streets and bridges.
5. The Floodplain Administrator shall maintain a record of all actions involving an appeal and shall report variances to the Federal Emergency Management Agency upon request.
 6. Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this regulation.
 7. Variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing the relevant factors in Article IV, Section A.2. of this Article have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.
 8. Upon consideration of the factors of this Section and the purposes of these regulations, the Clear Creek Board of County Commissioners may attach such conditions to the granting of variances as it deems necessary to further the purposes and objectives of this regulation (Article I, Section C.).
 9. Variances shall not be issued within any designated regulatory floodway if any increase in flood levels will occur during the base flood discharge.
 10. 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.
 11. Prerequisites for granting variances:
 - (a) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - (b) Variances shall only be issued upon:
 - (1) showing a good and sufficient cause;
 - (2) a determination that failure to grant the variance would result in exceptional

- hardship to the applicant; and
 - (3) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or regulations.
 - (c) Any application 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 reduced lowest floor elevation.
- 12. Variances may be issued for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that:
 - (a) the criteria outlined in Article IV, Sections D.1. through D.9. are met; and
 - (b) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

ARTICLE V

PROVISIONS FOR FLOOD HAZARD REDUCTION

SECTION A. GENERAL STANDARDS

In all areas of special flood hazards, the following provisions are required for all new construction and substantial improvements:

1. All new construction or substantial improvements shall 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;
2. All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;
3. All new construction or substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
4. All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
5. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
6. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the systems into flood waters; and,
7. On-site disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

8. When a regulatory floodway has not been designated, the Floodplain Administrator must require that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community; and
9. Under the provisions of 44 C.F.R. Chapter 1, Section 65.12, of the National Flood Insurance Program regulations, a community may approve certain development in Zones A1-30, AE, AH, on the community's FIRM which increases the water surface elevation of the base flood by more than one foot, provided that the community **first** applies for a conditional FIRM revision through FEMA (Conditional Letter of Map Revision).

SECTION B. SPECIFIC STANDARDS

In all areas of special flood hazards where base flood elevation data is available or has been provided as set forth in (i) Article III, Section B, (ii) Article IV, Section C.2., or (iii) Article V, Section C.2., the following standards are required:

1. **Residential Construction** - new construction and substantial improvement of any residential structure shall have the lowest floor (including basement), elevated to or above the base flood elevation. A registered professional engineer or land surveyor shall submit a certification to the Floodplain Administrator that the standard of this subsection as proposed in Article IV, Section A.1.(a), is satisfied.
2. **Nonresidential Construction** - new construction and substantial improvements of any commercial, industrial or other non-residential structure shall either have the lowest floor (including basement) elevated to the level of the base flood elevation or, together with attendant utility and sanitary facilities, be designed so that below the base flood level 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 professional engineer shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the Floodplain Administrator.
3. **Below-Grade Residential Crawlspace Construction** – new construction and substantial improvement of any below-grade crawlspace shall:
 - (a) have the interior grade elevation that is below base flood elevation no lower than two feet below the lowest adjacent grade;
 - (b) Have the height of the below-grade crawlspace measured from the interior grade of the crawlspace to the top of the foundation wall, not exceed four feet at any point;
 - (c) Have an adequate drainage system that allows floodwaters to drain from the interior area of the crawlspace following a flood;
 - (d) Be anchored to prevent flotation, collapse, or lateral movement of the structure and be capable of resisting the hydrostatic and hydrodynamic loads;

- (e) Be constructed with materials and utility equipment resistant to flood damage;
- (f) Be constructed using methods and practices that minimize flood damage;
- (g) Be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;
- (h) 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 must 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, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

4. **Enclosures** - new construction and substantial improvements, with fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or meet or exceed the following minimum criteria:

- (a) 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.
- (b) The bottom of all openings shall be no higher than one foot above grade.
- (c) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

5. **Manufactured Homes** -

- (a) Require that all manufactured homes to be placed within Zone A on a community's FHBM or FIRM shall be installed using methods and practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.
- (b) Require that manufactured homes that are placed or substantially improved within Zones A1-30, AH, and AE on the community's FIRM on sites (i) outside of a manufactured home park or subdivision, (ii) in a new manufactured home park or subdivision, (iii) in an expansion to an existing manufactured home park or subdivision, or (iv) in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
- (c) Require that manufactured homes be placed or substantially improved on sites in an existing manufactured home park or subdivision with Zones A1-30, AH and AE on the

community's FIRM that are not subject to the provisions of paragraph (4) of this section be elevated so that either:

- (1) the lowest floor of the manufactured home is at or above the base flood elevation; or
- (2) the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

6. **Recreational Vehicles** - Require that recreational vehicles placed on sites within Zones A1-30, AH, and AE on the community's FIRM either:

- (a) be on the site for fewer than 180 consecutive days;
- (b) be fully licensed and ready for highway use; or
- (c) meet the permit requirements of Article IV, Section A.1., and the elevation and anchoring requirements for "manufactured homes" in paragraph 5. of this Section. 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.

SECTION C. STANDARDS FOR SUBDIVISION PROPOSALS

1. These regulations apply to all subdivision proposals or subdivision development. All subdivision proposals or subdivision development shall meet the standards set forth in Article 14 (Design Criteria) of Clear Creek County's Subdivision Regulations.
2. Base flood elevation data shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or 5 acres, whichever is lesser, if not otherwise provided pursuant to Article III, Section B. or Article IV, Section C.2. of this regulation.
3. All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.
4. All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

SECTION D. STANDARDS FOR AREAS OF SHALLOW FLOODING (AO/AH ZONES)

Located within the areas of special flood hazard established in Article III, Section B., are areas designated as shallow flooding. These areas have special flood hazards associated with base flood depths of 1 to 3 feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

1. All new construction and substantial improvements of **residential** structures have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth

number specified in feet on the community's FIRM (at least two feet if no depth number is specified).

2. All new construction and substantial improvements of **non-residential** structures:
 - (a) have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified); or
 - (b) together with attendant utility and sanitary facilities be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy.
3. A registered professional engineer shall submit a certification to the Floodplain Administrator that the standards of this Section, as proposed in Article IV, Section A.1.(a), are satisfied.
4. Require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures.

SECTION E. FLOODWAYS

Floodways - located within areas of special flood hazard established in Article III, Section B., are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles and erosion potential, the following provisions shall apply:

1. Encroachments are prohibited, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway *unless* it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.
2. If Article V, Section E.1. above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Article 5.
3. Under the provisions of 44 C.F.R. Chapter 1, Section 65.12, of the National Flood Insurance Regulations, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community **first** applies for a conditional FIRM and floodway revision through FEMA.