



We want to build on or develop property that is in a FEMA floodplain, what are the requirements?

Teller County, in an attempt to reduce future flood damage and associated costs, voluntarily participates in the National Flood Insurance Program (NFIP) through its adoption and enforcement of floodplain regulations. **In exchange, the NFIP makes federally-backed flood insurance available to homeowners, renters and business owners at a subsidized cost.** Flood insurance is designed to provide an alternative to disaster assistance by reducing the cost of repairing flood damage to structures and their contents. FEMA estimates that flood damage is reduced by nearly \$1 billion a year nation-wide because of the implementation of sound floodplain management and the purchase of flood insurance. Additionally, structures constructed in compliance with NFIP standards suffer approximately 80 percent less damage annually compared to those that are non-compliant.

From the Teller County Land Use Regulations (LUR) Section 6.3: **"No structure or land shall hereafter be located, altered, or have its use changed within the SFHA without full compliance with the terms of these Section 6.3 regulations and other applicable regulations. Nothing herein shall prevent the Board of County Commissioners from taking such lawful action as is necessary to prevent or remedy any violation. These regulations meet the minimum requirements as set forth by the Colorado Water Conservation Board and the NFIP".**

Please see attached Land Use Regulations Section 6.3 for detailed information regarding building/developing in a FEMA designated floodplain.

Section 6.3 FLOOD HAZARD AREAS

SECTION 6.3.1. TITLE AND PURPOSE

A. Statutory Authorization. The Legislature of the State of Colorado has, in Title 29, Article 20 of the Colorado Revised Statutes, delegated the responsibility to local governmental units to adopt land use regulations, including regulations designed to minimize flood losses. Therefore, the following *Section 6.3* regulations are hereby adopted.

B. Findings of Fact

1. Flood hazard areas are subject to periodic inundation, which can result 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 health, safety and general welfare of the public.

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 hazard areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, floodproofed, or otherwise protected from flood damage.

C. Statement of Purpose. The purpose of these *Section 6.3* regulations is to promote public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to help:

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 critical facilities, infrastructure and other public facilities such as water, sewer and gas mains; electric and communications stations; and 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; and
7. Ensure that potential buyers are notified that property is located in a flood hazard area.

D. Methods of Reducing Flood Losses. In order to accomplish its purposes, these *Section 6.3* regulations use 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; and
5. Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

SECTION 6.3.2. SPECIFIC DEFINITIONS

Unless specifically defined below, words or phrases used in these *Section 6.3* regulations shall be interpreted to give them the meaning they have in common usage and to give *Section 6.3*

regulations their most reasonable application. The definitions below are applicable to terms used in *Section 6.3* only and do not apply to other sections of these Regulations.

100-YEAR FLOOD. A flood having a recurrence interval that has a one-percent chance of being equaled or exceeded during any given year (1-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 one hundred years.

100-YEAR FLOODPLAIN. The area of land susceptible to being inundated as a result of the occurrence of a one-hundred-year 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 five hundred years.

500-YEAR FLOODPLAIN. The area of land susceptible to being inundated as a result of the occurrence of a five-hundred-year flood.

ADDITION. Any activity that expands the enclosed footprint or increases the square footage of an existing structure.

AREA OF SHALLOW FLOODING. A designated Zone AO or AH on a 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.

BASE FLOOD ELEVATION (BFE). The elevation shown on a FIRM 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.

BASEMENT. Any area of a building having its floor sub-grade (below ground level) on all sides.

CHANNEL. The physical confine of stream or waterway consisting of a bed and stream banks, existing in a variety of geometries.

CHANNELIZATION. The artificial creation, enlargement or realignment of a stream channel.

CODE OF FEDERAL REGULATIONS (CFR). The codification of the general and permanent Rules published in the Federal Register by the executive departments and agencies of the Federal Government. It is divided into 50 titles that represent broad areas subject to Federal regulation.

COMMUNITY. Any political subdivision in Colorado that has authority to adopt and enforce floodplain regulations through zoning, including, but not limited to, cities, towns, unincorporated areas in the counties, Indian tribes and drainage and flood control districts.

CONDITIONAL LETTER OF MAP REVISION (CLOMR). FEMA's comment on a proposed project, which does not revise an effective floodplain map, that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodplain.

CRITICAL FACILITY. A structure or related infrastructure, but not the land on which it is situated, as specified in *Section 6.3.5.H*, that if flooded may result in significant hazards to public health and safety or interrupt essential services and operations for the community at any time before, during and after a flood.

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.

DIGITAL FLOOD INSURANCE RATE MAP (DFIRM). FEMA digital floodplain maps that serve as "regulatory floodplain maps" for insurance and floodplain management purposes.

ELEVATED BUILDING. A non-basement building (1) built, in the case of a building in Zones A1-30, AE, A, A99, AO, AH, B, C, X, and D, to have the top of the elevated floor above the ground level by means of pilings, columns (posts and piers), or shear walls parallel to the flow of the water, and (2) adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In the case of Zones A1-30, AE, A, A99, AO, AH, B, C, X, and D, "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters.

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 adoption of floodplain regulations.

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

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA). The agency responsible for administering the NFIP.

FEDERAL REGISTER. The official daily publication for Rules, proposed Rules, and notices of Federal agencies and organizations, as well as executive orders and other presidential documents.

FLOOD OR FLOODING. A general and temporary condition of partial or complete inundation of normally dry land areas from (1) the overflow of water from channels and reservoir spillways; (2) the unusual and rapid accumulation or runoff of surface waters from any source; or (3) mudslides or mudflows that occur from excess surface water that is combined with

mud or other debris that is sufficiently fluid so as to flow over the surface of normally dry land areas (such as earth carried by a current of water and deposited along the path of the current).

FLOOD CONTROL STRUCTURE. A physical structure designed and built expressly or partially for the purpose of reducing, redirecting, or guiding flood flows along a particular waterway. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

FLOOD INSURANCE RATE MAP (FIRM). An official map of a community, on which FEMA has delineated both the SFHAs and the risk premium zones applicable to the community.

FLOOD INSURANCE STUDY (FIS). The official report provided by FEMA. The report contains the FIRM as well as flood profiles for studied flooding sources that can be used to determine BFEs for some areas.

FLOODPLAIN ADMINISTRATOR. The official designated by title to administer and enforce these *Section 6.3* regulations.

FLOODPLAIN OR FLOOD-PRONE AREA. Any land area susceptible to being inundated as the result of a flood, including the area of land over which floodwater would flow from the spillway of a reservoir.

FLOODPLAIN DEVELOPMENT PERMIT. A permit required before construction or development begins within any SFHA. If FEMA has not defined the SFHA within a community, a Floodplain Development permit shall be required for all proposed construction or other development including the placement of manufactured homes, so that it may determine whether such construction or other development is proposed within flood-prone areas. Floodplain Development Permits are required to ensure that proposed development projects meet the requirements of the NFIP and these *Section 6.3* regulations.

FLOODPLAIN MANAGEMENT. The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and these *Section 6.3* regulations.

FLOODPLAIN REGULATIONS. Zoning regulations, subdivision regulations, building codes, health regulations, special purpose regulations (such as these *Section 6.3* regulations, grading regulations and erosion control regulations) 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.

FLOODPROOFING. Any combination of structural and/or 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). The channel of a river or other watercourse and the adjacent land areas that must be kept free of obstructions in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. The Colorado statewide standard for the designated height to be used for all newly studied reaches shall be one-half foot (six inches). LOMRs to existing floodway

delineations may continue to use the floodway criteria in place at the time of the existing floodway delineation.

FUNCTIONALLY DEPENDENT USE. A use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port or facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

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

HISTORIC STRUCTURE. Any structure that is (1) listed individually in the National Register of Historic Places (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 of historic places in communities with historic preservation programs that have been certified either by an approved state program as determined by the Secretary of the Interior or directly by the Secretary of the Interior in states without approved programs.

LETTER OF MAP REVISION (LOMR). FEMA's official revision of an effective 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 BFEs, or the SFHA.

LETTER OF MAP REVISION BASED ON FILL (LOMR-F). FEMA's modification of the SFHA shown on the FIRM based on the placement of fill outside the existing regulatory floodway.

LOWEST FLOOR. The lowest floor of the lowest enclosed area (including basement). Any floor used for living purposes which includes working, storage, sleeping, cooking and eating, or recreation or any combination thereof. This includes any floor that could be converted to such a use such as a basement or crawl space. The lowest floor is a determinate for the flood insurance premium for a building, home or business. 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 NFIP regulations.

MANUFACTURED HOME. A structure transportable in one or more sections which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. This term 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.

MATERIAL SAFETY DATA SHEET (MSDS). A form with data regarding the properties of a particular substance. An important component of product stewardship and workplace safety, it is intended to provide workers and emergency personnel with procedures for handling or working with that substance in a safe manner, and includes information such as physical data (melting point, boiling point, flash point, etc.), toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill-handling procedures.

MEAN SEA LEVEL. For purposes of the NFIP, the North American Vertical Datum (NAVD) of 1988 or other datum, to which BFEs shown on a FIRM are referenced.

NATIONAL FLOOD INSURANCE PROGRAM (NFIP). FEMA's program of flood insurance coverage and floodplain management administered in conjunction with the Robert T. Stafford Relief and Emergency Assistance Act. The NFIP has applicable Federal regulations promulgated in Title 44 of the CFR. The U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968.

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 these *Section 6.3 Flood Hazard Areas* regulations.

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 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 FIRM or Flood Boundary Flood Map.

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.

SPECIAL FLOOD HAZARD AREA (SFHA). The land in the floodplain subject to a one percent or greater chance of flooding in any given year (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 or manufactured home, including a gas or liquid storage tank, principally above ground.

SUBSTANTIAL DAMAGE. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed fifty 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 fifty 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 (2) any alteration of an Historic Structure provided that the alteration will not preclude the structure's continued designation as an Historic Structure.

THRESHOLD PLANNING QUANTITY (TPQ). A quantity designated for each chemical on the list of extremely hazardous substances that triggers notification by facilities to the State that such facilities are subject to emergency planning requirements.

VARIANCE. A grant of relief to a person from the requirement of these *Section 6.3* regulations when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner otherwise prohibited by these *Section 6.3* regulations. (For full requirements see both *Section 60.6* of the NFIP regulations and *Section 2.12 Zoning Variances* of these Regulations).

VIOLATION. The failure of a structure or other development to be fully compliant with these *Section 6.3* regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required is presumed to be in violation until such time as that documentation is provided (See also *Section 1.15 Violations* of these Regulations).

WATER SURFACE ELEVATION. The height, in relation to the North American Vertical Datum (NAVD) of 1988 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

SECTION 6.3.3. GENERAL PROVISIONS

- A. **Lands to which these Section 6.3 Regulations Apply.** These *Section 6.3* regulations shall apply to all SFHAs and areas removed from the floodplain by the issuance of a FEMA LOMR-F within the jurisdiction of Teller County, Colorado.
- B. **Basis for Establishing the SFHAs.** The SFHAs identified by FEMA in a scientific and engineering report entitled, "The Flood Insurance Study for Teller County, Colorado" dated September 25, 2009, with accompanying FIRMs and/or Flood Boundary-Floodway Maps and any revisions thereto are hereby adopted by reference and declared to be a part of these *Section 6.3* regulations. SFHAs identified by the FIS and attendant mapping are the minimum area of applicability of these *Section 6.3* regulations and may be supplemented by studies designated and approved by the Board of County Commissioners. The Floodplain Administrator shall keep a copy of the FIS, DFIRMs, FIRMs and/or Flood Boundary – Flood Maps on file and available for public inspection.
- C. **Establishment of Floodplain Development Permit.** A Floodplain Development Permit shall be required to ensure conformance with the provisions of these *Section 6.3* regulations.
- D. **Compliance.** No structure or land shall hereafter be located, altered, or have its use changed within the SFHA without full compliance with the terms of these *Section 6.3* regulations and other applicable regulations. Nothing herein shall prevent the Board of County Commissioners from taking such lawful action as is necessary to prevent or remedy any violation. These regulations meet the minimum requirements as set forth by the Colorado Water Conservation Board and the NFIP.
- E. **Abrogation and Greater Restrictions.** These *Section 6.3* regulations are not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where these *Section 6.3* regulations and other regulation, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
- F. **Interpretation.** In the interpretation and application of these *Section 6.3* regulations, 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.
- G. **Warning and Disclaimer of Liability.** The degree of flood protection required by these *Section 6.3* regulations are considered reasonable 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.

These *Section 6.3* regulations do not imply that land outside the SFHA or uses permitted within such areas will be free from flooding or flood damages. These *Section 6.3* regulations shall not create liability on the part of the County or any official or employee

thereof for any flood damages that result from reliance on these *Section 6.3* regulations or any administrative decision lawfully made thereunder.

No term or condition of these *Section 6.3* regulations shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections or other provisions of the Colorado Governmental Immunity Act, as now or hereafter amended.

- H. **Severability.** These *Section 6.3* regulations and the various parts thereof are hereby declared to be severable. Should any section of these *Section 6.3* regulations be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of these *Section 6.3* regulations as a whole, or any portion thereof other than the section so declared to be unconstitutional or invalid.

SECTION 6.3.4. ADMINISTRATION

- A. **Designation of the Floodplain Administrator.** The Zoning Official or their designee (collectively with any other necessary County staff) acts as the Floodplain Administrator to administer, implement and enforce the provisions of these Flood Hazard Areas regulations and other appropriate sections of 44 CFR (NFIP Regulations) pertaining to floodplain management.

- B. **Duties and Responsibilities of the Floodplain Administrator.** Duties and responsibilities of the Floodplain Administrator (collectively with any other necessary County staff) shall include, but not be limited to, the following:

1. Maintain and hold open for public inspection all records pertaining to the provisions of these *Section 6.3* regulations, including the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures and any floodproofing certificate required by *Section 6.3.4.C*.
2. Review, approve, or deny all applications for Floodplain Development Permits required by these *Section 6.3* regulations.
3. Review Floodplain Development Permit applications to determine whether a proposed building site, including the placement of manufactured homes, will be reasonably safe from flooding.
4. Review Floodplain Development Permit applications for proposed development to assure that all necessary approvals have been obtained from those Federal, State or local governmental agencies (including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334) from which prior approval is required.
5. Inspect all development subject to a Floodplain Development Permit at appropriate times during the period of construction to ensure compliance with all

provisions of these *Section 6.3* regulations, including proper elevation of the structure.

6. Interpret, where interpretation is needed, the exact location of the boundaries of the SFHA (for example, where there appears to be a conflict between a mapped boundary and actual field conditions).
7. Obtain, review and reasonably utilize any BFE data and Floodway data available from a Federal, State, or other source when BFE data has not been provided in accordance with *Section 6.3.3.B* in order to administer the provisions of *Section 6.3.5*.
8. Prohibit the permitting of new construction, substantial improvements, or other development (including fill) or waterways with BFEs for which a regulatory Floodway has not been designated within Zones A1-30 and AE on the 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-half foot at any point.
9. Approve, under the provisions of 44 CFR Chapter I, Section 65.12 of the NFIP regulations, certain development in Zones A1-30, AE, AH on the FIRM which increases the water surface elevation of the base flood by more than one-half foot provided that a CLOMR has been applied for, receives FEMA approval, and fulfills the requirements for such revisions as established under the provisions of Section 65.12.
10. Notify, in riverine situations, adjacent communities and the Colorado Water Conservation Board prior to any alteration or relocation of a watercourse and submit evidence of such notification to FEMA.
11. Help ensure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained.

C. Permit Procedures. Application for a Floodplain Development Permit shall be on forms furnished by the Floodplain Administrator and shall include, but not be limited to, 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 of the foregoing in relation to SFHA. Additionally, the following information is required:

1. Elevation (in relation to mean sea level), of the lowest floor (including basement) of all new and substantially improved structures;
2. Elevation in relation to mean sea level to which any nonresidential structure shall be floodproofed;

3. A certificate from a registered Colorado Professional Engineer or Architect that the nonresidential floodproofed structure shall meet the floodproofing criteria of *Section 6.3.5.B.2*;
4. Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development; and
5. Maintain a record of all such information in accordance with *Section 6.3.4.B*.

Approval or denial of a Floodplain Development Permit by the Floodplain Administrator shall be based on all of the provisions of these *Section 6.3* regulations and the following relevant factors:

6. The danger to life and property due to flooding or erosion damage;
7. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
8. The danger that materials may be swept onto other lands to the injury of persons or property;
9. The compatibility of the proposed use with existing and anticipated development;
10. The safety of access to the property in times of flood for ordinary and emergency vehicles;
11. 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;
12. 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;
13. The necessity to the facility of a waterfront location, where applicable;
14. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use; and
15. The relationship of the proposed use to the comprehensive plan for that area.

D. Variance Procedures. The following shall apply in addition to requirements of *Sections 1.14* and *2.12* of these Regulations:

1. The Board of Adjustment shall hear and render judgment on requests for variances from the requirements of these *Section 6.3* regulations.
2. The Board of Adjustment shall hear and render judgment on an appeal only when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement or administration of these *Section 6.3* regulations.

3. Any person or persons aggrieved by the decision of the Board of Adjustment may appeal such decision as provided in these Regulations.
4. The Floodplain Administrator or their designee(s) (collectively with any other necessary County staff) shall maintain a record of all actions involving an appeal and shall report variances to FEMA upon request.
5. 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 *Section 6.3.4.C* have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.
6. Upon consideration of the factors noted above and the intent of these *Section 6.3* regulations, the Board of Adjustment may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of *Section 6.3.1.C*.
7. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
8. 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.
9. Prerequisites for granting variances are (a) variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief, and (b) variances shall only be issued upon (i) showing a good and sufficient cause; and (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, significant public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or regulations.
10. Any applicant to whom a variance is granted shall be advised, with written confirmation in the granted variance, that the structure will be permitted to be built with the lowest floor elevation below the BFE, and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
11. 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 *Section 6.3.4.D.1-9* 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.

SECTION 6.3.5. PROVISIONS FOR FLOOD HAZARD REDUCTION

- A. General Standards.** In all SFHAs 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 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 manufactured homes 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.
 6. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
 7. 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,
 8. On-site waste disposal systems shall be located to help avoid impairment to them or contamination from them during flooding.
- B. Specific Standards.** In all SFHAs where BFE data has been provided as set forth in Section 6.3.3.B, Section 6.3.4.B.7, or Section 6.3.5.G, the following provisions are required:
1. **Residential Construction.** New construction and Substantial Improvement of any residential structure shall have the lowest floor (including basement), electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork), elevated to one foot above the BFE. Upon completion of the structure, the elevation of the lowest floor, including basement, shall be certified by a registered Colorado Professional engineer,

architect, or land surveyor. Such certification shall be submitted to the Floodplain Administrator.

2. **Nonresidential Construction.** With the exception of Critical Facilities outlined in *Section 6.3.5.H*, new construction and Substantial Improvements of any commercial, industrial, or other nonresidential structure shall either have the lowest floor (including basement), electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork), elevated to one foot above the BFE or, together with attendant utility and sanitary facilities, be designed so that at one foot above the BFE 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/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. Such certification shall be maintained by the Floodplain Administrator, as provided in *Section 6.3.4.C*.

3. **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 these enclosure requirements must either be certified by a registered Colorado Professional engineer or architect 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, and (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.

4. **Manufactured Homes.** All manufactured homes that are placed or substantially improved within Zones A1-30, AH, and AE on the FIRM on sites (a) outside of an existing manufactured home park or subdivision, (b) in a new manufactured home park or subdivision, (c) in an expansion to an existing manufactured home park or subdivision, or (d) 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, electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork), are elevated to one foot above the BFE and be securely anchored to

an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

All manufactured homes placed or substantially improved on sites in an existing manufactured home park or subdivision within Zones A1-30, AH and AE on the FIRM that are not subject to the provisions of the above paragraph, shall be elevated so that either (e) the lowest floor of the manufactured home, electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork), are one foot above the BFE, or (f) 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.

5. **Recreational Vehicles.** All recreational vehicles placed on sites within Zones A1-30, AH, and AE on the FIRM shall either (a) be on the site for fewer than 180 consecutive days, (b) be fully operational, licensed, insured and ready for highway use, or (c) meet the permit requirements of *Section 6.3.4.C* and the elevation and anchoring requirements for Manufactured Homes in *Section 6.3.5.B.4*.

A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

- C. **Standards for Areas of Shallow Flooding (AO/AH Zones).** Located within the SFHA established in *Section 6.3.3.B* are areas designated as shallow flooding. These areas have special flood hazards associated with base flood depths of one to three feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and where velocity flow may be evident. For such shallow flooding areas, characterized by ponding or sheet flow, the following provisions apply:

1. **Residential Construction.** All new construction and Substantial Improvements of residential structures must have the lowest floor (including basement), electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork), elevated above the highest adjacent grade at least one foot above the depth number specified in feet on the community's FIRM (at least three feet if no depth number is specified). Upon completion of the structure, the elevation of the lowest floor, including basement, shall be certified by a registered Colorado Professional Engineer, architect, or land surveyor. Such certification shall be submitted to the Floodplain Administrator.
2. **Nonresidential Construction.** With the exception of Critical Facilities outlined in *Section 6.3.5.H*, all new construction and Substantial Improvements of non-residential structures, must have the lowest floor (including basement),

electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork), elevated above the highest adjacent grade at least one foot above the depth number specified in feet on the FIRM (at least three feet if no depth number is specified), or together with attendant utility and sanitary facilities, be designed so that the structure is watertight to at least one foot above the base flood level 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. A registered Colorado Professional engineer or architect shall submit a certification to the Floodplain Administrator that the standards of *Section 6.3.4.C* are satisfied.

Within Zones AH or AO, adequate drainage paths around structures on slopes are required to guide flood waters around and away from proposed structures.

D. Floodways. Floodways are administrative limits and tools used to regulate existing and future floodplain development. Colorado has adopted Floodway standards that are more stringent than the FEMA minimum standard. Located within SFHAs established in *Section 6.3.3.B* are areas designated as Floodways. Since the Floodway is an extremely hazardous area due to the velocity of floodwaters 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 by a licensed Colorado Professional engineer and in accordance with standard engineering practice that the proposed encroachment would not result in any increase (requires a No-Rise Certification) in flood levels during the occurrence of the base flood discharge.
2. If *Section 6.3.5.D.1* above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of *Section 6.3.5.A* and *Section 6.3.5.B*.
3. Under the provisions of 44 CFR Chapter 1, Section 65.12 of the National Flood Insurance Regulations, encroachments may be permitted within the adopted regulatory floodway that would result in an increase in BFEs provided that a CLOMR has been applied for and approved through FEMA.

E. Alteration of a Watercourse. For all proposed developments that alter a watercourse within a SFHA, the following standards apply:

1. Channelization and flow diversion projects shall appropriately consider issues of sediment transport, erosion, deposition, and channel migration and properly mitigate potential problems through the project as well as upstream and downstream of any improvement activity. A detailed analysis of sediment transport and overall channel stability should be considered, when appropriate, to assist in determining the most appropriate design.

2. Channelization and flow diversion projects shall evaluate the residual 100-year floodplain.
3. Any channelization or other stream alteration activity proposed by a project proponent must be evaluated for its impact on the regulatory floodplain and be in compliance with all applicable Federal, State and local floodplain rules and regulations.
4. Any stream alteration activity shall be designed and sealed by a registered Colorado Professional engineer or Certified Professional hydrologist.
5. All activities within the regulatory floodplain shall meet all applicable Federal, State and Section 6.3 regulations.
6. Within the Regulatory Floodway, stream alteration activities shall not be constructed unless the project proponent demonstrates through a Floodway analysis and report, sealed by a registered Colorado Professional engineer, that there is not more than a 0.00-foot rise in the proposed conditions compared to existing Floodway conditions resulting from the project, otherwise known as a No-Rise Certification, unless a CLOMR and Floodway revision in accordance with *Section 6.3.5.D* has been received.
7. Maintenance shall be required for any altered or relocated portions of watercourses so that the flood-carrying capacity is not diminished.

F. Properties Removed from the Floodplain by Fill. A Floodplain Development 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 LOMR-F, unless such new structure or addition complies with the following:

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 one foot above the BFE 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 one foot above the BFE 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 one 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 of effects of buoyancy.

G. Standards for Subdivision Proposals

1. All subdivision proposals including the placement of manufactured home parks and subdivisions shall be reasonably safe from flooding. If a subdivision or other development proposal is in a flood-prone area, the proposal shall minimize potential flood damage.
2. All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet the Floodplain Development Permit requirements of *Sections 6.3.3.C, 6.3.4.C and 6.3.5.*
3. BFE data shall be generated and provided for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than fifty lots or five acres, whichever is lesser, if not otherwise provided pursuant to *Section 6.3.3.B or 6.3.4.B.*
4. All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.
5. 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.

H. Standards and Classifications for Critical Facilities. Critical Facilities are classified as (1) essential services; (2) hazardous materials; (3) at-risk populations; and (4) vital to restoring normal services and it is the responsibility of the Board of County Commissioners to identify and confirm that specific structures meet the following criteria:

1. **Essential Services.** Include public safety, emergency response, emergency medical, designated emergency shelters, communications, public utility plant facilities, and transportation lifelines. These facilities consist of (a) public safety (police stations, fire and rescue stations, emergency vehicle and equipment storage, and, emergency operation centers); (b) emergency medical (hospitals, ambulance service centers, urgent care centers having emergency treatment functions, and non-ambulatory surgical structures but excluding clinics, doctors offices, and non-urgent care medical structures that do not provide these functions); (c) designated emergency shelters; (d) communications (main hubs for telephone, broadcasting equipment for cable systems, satellite dish systems, cellular systems, television, radio, and other emergency warning systems, but excluding towers, poles, lines, cables, and conduits); (e) public utility plant facilities for generation and distribution (hubs, treatment plants, substations and pumping stations for water, power and gas, but not including towers, poles, power lines, buried pipelines, transmission lines, distribution lines, and service lines); and (f) air transportation lifelines (airports (municipal and larger), helicopter pads

and structures serving emergency functions, and associated infrastructure (aviation control towers, air traffic control centers, and emergency equipment aircraft hangars).

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

Public utility plant facilities may be exempted if it can be demonstrated that the facility is an element of a redundant system for which service will not be interrupted during a flood. At a minimum, it shall be demonstrated that redundant facilities are available (either owned by the same utility or available through an intergovernmental agreement or other contract) and connected, the alternative facilities are either located outside of the 100-year floodplain or are compliant with the provisions of this *Section 6.3*, and an operations plan is in effect that states how redundant systems will provide service to the affected area in the event of a flood. Evidence of ongoing redundancy shall be provided on an as-needed basis upon request.

2. **Hazardous Materials.** Include facilities that produce or store highly volatile, flammable, explosive, toxic and/or water-reactive materials. These facilities may include (a) chemical and pharmaceutical plants (chemical plant, pharmaceutical manufacturing); (b) laboratories containing highly volatile, flammable, explosive, toxic and/or water-reactive materials; (c) refineries; (d) hazardous waste storage and disposal sites; and (e) above ground gasoline or propane storage or sales centers.

Facilities shall be determined to be Hazardous Materials Critical Facilities if they produce or store materials in excess of threshold limits. If the owner of a facility is required by the Occupational Safety and Health Administration (OSHA) to keep a MSDS on file for any chemicals stored or used in the work place, and the chemical(s) is stored in quantities equal to or greater than the TPQ for that chemical, then that facility shall be considered to be a Hazardous Materials Critical Facility. The TPQ for these chemicals is: either 500 pounds or the TPQ listed (whichever is lower) for the 356 chemicals listed under 40 C.F.R. § 302 (2010), also known as Extremely Hazardous Substances (EHS); or 10,000 pounds for any other chemical. This threshold is consistent with the requirements for reportable chemicals established by the Colorado Department of Health and Environment. OSHA requirements for MSDS can be found in 29 C.F.R. § 1910 (2010). The Environmental Protection Agency (EPA) regulation "Designation, Reportable Quantities, and Notification," 40 C.F.R. § 302 (2010) and OSHA regulation "Occupational Safety and Health Standards," 29 C.F.R. § 1910 (2010) are incorporated herein by reference and include the regulations in existence at the time of the promulgation of these *Section 6.3* regulations, but exclude later amendments to or editions of the regulations.

Specific exemptions to this category include (a) finished consumer products within retail centers and households containing reasonable quantities of hazardous materials intended for household use, and reasonable quantities of agricultural products intended for agricultural use; (b) 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; and (c) pharmaceutical sales, use, storage, and distribution centers that do not manufacture pharmaceutical products.

These exemptions shall not apply to buildings or other structures that also function as Critical Facilities under another classification outlined in this Section.

3. **At-Risk Population Critical Facilities.** Include medical care, congregate care, and schools. These facilities consist of (a) elder care (nursing homes); (b) congregate care serving 12 or more individuals (day care and assisted living); (c) and public and private schools (pre-schools, K-12 schools), before-school and after-school care serving 12 or more children).
4. **Facilities Vital to Restoring Normal Services.** Including government operations. These facilities consist of (a) essential government operations (public records, courts, jails, building permitting and inspection services, community administration and management, maintenance and equipment centers); and (b) essential structures for public colleges and universities (dormitories, offices, and classrooms only).

These facilities may be exempted if it is demonstrated to the Board of County Commissioners that the facility is an element of a redundant system for which service will not be interrupted during a flood. At a minimum, it shall be demonstrated that redundant facilities are available (either owned by the same entity or available through an intergovernmental agreement or other contract), the alternative facilities are either located outside of the 100-year floodplain or are compliant with these *Section 6.3* regulations, and an operations plan is in effect that states how redundant facilities will provide service to the affected area in the event of a flood. Evidence of ongoing redundancy shall be provided upon request.

- I. **Protection for Critical Facilities.** All new and substantially improved Critical Facilities and new additions to Critical Facilities located within the SFHA shall be regulated to a higher standard than structures not determined to be Critical Facilities. For the purposes of these *Section 6.3* regulations, protection shall include either (a) location outside the SFHA; or (b) elevation of the lowest floor or floodproofing of the structure, together with attendant utility and sanitary facilities, to at least two feet above the BFE.

- J. Ingress and Egress for New Critical Facilities.** New Critical Facilities shall, when practicable as determined by the Board of County Commissioners, have continuous non-inundated access (ingress and egress for evacuation and emergency services) during a 100-year flood event.