

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

d/b/a



MILE HIGH FLOOD DISTRICT

FLOODPLAIN REGULATION

Adopted by: Resolution No. 11, Series of 1970

Amended by: Resolution No. 26, Series of 1974

Resolution No. 2, Series of 1979

Resolution No. 2, Series of 1980

Resolution No. 3, Series of 2013

Resolution No. 66, Series of 2019

SECTION 1.0 PURPOSES

To promote the public health, safety, and general welfare, to minimize flood losses in areas subject to flood hazards, and to promote wise use of the floodplain through the development of sound floodplain management practices that assist the Mile High Flood District (MHFD) and the communities it serves with implementation of the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) and the Colorado Water Conservation Board (CWCB) Rules and Regulations for Regulatory Floodplains in Colorado; ~~this floodplain~~ Floodplain Regulation has been established with the following purposes intended:

- 1.1 To reduce the hazards of floods to life and property; by:
 - 1.1.1 Prohibiting certain uses which are dangerous to life or property in times of flooding.
 - 1.1.2 Restricting uses which would be hazardous to the public health in times of flooding.
 - 1.1.3 Restricting uses which are particularly susceptible to flood damage, so as to alleviate hardship and eliminate demands for public expenditures for relief and protection.

- 1.1.4 Requiring permitted floodplain uses, including public facilities which serve such uses, to be protected against floods by providing flood-proofing where applicable, and general flood protection at the time of initial construction.
- 1.2 To alert floodplain occupants or potential occupants ~~to of the potential for~~ flood damages, which may result from their ~~own, or other,~~ land uses; (or that of others) ~~and which is or may be undertaken without full realization of the danger~~ by:
 - 1.2.1 Regulating the manner in which structures designed for human occupancy may be constructed so as to prevent danger to human life within such structures.
 - 1.2.2 Regulating the method of construction of water supply, sanitation systems and other utilities, so as to prevent disease, contamination and unsanitary conditions.
 - 1.2.3 Delineating and describing areas that could be inundated by floods so as to ~~protect~~ individuals from purchasing floodplain lands for purposes which are ~~not in fact unsuitable~~ for those areas.
- 1.3 To protect the public from the burden of avoidable financial expenditures for flood control and relief, by:
 - 1.3.1 Regulating all uses within the floodplain ~~areas~~ so as to produce a method of construction and a pattern of development which will minimize the probability of damage to property and loss of life or injury to the inhabitants of the flood hazard area.
- 1.4 To protect the flood storage capacity of floodplains and to assure retention of sufficient floodway area to convey flood flows which can reasonably be expected to occur, by:
 - 1.4.1 Regulating the filling, ~~dumping~~, dredging, and alteration of channels by deepening, widening, or relocating.
 - 1.4.2 Prohibiting unnecessary and damage-creating encroachments.
 - 1.4.3 Encouraging ~~open space~~ floodplain uses such as open space, natural areas, agriculture and recreation.
- 1.5 To protect the hydraulic characteristics of the small watercourses, including the gulches, sloughs and artificial water channels used for conveying flood waters, which make up a portion of the urban drainage system, by:
 - 1.5.1 Regulating the filling, ~~dumping~~ and channelization of watercourses so as to maintain natural storage capacity and slow flow characteristics.
 - 1.5.2 Prohibiting encroachment into the small watercourses to maintain their water carrying capacity.
 - 1.5.3 Encouraging uses such as ~~greenbelt~~, open space, natural areas, recreation and ~~riding~~ trails.

SECTION 2.0 GENERAL PROVISIONS

2.1 Authority: Per 32-11-18(f)(I) C.R.S., MHFD has the power to adopt, amend, repeal, enforce, and otherwise administer this Floodplain Regulation. In the event of any conflict between this floodplain zoning regulation and any floodplain regulation adopted by any other public body within MHFD, the more restrictive regulation shall control. Most local governments within MHFD also have floodplain regulations and processes in place to administer and enforce those regulations. For this reason, the MHFD Floodplain Administrator will generally defer to the floodplain administrators appointed by those local governments for the administration of routine floodplain management activities such as granting grading and floodplain development permits, etc., and will not be involved in these matters unless directed to do so by the MHFD Board of Directors.

Formatted: Underline

2.2 Jurisdiction: The jurisdiction of this section includes all lands adjacent to any watercourse within the ~~MHFD Urban Drainage and Flood Control District~~ that would be inundated by the one-percent annual chance 100-year flood for that watercourse (as defined in the Definitions section Section 10.0, Definitions) of this Resolution, and areas removed from the ~~flood~~Floodplain by the placement of fill.

Formatted: No underline

2.23 ~~District Types~~Floodplain Components: _The ~~Flood Regulatory District~~Floodplain covers the ~~100-year mapped floodplain~~area corresponding to the one-percent annual chance flood (a.k.a. the 100-year flood). This is the area susceptible to inundation during a flood that has a one percent chance of being equaled or exceeded in any given year. Where deemed to be in the public interest by the ~~Urban Drainage and Flood Control District~~MHFD, and to promote wise use of the ~~flood~~Floodplain, the ~~Flood Regulatory District~~Floodplain may be subdivided into the ~~Floodway~~Floodway District and the ~~Flood Flood Storage District~~Fringe.

Formatted: Font: Italic

Formatted: Font: Italic

Formatted: Font: Not Italic

The ~~Flood Regulatory District~~Floodplain is defined by computing the limits of the one-percent annual chance 100-year flood~~floodplain limits~~ under existing channel and ~~flood~~Floodplain conditions, and typically with consideration of future runoff potential from full development of the watershed.

Subdivision of the ~~Flood Regulatory District~~Floodplain into the Floodway ~~District~~ and the ~~Flood Flood Storage District~~Fringe must not cause a one-percent annual chance 100-year flood water surface profile~~rise~~ of more than one-half foot in either the flood water surface elevation or corresponding energy grade line elevation above that for the ~~Flood Regulatory District~~Floodplain unless requirements of or comparable to those in 44 CFR, § 65.12 of the NFIP regulations have been met. This ensures that alternative options have been considered and documentation of individual legal notice (as defined in Section 10.0, Definitions) to all impacted property owners has been provided. This also requires certification that no structures will be impacted by the rise in water surface elevation profile based on the assumption that there will be an equal degree of encroachment extending for a significant "reach" on both sides of the stream.

The subdivision of the ~~Flood Regulatory District~~Floodplain and accompanying hydraulic studies ~~must~~shall be based upon computational hydraulic analyses which consider all a portion (to be determined by the Floodplain Administrator) of the Flood Flood Storage District~~Fringe~~ reach being filled. Creation-Determination of the

Floodway ~~District~~ and Flood ~~Storage District~~ Fringe must be made only with the full understanding that such subdivision may tend to increase flood peaks downstream.

- 2.34 Boundaries: The boundaries of the ~~Flood Regulatory District~~ Floodplain shall be as they appear on the floodplain maps kept on file with the ~~Executive Director, Urban Drainage and Flood Control District~~ Floodplain Administrator. The boundary lines on the map shall be determined by the use of the scale appearing on the map. Where there is a conflict between the boundary lines illustrated on the map and actual field conditions, the dispute shall be settled according to Section 7.3, "Mapping Disputes" of this Regulation.

Formatted: Font: Italic

- 2.45 Interpretation: In the Floodplain Administrator's interpretation and application, the provisions of this Regulation shall be held to be minimum requirements and shall be liberally construed in favor of the governing body and shall not be deemed a limitation or repeal of any other powers granted by Colorado Statutes.

- 2.56 Warning and Disclaimer of Liability: The degree of flood protection intended to be provided by this section is considered reasonable for the regulatory purposes and is based on engineering and scientific methods of study. Larger floods ~~may can and will~~ occur on occasions, ~~or and~~ the depth of any flood ~~height~~ may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. This Regulation does not imply the areas outside ~~flood~~ Floodplain area boundaries or land uses permitted within such areas will always be ~~very~~ free from flooding or flood damage. Nor shall this section create a liability on the part of or a cause of action against the ~~Urban Drainage and Flood Control District~~ MHFD or any officer or employee thereof for any flood damages that may result ~~from despite~~ reliance on this Regulation.

- 2.67 Adoption of Floodplain Maps: The location and boundaries of the ~~Flood Regulatory District~~ Floodplain established by this regulation shall be as they appear on the maps and profiles contained in engineering reports adopted after a public hearing by the MHFD Board of Directors, and any subsequent revisions to these maps and profiles as approved or designated by FEMA or CWCB. The MHFD Board of Directors may designate ~~Floodway~~ Floodways and Flood ~~Storage Districts~~ Fringes by adopting floodway tables and corresponding delineations contained in the above mentioned engineering reports, or subsequent map revisions after a public hearing. Each change in the official maps shall be subject to the Amendment procedure as required in Section 7.3, Mapping Disputes. ~~For the purpose of final determination of the floodplain limits, the flood profile shall control.~~ The adopted maps and flood profiles shall be on file with the Floodplain Administrator and also with the County Clerk and Recorder of the county in which the ~~flood~~ Floodplain is located.

Formatted: Font: Italic

Formatted: Font: Italic, No underline

Formatted: Subsection 1

SECTION 3.0 NONCONFORMING USES

- 3.1 The existing lawful use of a structure or premises which is not in conformity with the provisions of this Regulation may be continued, subject to the following conditions:

- 3.1.1 No such use shall be expanded or enlarged except in conformity with the provisions of this Regulation.
- 3.1.2 Substantial improvement (~~as herein defined~~ in Section 10.0, Definitions) to any nonconforming structure or use must result in the permanent change of the structure or use to a conforming use.
- 3.1.3 If such use is discontinued for twelve (12) consecutive months, any future use of the building and premises shall conform to this Regulation.
- 3.1.4 Uses or adjuncts thereof which are public nuisances shall not be permitted to continue as nonconforming uses. These shall include, but not be limited to, tents and makeshift structures, enclosures, or other shelters used for human habitation; except in locations expressly permitted by the local government (as defined in Section 10.0, Definitions) and having adequate sanitation facilities and flood evacuation plans (also as defined in Section 10.0, Definitions).
- 3.1.5 Any alteration, addition, or repair to any existing nonconforming structure shall be protected, where applicable, by flood-proofing measures pursuant to Section 7.45-7.44(1), Flood Proofing ~~Floodproofing, of this Regulation.~~

Formatted: Font: Italic

Formatted: Font: Italic

Formatted: Font: Italic

Formatted: Not Highlight

Formatted: Font: Not Italic

Formatted: Font: Not Italic

Formatted: Font: Italic

Formatted: Font: Italic

Formatted: Font: Italic

Formatted: Font: Italic, No underline

Formatted: Subsection 2

SECTION 4.0 FLOOD REGULATORY DISTRICT ~~THE FLOODPLAIN~~

- 4.1 Application: These provisions ~~for this district~~ shall apply to all ~~flood~~ Flood plains of watercourses in the ~~Urban Drainage and Flood Control District of Colorado~~ MHFD, for which ~~one-percent annual chance 100-year flood data and corresponding elevations or profiles are available~~ limits have been determined.
- 4.2 Description of District: The ~~Flood Regulatory District~~ Floodplain shall include the areas ~~so~~ delineated on the maps and profiles for the ~~one-percent annual chance 100-year~~ floodplain limits ~~for along~~ the watercourses adopted by the MHFD Board of Directors in accordance with ~~Section 2.67, Adoption of Floodplain Maps, of this Regulation, and subsequent map revisions approved and/or designated by FEMA or CWCB.~~
- 4.3 Special Provisions: The following regulations shall apply to all uses within the ~~Flood Regulatory District~~ Floodplain, notwithstanding that such uses may be permitted under the terms of this Regulation.
- 4.3.1 No new construction; substantial improvement; fill, including fill for roads and levees; deposit; obstruction; ~~(as herein defined);~~ storage of materials, or other ~~flood~~ Flood plain uses shall be permitted that decreases the efficiency or the capacity of the ~~flood~~ Flood way, unless requirements of or comparable to those in 44 CFR, § 65.12 of the NFIP regulations have been met. This ensures that alternative options have been considered, documentation of individual legal notice to all impacted property owners is provided, and requires certification that no structures will be impacted by the rise in the one-percent annual chance water surface elevation profile.
- 4.3.2 No ~~flood~~ Flood plain use shall adversely affect the efficiency of or unduly restrict the capacity of the channels or ~~flood~~ Flood ways of any tributaries to the main

Formatted: Font: Italic

Formatted: Font: Italic

Formatted: Font: Italic, No underline

stream, drainage ditches, or any other drainage facilities or systems, unless requirements of or comparable to those in 44 CFR. § 65.12 of the NFIP regulations have been met. This ensures that alternative options have been considered, documentation of individual legal notice to all impacted property owners is provided, and requires certification that no structures will be impacted by the rise in water surface elevation profile.

4.3.3 All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.

4.3.4 All new construction, ~~and~~ substantial improvements, and utility equipment shall be constructed with materials ~~and utility equipment~~ resistant to flood damage. Flood-resistant material is defined in Section 10.0, Definitions.

4.3.5 All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.

4.3.6 All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system; and all new and replacement sanitary sewage systems shall be designed to minimize or eliminate both infiltration of flood waters into the system and discharges from the system into flood waters.

4.3.7 Onsite waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

4.3.8 Except as allowed under Section 4.5.3, mobile homes and recreational vehicles should not be placed in the Floodplain. All mobile homes and recreational vehicles to be already placed within the Flood Regulatory District Floodplain shall be anchored to resist flotation, collapse, or lateral movement by providing over the top and frame ties to ground anchors. Specific requirements shall be that:

- (1) Over-the-top ties be provided at each of the four corners of the mobile home, with two additional ties per side at intermediate locations and mobile homes less than fifty feet long requiring one additional tie per ~~side~~ end.
- (2) Frame ties be provided at each corner of the home with five additional ties per side at intermediate points and mobile homes less than fifty feet long requiring four additional ties per side;
- (3) All components of the anchoring system be capable of carrying a force of 4,800 pounds; and
- (4) Any additions to the mobile home be similarly anchored.

4.3.9 Tents and makeshift structures, enclosures, or other shelters used for human habitation, shall not be permitted in the Floodplain, except in locations expressly permitted by the local government (as defined in Section 10.0, Definitions) and having adequate sanitation facilities and flood evacuation plans (also as defined

Formatted: Font: Italic

Formatted: Not Highlight

Formatted: Indent: Left: 0.9"

Formatted: Not Highlight

Formatted: Not Highlight

Formatted: Font: Italic

~~in Section 10.0, Definitions), and having adequate sanitation facilities and flood evacuation plans.~~

Formatted: Font: Italic

4.4 Description of Uses

Permitted Uses: The following ~~open~~-uses shall be permitted within the ~~Flood Regulatory District~~Floodplain to the extent that they are not prohibited in a particular area by any underlying county or city zoning ordinance or regulation.

- 4.4.1 Agricultural uses such as: general farming, ~~pasture~~livestock grazing, ~~truck farming~~, forestry, sod farming, and wild crop harvesting;
- 4.4.2 Industrial-commercial uses such as: loading areas, parking areas, airport landing strips, and temporary storage ~~yards for~~of equipment or machinery easily moved or not subject to flood damage;
- 4.4.3 Public and private recreational uses not requiring "permanent or temporary structures" designed for human habitation such as: parks, swimming areas, golf courses, ~~driving ranges~~, picnic grounds, wildlife and nature preserves, ~~game farms~~, fish hatcheries, ~~shooting preserves~~, ~~target ranges~~, ~~trap and skeet ranges~~, and hunting, fishing and hiking areas;
- 4.4.4 Utility facilities such as: flowage areas, transmission lines, pipelines, water monitoring devices, roadways, and bridges.

4.5 Special Exceptions: Any use enumerated in ~~subsections~~Subsections 4.51 through 4.55 may be permitted only upon the issuance of a special exception ~~permit letter~~ by the Floodplain Administrator as provided in Section 7.4, Special Exception~~Permits of this Regulation.~~

Formatted: Font: Italic

Formatted: Font: Italic

Formatted: Font: Italic, No underline

4.5.1 Residential Construction. New construction or substantial improvement of any residential structure may be permitted only upon a finding by the Floodplain Administrator that the lowest floor, including basement, is to be elevated to or above the flood protection elevation ~~-(as defined in Section 10.0, Definitions).~~ As a condition of such finding, such condition shall be certified by a ~~registered Colorado-registered~~Colorado-licensed professional engineer, architect, or land surveyor to the Floodplain Administrator. This includes structures placed on areas removed from the ~~flood~~Floodplain by fill.

Formatted: Font: Italic

Formatted: Font: Italic

4.5.2 Non-residential Construction. Critical facilities shall be regulated in accordance with Section 6.3, Special Provisions. New construction or substantial improvement of any ~~other~~ commercial, industrial or other non-residential structure may be permitted only upon a finding by the Floodplain Administrator that the lowest floor, including basement, is to be elevated to or above the flood protection elevation or, together with attendant utility and sanitary facilities, is to be flood-proofed so that below the flood protection elevation the structure is water tight and ~~contains adequate~~with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. This includes structures placed on areas removed from the ~~flood~~Floodplain by fill. A ~~Colorado-licensed~~Colorado-registered professional

Formatted: Font: Italic

engineer or architect shall certify to the Floodplain Administrator that the standards of this subsection are satisfied.

4.5.3 Mobile Homes. New mobile home parks and mobile home subdivisions, expansions of existing mobile home parks and mobile home subdivisions, and existing mobile home parks and mobile home subdivisions where the repair, reconstruction, or improvement of the street utilities and pads equals or exceeds 50 percent of the value of the streets, utilities and pads before the repair, reconstruction or improvement has commenced and for mobile home subdivision, may be permitted only upon a finding by the Floodplain Administrator that:

- a) Stands or lots will be elevated on compacted fill or on pilings so that the lowest floor of the mobile home will be elevated to or above the flood protection elevations; and
- b) Adequate surface drainage and access for a hauler will be provided.

This includes mobile home parks placed on areas removed from the ~~flood~~Floodplain by fill.

4.5.4 Fills or Deposits of Materials. This may be permitted only upon a finding by the Floodplain Administrator that:

- (1) Any fill or deposit of materials will comply with the Section 4.3, *Special Provisions*, of this Regulation; and
- (2) The fill or deposit of materials will have some beneficial purpose and the amount thereof will not be greater than is necessary to achieve that purpose, as demonstrated by a plan submitted by the owner showing the final dimensions of the proposed fill or other material and the use to which the filled land will be put;
- (3) The fill or deposit of materials does not imprudently reduce the flood storage capacity of the waterway and the other requirements of this section are met; and the fill or deposit of materials does not encroach on that portion of the ~~flood~~Floodplain which would have significant flow during the flood, and which for that reason would help convey the flood waters. Any filling that reduces the hydraulic capacity requires appropriate hydraulic studies and a review of the ~~urban~~ impact of such reduction.
- (4) The fill or other materials will be protected against erosion ~~by rip rap, strong vegetative cover or bulk heading~~ in conformance with stabilization best management practices as described in the Urban Storm Drainage Criteria Manual.
- (5) The fill or deposit of materials does not otherwise adversely impact upstream, downstream, and/or adjacent property owners.

4.5.5 The sStorage or processing Processing of materials. Hazardous Materials, Materials that are buoyant, flammable, toxic, explosive, or in times of flooding,

Formatted: No underline

Formatted: Font: Italic

Formatted: Font: Italic

Formatted: Font: Italic, No underline

Formatted: Underline

Formatted: No underline

could be injurious to human, animal, or plant life, shall be at or above the flood protection elevation for the particular area. Solid waste disposal facilities, such as junkyards or areas for the dumping of refuse shall also require a permit from the Floodplain Administrator~~Board of Directors~~.

- 4.5.6 Uses ~~very similar in nature~~ Nature to ~~permitted~~ Permitted uses. These may also be allowed provided that they are consistent with the provisions of this Regulation.

Formatted: No underline

Formatted: Subsection 2

SECTION 5.0 THE FLOODWAY~~DISTRICT~~

Formatted: Underline

- 5.1 Application: *Section 4.1, Application, Flood Regulatory District*~~Floodplain, of this Regulation~~ shall also apply thereto.

Formatted: Font: Italic

Formatted: Font: Italic

- 5.2 Description: The Floodway shall include the areas so delineated on the maps and profiles for the one-percent annual chance flood limits along the watercourses adopted by the MHFD Board of Directors in accordance with Section 2.7, Adoption of Floodplain Maps, and subsequent map revisions approved and/or designated by FEMA or CWC.B. The Floodway District shall include the areas designated by the Board of Directors in accordance with Section 2.6, Adoption of Floodplain Maps.

Formatted: Font: Italic

Formatted: Font: Italic, No underline

- 5.3 Special Provisions~~—~~: The following additional provisions shall apply to all uses within the Floodway~~District~~.

- 5.3.1 No encroachments, including fill, new construction, substantial improvements, or other development shall be permitted within the ~~Floodway~~Floodway District that would result in any increase in flood levels during the occurrence of the one-percent annual chance 100-year flood unless requirements of or comparable to those in 44 CFR, § 65.12 of the NFIP regulations have been met. This ensures that alternative options have been considered, documentation of individual legal notice to all impacted property owners is provided, and requires certification that no structures will be impacted by the rise in water surface elevation profile.

- 5.3.2 No mobile homes or recreational vehicles shall be placed in the Floodway ~~District~~.

- 5.3.3 No buildings or structures designed or intended for human occupancy shall be placed in the Floodway~~District~~.

- 5.3.4 No floatable or buoyant material, nor any material that could easily become dislodged and move downstream during a flood, shall be stored or placed in the Floodway.

- 5.3.5 No storage or processing of materials that are flammable, toxic, explosive, or in times of flooding, could be injurious to human, animal, or plant life, shall be stored or placed in the Floodway.

Formatted: No underline

5.3.6 No solid waste disposal facilities, such as junkyards or areas for the dumping of refuse shall be placed in the Floodway.

- 5.4 Description of Uses: The ~~open~~ uses that are permitted in Section 4.4, Description of Uses, Flood Regulatory District Floodplain, of this Regulation are permitted, provided that such use does not include any filling or deposit of materials, and the capacity of the ~~flood~~ Floodway is left ~~completely~~ unimpaired.

Formatted: Font: Italic

Formatted: Font: Italic, No underline

Formatted: Font: Italic

Formatted: Subsection 1

SECTION 6.0 THE FLOOD STORAGE DISTRICT FRINGE

Formatted: Underline

- 6.1 Application: ~~All provisions of Section 4.1, Application, Floodplain Regulatory District, of this Regulation shall also apply thereto.~~

Formatted: Font: Italic

Formatted: Font: Italic, No underline

Formatted: Font: Italic

- 6.2 ~~Description of District:~~ The Flood Fringe shall include the areas so delineated on the maps and profiles for the one-percent annual chance flood limits along the watercourses adopted by the MHFD Board of Directors in accordance with Section 2.7, Adoption of Floodplain Maps, and subsequent map revisions approved and/or designated by FEMA or CWC. ~~The Flood Storage District shall include the area designated by the Board of Directors in accordance with Section 2.6, Adoption of Floodplain Maps of this Regulation.~~

Formatted: Font: Italic

Formatted: Font: Italic, No underline

6.3 Special Provisions:

- 6.3.1 The provisions of Sections 4.3 and 4.5 shall apply to all uses in the Flood Fringe ~~Flood Storage District~~.

Formatted: Font: Italic

- 6.3.2 Within ~~areas of~~ shallow flooding areas, all new construction and substantial improvement of residential structures may be permitted only upon a finding of the Floodplain Administrator that the lowest floor, including basement, will be elevated one foot above the crown of the nearest street or one foot above the flood depth specified on the map, whichever is higher.

Formatted: Underline

- 6.3.3 Within ~~areas of~~ shallow flooding areas, all new construction and substantial improvement of non-residential structures may be permitted only upon a finding of the Floodplain Administrator that the lowest floor, including basement, will be elevated one foot above the crown of the nearest street; or the highest adjacent grade of the structure will be one foot above the flood depth specified on the map, whichever is higher; or together with attendant utility and sanitary facilities, will be completely floodproofed to or above that level so that any space below that level is watertight ~~with walls substantially impermeable to the passage of water and~~ with ~~contains adequate~~ structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

Formatted: Underline

- 6.3.4 All new critical facilities shall be located outside the Floodplain whenever possible.

- 6.3.5 All new critical facilities which are unable to be located outside the Floodplain, and substantially improved critical facilities, and new additions to existing critical facilities in the Flood Flood Storage District Fringe shall be

elevated or floodproofed to at least one foot above the flood protection elevation.

6.353.6 New critical facilities shall, when practicable, have continuous non-inundated access (ingress and egress for evacuation and emergency services) during a one-percent annual chance ~~100-year~~ flood event.

Formatted: Subsection 2, Space After: 0 pt, Line spacing: single

SECTION 7.0 ADMINISTRATION

- 7.1 Floodplain Administrator: The MHFD Executive Director is the Floodplain Administrator who shall administer the provisions of this Regulation.
- 7.2 Special Exception Permit Letter: A special exception permit letter must be obtained from the Floodplain Administrator before any new land use not expressly allowed by this Regulation may be initiated.
- 7.3 Mapping Disputes: —The following procedure shall be used by the Floodplain Administrator in deciding contested cases in which the location of a district boundary Floodplain boundary is disputed:
- 7.3.1 In all cases the person contesting the location of the district Floodplain boundary shall be given the opportunity to submit his own technical evidence certified by a Colorado-licensed professional engineer that demonstrates the Floodplain is scientifically or technically incorrect, or that an indisputable error has occurred if he so desires. The Floodplain Administrator shall not allow deviations from the boundary line as mapped unless the evidence clearly and conclusively establishes that the mapped location of the line is incorrect.
- 7.3.2 The Floodplain Administrator shall render a written opinion within 30 days following receipt of the applicant's technical evidence setting forth the findings of fact and the reasons for the decision.
- 7.3.3 Contestants shall have the right to appeal such decisions to the Floodplain MHFD Board of Adjustment Directors. Such appeal must be made within 30 days.
- 7.4 Special Exceptions Permits:
- 7.4.1 Application for: Any use listed in this Regulation as requiring a special exception permit may be allowed only upon the issuance of a special exception permit letter by the Floodplain Administrator.
- 7.4.2 Procedure to be followed in Passing on Special Exception Permits Letters: Pursuant to a Special Exception Permit Letter Application the Floodplain Administrator may:
- (1) Require the applicant to submit, at the time of application, two copies of an aerial photograph, or a geo-referenced topographic work map, certified by a Colorado-licensed engineer competent in open channel hydraulics. This work map shall show vertical datum, horizontal datum, and mapping projection used plan certified by a registered engineer, competent in open channel hydraulics, which This map shall be required to accurately locate the proposed flood Floodplain proposal and/or Floodway boundaries with respect to the district-effective Floodplain and/or Floodway limits; (as defined in Section 2.7, Adoption of Floodplain Maps), the pre-project or existing Floodplain and/or

Formatted: Normal, Space After: 10 pt, Line spacing: Multiple 1.15 li

Formatted: Subsection 2

Formatted: No underline

Formatted: Font: Italic

Formatted: Font: Italic

~~Floodway limits~~, channel of stream, ~~and existing flood~~Floodplain development, ~~together with~~. This map shall further be required to include, as attachments, all ~~other~~ pertinent information such as the nature of the proposal; legal description of the property; fill limits and elevations; building floor elevations; and flood-proofing measures, as applicable.

- (2) Require the applicant to furnish ~~such of~~ the following additional information, as ~~is~~ deemed necessary by the Floodplain Administrator for the evaluation of the effects of the proposal under flood flows and ~~flood~~Floodplain storage and to render a decision of the proposed ~~flood~~Floodplain use:-
- (a) ~~A typical valley~~ Cross-sections (as appropriate), showing the channel of the stream, the ~~flood~~Floodplain and/or Floodway adjoining each side of channel, cross-sectional area to be occupied by the proposed development, and high water information.
 - (b) Plan (surface view), a geo-referenced map showing vertical datum, horizontal datum and mapping projection, elevations or contours of the existing and proposed ground; pertinent structure, fill or storage elevations; size, location and spatial arrangement of all proposed and existing structures on the site; location and elevations of streets, water supply, sanitary facilities, and soil types, water surface elevations, and other pertinent information.
 - (c) Profile (as appropriate), showing the slope of the bottom of the existing and proposed channel or thalweg of the stream and existing and proposed one-percent annual chance~~100-year~~ water surface profiles.
 - (d) Specifications for building construction and materials, ~~"floodproofing-proofing"~~, filling, dredging, grading, channel improvement, storage of materials, water supply, and sanitary facilities.
 - (e) Hydrologic and Hydraulic Analyses and/or supplemental calculations for all proposed development within the Floodplain~~channelization~~.

Formatted: No underline

Formatted: No underline

Formatted: No underline

Formatted: No underline

The Floodplain Administrator shall render, within 30 days of receipt of all necessary application documents, and materials, a written decision granting or denying a permit application. If a denial is made, the decision shall set forth the Floodplain Administrator's findings of fact and reasons for the denial. Applicants shall have the right to appeal any adverse findings or decision to the Floodplain-MHFD Board of Adjustments~~Directors~~. Such appeal must be made within 30 days.

7.4.3 ~~Factors upon which the decision of~~Bases for the Floodplain Administrator's
Determination shall be based: The determination of the Floodplain
Administrator on each special exception ~~permit-letter~~ application shall be based
on the effects of the proposed land use with respect to the objectives and
purposes of this Regulation.

Formatted: Underline

7.4.4 Conditions Attached to Special Exception ~~Permits~~Letters: Upon consideration
of the factors listed above and the purposes of this Regulation, the Floodplain
Administrator may attach such conditions as he deems necessary in furthering
the purposes of this Regulation. Such conditions may include specifications for,
without limitation because of specific enumeration, modification of other waste
disposal methods and facilities, landscaping, periods of operation, operational
controls, sureties, deed restriction and adequate flood-proofing, where
applicable.

- (1) Floodproofing. Special exceptions requiring flood-proofing measures
such as the following shall be designed consistent with the food
protection elevation for the particular areas and flood velocities, forces
and other factors associated with the flood protection elevation.
Methods shall be in conformance with the latest FEMA guidance relative
to floodproofing practices.

The Floodplain Administrator shall require that the applicant submit a
plan or document certified by a Colorado-licensed~~registered~~ professional
engineer that the flood-proofing measures are consistent with the flood
protection elevation for the particular area.

- (a) Anchorage to resist flotation and lateral movement.
- (b) Installation of watertight doors, bulkheads and shutters.
- (c) Reinforcement of walls to resist water pressures.
- (d) Use of paints, membranes or mortars to reduce seepage of water
through walls.
- (e) Addition of mass or weight to structures to resist flotation.
- (f) Installation of pumps to lower water levels in structures.
- (g) Construction of water supply and waste treatment systems to
prevent the entrance of flood waters.
- (h) Pumping facilities for subsurface drainage systems for buildings
to relieve external foundation wall and basement floor pressure.
- (i) Construction to resist rupture or collapse, caused by water
pressure or floating debris.
- (j) Cutoff valves on sewer lines or the elimination of gravity flow
basement drains.

SECTION 8.0 — CERTIFICATE OF COMPLIANCE

- ~~8.1~~ No vacant land shall be occupied or used and no buildings shall hereafter be erected, altered, or moved on any floodplain of any water course nor shall such buildings be occupied until a certificate of compliance shall have been issued by the Floodplain Administrator, indicating that the use or proposed use complies with the provisions herein. A certificate shall be applied for upon completion of any project, construction, or use for which a special exception permit was granted and the excepted land use shall not commence until a certificate is issued.
- ~~8.2~~ The Floodplain Administrator shall request the applicant, when applicable, to submit a certification by a registered professional engineer that the finished fill and building floor elevations, food proofing measures, or other flood protection factors were accomplished in compliance with the provisions of this Regulation. The Floodplain Administrator shall within ten days after receipt of such certification from the applicant issue a certificate of compliance only if the building or premise and the proposed use thereof conform with all the requirements of this Regulation.
- ~~8.3~~ The Administrator shall issue a certificate upon receipt of proof that a use or structure is expressly permitted by this Regulation, such as those uses listed in *Section 4.4*.

Formatted: Font: Italic

Formatted: Subsection 1

SECTION ~~98.0~~ ENFORCEMENT AND PENALTIES

- ~~98.1~~ Every Any structure, building, fill or development placed or maintained within any ~~flood~~Floodplain in violation of this Regulation is a public nuisance and the creation thereof may be enjoined and maintenance thereof may be abated by action at suit of the City, Town, or County in which it is located or by the ~~Urban Drainage and Flood Control~~MHFD, District or any citizen thereof. Any person who places or maintains any structure, building, fill or development within any ~~flood~~Floodplain in violation of this Regulation may be fined not more than \$500 for each offense. Each day during which such violation exists is a separate offense.

Formatted: Subsection 1

SECTION ~~409.0~~ AMENDMENTS

~~409.1~~ The MHFD Board of Directors ~~of the Urban Drainage and Flood Control District of Colorado~~ may from time to time alter, supplement or change the ~~District Floodplain, Floodway, and Flood Fringe~~ boundaries and the provisions contained in this Regulation in the manner provided by law.

~~409.1.1~~ Amendments to this Regulation may be made on petition of any interested party in accordance with the provisions of the Colorado Revised Statutes.

~~409.1.2~~ The subdivisions of the ~~Flood Regulatory District~~ Floodplain into the Floodway ~~District~~ and Flood ~~Storage District~~ Fringe will be made only by action of the MHFD Board of Directors ~~of the Urban Drainage and Flood Control District~~.

Formatted: Subsection 2

SECTION ~~44~~ 10.0 DEFINITIONS

Unless specifically defined below, words or phrases used in this Regulation shall be interpreted so as to give them the same meaning as they have at common law and to give this Regulation its most reasonable application.

~~44.10.1~~ Channel ~~—: —~~ ~~That area of a watercourse where water normally flows and not that area beyond where vegetation exists.~~

~~44.10.X2~~ Critical Facility ~~—: A structure or related infrastructure, but not the land on which it is situated, 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 or after a flood. Typical critical facilities include hospitals, fire stations, police stations, storage of critical records, similar facilities, and all other facilities and uses identified in Rule 6 of the Colorado Water Conservation Board's Rules and Regulations for Regulatory Floodplains in Colorado. These facilities should be given special consideration when formulating regulatory alternatives and floodplain management plans. A critical facility should not be located in a Floodplain if at all possible.~~

Formatted: Underline

Formatted: Font: Italic

Formatted: Font: Italic

~~44.10.23~~ Energy Grade Line ~~: The line representing the elevation of the potential energy for water flowing in a conduit or channel that is indicative of a change in how fast water is moving under given conditions.~~ Encroachment Lines ~~— are limits of obstruction to flood flows. These lines are generally parallel to the stream. The lines are established by assuming that the area landward (outside) of the encroachment lines may be ultimately developed in such a way that it will not be available to convey flood flows. The stream channel and adjoining floodplains between these lines will be maintained as open space and will be adequate to convey the 100-year flood without adversely increasing flood heights, such increase under any condition not exceeding one-half foot.~~

Formatted: No underline

~~44.3~~ Equal Degree of Encroachment ~~— is established by considering the effect of encroachments on the hydraulic efficiency of the floodplain along a significant reach of the stream, on both sides.~~

~~10.4~~ ~~Flood~~—: ~~a~~ ~~A~~ general and temporary condition of partial or complete inundation of normally dry land areas from (a) the overflow of streams, rivers, or other inland water, or (b) the unusual and rapid accumulation or runoff of surface waters from any source.

~~10.5~~ ~~Flood Fringe~~: ~~The Fringe portion of the Floodplain in which flows are characteristically of shallow depths and low velocities.~~

Formatted: Underline

~~10.6~~ ~~Flood Profile~~: ~~A graph or a longitudinal profile showing the relationship of the water surface elevation of a flood event to location along a stream or river.~~

~~10.7~~ ~~Flood Protection Elevation~~: ~~An elevation one foot above the elevation or "flood profile" of the one percent annual chance flood under existing channel and Floodplain conditions. It is one foot above the elevation of the Floodplain, as shown on the floodplain maps in the office of the Floodplain Administrator, and at www.mhfd.org.~~

Formatted: Underline

~~10.8~~ ~~Flood-Resistant Material~~: ~~Flood-resistant material includes any building product capable of withstanding direct and prolonged contact with floodwaters without sustaining significant damage. Prolonged contact means at least 72 hours. Significant damage is any damage requiring more than low-cost cosmetic repair (such as painting). All structural and non-structural building materials at or below the Base Flood Elevation (BFE) must be flood resistant.~~

Formatted: Underline

~~10.59~~ ~~Floodplain~~—: ~~an~~ ~~An~~ area ~~both including and~~ adjacent to a watercourse, which area is subject to flooding as the result of the occurrence of the ~~one-percent annual chance~~ ~~100-year~~ flood and which area ~~this~~ is so adverse to past, current, or foreseeable construction or land use as to constitute a significant hazard to public health and safety or to property. ~~The Floodplain may be further subdivided into the Floodway and the Flood Fringe.~~

The term includes, but is not limited to:

- (a) Mainstream ~~flood~~ ~~Flood~~plains;
- (b) Debris-fan ~~flood~~ ~~Flood~~plains; and
- (c) Dry wash channels and dry wash ~~flood~~ ~~Flood~~plains.

~~10.910~~ ~~Floodplain Administrator~~: ~~That individual appointed by the MHFD Board of Directors to administer the provisions of these Regulations. MHFD Resolution No. 5, series of 1979, designates the MHFD Executive Director as the Floodplain Administrator.~~

~~10.101~~ ~~Floodplain Maps~~: ~~Those maps that accurately indicate the boundaries of the Floodplain.~~

~~11.6~~ ~~Flood Regulatory District~~—that portion of the floodplain subject to inundation by the 100-year flood. The Regulatory District may be subdivided into the Floodway District and the Flood Storage District.

~~110.76~~ ~~Flood Storage District~~ ~~Flood Fringe~~—: ~~the~~ ~~The fringe~~ ~~Flood~~ ~~Regulatory District~~ ~~Floodplain~~ in which flows are characteristically of shallow depths and low velocities.

10.142 Floodproofing: A combination of structural provisions, changes, or adjustments to properties and structures subject to flooding primarily for the reduction or elimination of flood damages to properties, water and sanitary facilities, structures, and contents of buildings in a flood hazard area.

~~11.10.87~~123 Floodway District ~~;~~ ~~that~~ That portion of the ~~Flood Regulatory District~~ Floodplain required for the reasonable passage or conveyance of the one-percent annual chance 100-year flood which is characterized by hazardous and significant depths and velocities. The Floodway limits are based on the cumulative encroachment into the Floodplain resulting in a maximum water surface increase of one-half foot (unless the requirements of Section 2.3, Floodplain Components are met).

~~11.10.98~~ Flood Profile ~~;~~ ~~a~~ A graph or a longitudinal profile showing the relationship of the water surface elevation of a flood event to location along a stream or river.

~~11.10.109~~ Flood Proofing ~~Floodproofing~~ ~~;~~ ~~a~~ A combination of structural provisions, changes, or adjustments to properties and structures subject to flooding primarily for the reduction or elimination of flood damages to properties, water and sanitary facilities, structures, and contents of buildings in a flood hazard area.

~~11.10.110~~ Flood Protection Elevation ~~;~~ ~~an~~ An elevation one foot above the elevation or "flood profile" of the one-percent annual chance 100-year flood under existing channel and floodplain conditions. ~~It is one foot above the elevation of the flood for the Flood Regulatory District Floodplain, as shown on the Floodplain floodplain maps in the office of the Urban Drainage and Flood Control District Floodplain Administrator, and at www.mhfd.org.~~

~~11.11~~ Flood Resistant Material: Flood resistant material includes any building product capable of withstanding direct and prolonged contact with floodwaters without sustaining significant damage. Prolonged contact means at least 72 hours. Significant damage is any damage requiring more than low cost cosmetic repair (such as painting). All structural and non-structural building materials at or below the Base Flood Elevation (BFE) must be flood resistant.

Formatted: Underline

~~10.1234~~ Individual Legal Notice: Public notice distributed by MHFD to all affected property owners by publication in a newspaper of general circulation within the boundaries of MHFD and by mailing an individual notice to each affected property owner.

Formatted: Underline

10.145 Local Government: The town, city, county or city and county having regulatory police power over the use of property covered by this Regulation.

Formatted: Underline

10.156 Obstruction: Sandbars formed by the natural flow of a watercourse, temporary structures, planks, snags and debris in and along an existing channel which cause a flood hazard.

10.167 Occupancy: The use or possession of a building by humans for purposes including, but not limited to, residential, office, hospital or commercial.

~~11.10.121~~378 One Percent Annual Chance Flood~~Hundred-year Flood~~ ~~;~~ Also known as the one percent annual exceedance probability flood and more colloquially as the 100-year

Formatted: Underline

~~flood, a flooding event of this magnitude has a one percent chance of occurring in any given year, giving it an average return period (recurrence interval) frequency of occurrence of one hundred (100) years, as determined from an analysis of floods on a particular watercourse and other watercourses in the same general region. It has about an one percent chance of occurring in any given year.~~

~~1110.1314 Obstruction~~ Obstruction ~~— sandbars Sandbars formed by the natural flow of a watercourse, temporary structures, planks, snags and debris in and along an existing channel which cause a flood hazard.~~

~~1110.1415 Reach~~ Reach ~~— a A hydraulic engineering term to describe longitudinal segments of a stream or river. A reach will generally include the segment of the floodplain where flood heights are primarily controlled by manmade or natural floodplain obstructions or restrictions. In an urban area, the segment of a stream or river between two consecutive bridge crossings would most likely be a reach.~~

~~1110.1456 Occupancy~~ Occupancy ~~— the The use or possession of a building by humans for purposes including, but not limited to, residential, office, hospital or commercial.~~

~~10.1789 Public Nuisance: A public nuisance is defined as an act or omission that has the potential to affect the health, safety, welfare, and/or comfort of the general public.~~

Formatted: Underline

~~10.4920 Reach: A hydraulic engineering term to describe longitudinal segments of a stream or river.~~

~~1110.4518291 Shallow Flooding Area~~ Shallow Flooding Area ~~— an An area subject to inundation by the one percent annual chance flood with average depths of less than three feet, and not typically related to the flood profile. These are areas where no clearly defined channel exists, where the path of flooding is of shallow-indeterminate, but where conveyance may be evident flooding not related to the flood profile.~~

~~1110.46192+2 Storage Capacity of a Floodplain~~ Storage Capacity of a Floodplain ~~— the The volume of space above an area of floodplain land that can be occupied by flood water of a given stage at a given time, regardless of whether the water is moving. Storage capacity tends to reduce downstream flood peaks.~~

~~1110.472023 Structure~~ Structure ~~— anything Anything constructed or erected, the use of which required a more or less permanent location on or in the ground. Includes, but is not limited to, walled and roofed buildings (including gas or liquid storage tanks), that are principally above ground, as well as a manufactured homes. The terms "structure" and "building" are interchangeable for the purposes of this Floodplain Regulation objects such as buildings, factories, sheds, and cabins.~~

~~1110.482434 Structure, Permanent~~ Structure, Permanent ~~— a A structure which is built of such materials and in such a way that it would commonly be expected to last and remain useful for a substantial period of time.~~

~~1110.492245 Structure, Temporary~~ Structure, Temporary ~~— a A structure which is built of such materials and in such a way that it would commonly be expected to have a relatively short useful life, or is built for a purpose that would commonly be expected to be relatively short-term.~~

~~11.10.2023~~ **Substantial Improvement**—: ~~any~~ Any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the actual cash value of the structure either (a) before the improvement has started, or (b) if the structure has been damaged and is being restored, before the damage occurred. Substantial improvement is started when the first alteration of any structural part of the building commences and is cumulative over a ten (10) year period.

~~11.10.21~~ **Watercourse**—: ~~a~~ A channel, natural depression, slough, artificial channel, gulch, arroyo, stream, creek, pond, reservoir, or lake in which storm runoff and flood water flows either regularly or infrequently. This includes major drainageways for carrying urban storm runoff.

~~11.10.22~~ **Floodplain Administrator** —: ~~that That individual appointed by the MHFD Board of Directors to administer the provisions of these Regulations. MHFD Resolution No. 5, series of 1979, designates the MHFD Executive Director as the Floodplain Administrator.~~

~~11.23~~ **Floodplain Board of Adjustment** —the seven (7) member board appointed by the Board of Directors who determine the granting of variances and review decisions of the Floodplain Administrator.

~~11.10.24~~ **Floodplain Maps**: ~~those Those maps that accurately indicate the boundaries of the Flood Regulatory DistrictFloodplain.~~

~~11.25~~ **Critical Facility** —a structure or related infrastructure, but not the land on which it is situated, 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, or after a flood.

Formatted: No underline