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### **Flathead County Floodplain Regulations Revision**

The Flathead County Floodplain Regulations are largely comprised of provisions adopted in 1984. Since that time Montana State Floodplain Statutes (76-5-101, M.C.A.) have been amended and Federal floodplain management program direction revised. Unfortunately, the county floodplain regulations have not kept pace with these changes prompting the Planning and Zoning office (PZO) to prepare revised floodplain regulations. The proposed revised floodplain regulations attempt to resolve cumbersome and ambiguous provisions in the regulations as well as reflect changes to State Statute.

The floodplain regulations are required if communities (county) desire to participate in the National Flood Insurance Program (NFIP). The primary benefit of NFIP is nationally subsidized flood insurance to area residents living within the floodplain. Floodplain regulations apply only to regulated areas of the 100-Year Floodplain, which includes the Floodway. Areas outside of the 100-Year Floodplain are not regulated by these provisions.

The Flathead County Planning Office is proposing a revised Flathead County Floodplain and Floodway Management Regulations. The objectives of this revision are to:

- Bring the regulations into compliance with Montana State Statutes;
- Create much more user-friendly regulations for property owners to understand and the county to administer;
- Reformat the regulations to align with the Flathead County Development Code.

The process being used to provide the public ample opportunity to review and comment includes a Planning Board Public Workshop, one public hearing conducted by the Planning Board followed by a second public hearing before the County Commission. Any final action regarding the revised floodplain regulations will be taken by the County Commission.

On February 12, 2010 PZO placed this revised set of regulations on their public website for public viewing. The Planning Board public workshop is scheduled for March, 17 2010 at the City/County Health District Conference Room, beginning at 6:00 P.M. The public hearing dates will be scheduled following the Planning Board public workshop.

**To assist the public in reviewing the proposed floodplain regulations the revisions are color-coded or shaded identifying suggested changes and sources:**

- State Statutes
- DNRC Model Floodplain Regulations
- PZO

Language not color-coded or shaded are the original regulations. The public is encouraged to attend and participate in the workshop on March 17, 2010. Please don't hesitate to contact the PZO if you have any questions.

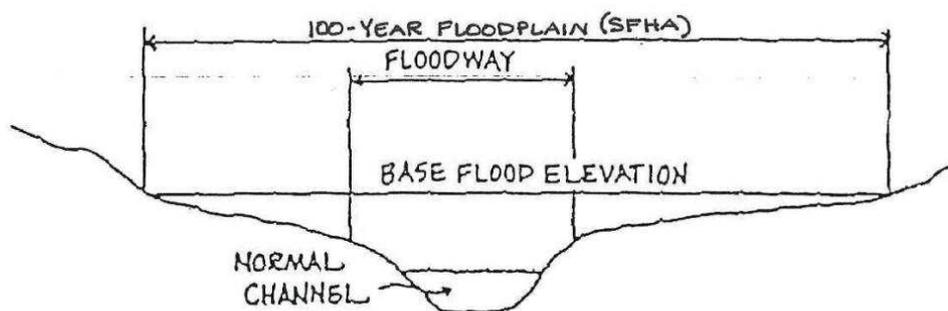
**Chapter 7**  
**Flathead County Development Code**  
**Floodplain and Floodway Management Regulations**

**7.0 General Provisions**

**7.0.1 Introduction<sup>1</sup>**

These Regulations shall be known and cited as the Flathead County Floodplain and Floodway Management Regulations (Regulations) and are made in accordance with exercising the authority of the laws of the State of Montana.

- a. The 100-Year Floodplain is an area subject to a temporary condition of partial or complete inundation of normally dry lands from the overflow of a stream or other water body, or the unusual and rapid accumulation or runoff of surface waters from any source that has a one percent chance of occurring in any given year. The term is synonymous with “Special Flood Hazard Area” (SFHA);
- b. The Floodway is the channel of a stream and the adjacent overbank areas that shall be reserved in order to discharge a base flood without cumulatively increasing the water surface elevation more than one-half (1/2) foot;
- c. The Base Flood Elevation (BFE) is the elevation above sea level of the base flood in relation to the North American Vertical Datum of 1988 (NAVD 88) unless otherwise specified in the flood hazard study. Previous Flood Insurance Rate Maps (FIRMs) may have been published in the National Geodetic Vertical Datum of 1929 (NGVD 29);
- d. Other definitions relating to these Regulations are found in Chapter 2, Definitions, of the development code.



**7.0.2 Intent**

These Regulations comply with the Montana Floodplain and Floodway Management Act (Title 76, Chapter 5, MCA) and meet minimum floodplain development requirements for continued community participation in the National Flood Insurance Program. It is public

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policy of Flathead County to efficiently manage development in the 100-Year Floodplain in order to protect long term public health, safety and general welfare. These Regulations have been established with the following purposes intended to: (Moved from Section 1.02 in Current Regulations)

- a. Guide development of the 100-Year Floodplain by:
  - i. Recognizing the right and need of watercourses to periodically carry more than the normal flow of water;
  - ii. Participating in coordinated efforts of federal, state and local management activities for 100-Year Floodplain;
  - iii. Ensuring the regulations and minimum standards adopted, insofar as possible, balance the greatest public good with the least private injury.
- b. Regulate or prohibit uses that are dangerous to health, safety, and property in times of flood, or cause increased flood heights and velocities;
- c. Require that uses vulnerable to floods, including public facilities, be provided with flood protection at the time of initial construction;
- d. Identify lands unsuitable for certain development purposes because of flood hazards;
- e. Minimize the need for rescue and relief efforts associated with flooding undertaken at the expense of the general public;
- f. Ensure that potential buyers are notified that property is within a 100-Year Floodplain and subject to the provisions of these Regulations;
- g. Ensure that those who occupy 100-Year Floodplain assume responsibility for their action(s).

### **7.0.3 Statutory Authority**

Authority to adopt floodplain management regulations appears in Title 76, Chapter 5, Part 1, MCA. Identification of the 100-Year Floodplain and Floodway is based on the most recently adopted Flathead County, Montana Flood Insurance Study, recorded with the Flathead County Clerk and Recorder. The study includes both the Flood Insurance Study report (FIS) and official Flood Insurance Rate Maps (FIRMs) which are on file in the office of the floodplain administrator. (Moved from Section 3.02 in Current Regulations)

### **7.0.4 Jurisdictional Area**

These Regulations apply to the 100-Year Floodplain within the jurisdiction of Flathead County, State of Montana, which are shown on the most recent Flathead County Flood

Insurance Study or flood studies adopted by the Flathead County Board of Commissioners.

#### **7.0.5 Rules for Interpretation of Floodplain District Boundaries**

Boundaries of the 100-Year Floodplain shall be determined by scaling distances on the FIRM and using the 100-Year Floodplain data table contained in the flood insurance study. The maps may be used as a guide for determining the 100-Year Floodplain boundary, but the exact location of the floodplain boundary shall be determined where the BFE intersects the natural ground.

- a. For the A Zone and AO Zone as depicted on a FIRM, where conflict exists<sup>3</sup> between a mapped floodplain boundary and actual field conditions, the floodplain administrator may interpret the location of the 100-Year Floodplain boundary based on field conditions or available historical flood information:
  - i. The floodplain administrator may use historical flood elevations to determine suitable fill or flood-proofing elevations;
  - ii. If historical flood evidence is not available, the floodplain administrator may determine, from a field review at the proposed development site, an appropriate fill or flood-proofing elevation to use in applying these Regulations;
  - iii. In the absence of depth or elevation information, a minimum two-foot depth shall be used.
- b. Where a land elevation survey provides more detailed elevation information than the floodplain map and indicates that the land/structure may be out of the floodplain, the homeowner/landowner shall advise the floodplain administrator and may submit a Letter of Map Change to the Federal Emergency Management Agency (FEMA);
- c. Where interpretation is needed as to the exact location of the boundaries of the 100-Year Floodplain (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the floodplain administrator shall make the interpretation.

#### **7.0.6 Abrogation and Greater Responsibility**

It is not intended by these Regulations to repeal, abrogate or impair any existing easements, covenants, deed restrictions or underlying zoning. Where these Regulations impose greater restrictions, the provisions of these Regulations shall prevail.

#### **7.0.7 Regulation Interpretation**

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<sup>3</sup> DNRC Model Regulations

The interpretation and application of the provisions of these Regulations shall be considered minimum requirements and liberally construed in favor of the governing body and not deemed a limitation or repeal of any other powers granted by State statute.

#### **7.0.8 Warning and Disclaimer of Liability**

The degree of flood protection required by these Regulations is considered reasonable for regulatory purposes and 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.<sup>3</sup>

- a. These Regulations do not imply that areas outside the delineated 100-Year Floodplain boundaries or permitted land uses will always be totally free from flooding or flood damages;
- b. These Regulations shall not create a liability on the part of, or a cause of action against Flathead County, Montana or any officer or employee thereof for flood damages that may result from reliance upon these Regulations.

#### **7.0.9 Disclosure Provision**

All owners of property in an identified 100-Year Floodplain as indicated on the FIRM shall notify potential buyers or their agents that such property is subject to the provisions of these Regulations.

#### **7.0.10 Floodplain Variances** (Moved from Section 4.04 in Current Regulations)

The Board of Adjustment may, by variance, grant a permit that is not in compliance with the minimum standards contained in these Regulations according to the following:

- a. Variances shall not be issued for areas within a Floodway;
- b. Variances in the 100-Year Floodplain shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief;
- c. Variances shall only be issued upon a Finding of Facts by the Board of Adjustment that all of the following have been met:
  - i. A determination that refusal of a permit due to exceptional circumstances would cause a unique or undue hardship on the applicant or community involved;
  - ii. A determination that the granting of a variance will not result in increased flood hazards, present additional threats to public safety, be an extraordinary public expense, create nuisances, cause fraud, victimize the public, or conflict with existing state and local laws;

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<sup>3</sup> DNRC Model Regulations

- iii. A determination that the proposed use would be adequately flood proofed;
  - iv. A determination that a reasonable alternate location outside the 100-Year Floodplain is not available;
  - v. A determination that the variance requested is the minimum necessary to afford relief, considering the flood hazard;
  - vi. Recommendation for approval from the Montana Department of Natural Resources and Conservation (DNRC), based on technical review.
- d. Variances shall be issued in writing by the Board of Adjustment and notify the applicant that:
- i. The specific variance is granted, conditionally granted or denied;
  - ii. The issuance of a variance to construct a building below the 100-Year Floodplain elevation may result in increased premium rates;
  - iii. Such construction below the 100-Year flood elevation increases risks to life and property.
- e. 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;
- f. The floodplain administrator shall maintain records of the variance notification and actions, including justification for their issuance, and forward copies of all variance actions to the DNRC and FEMA.

**7.0.11 Floodplain Development Permit Fees** (Moved from Section 4.05 in Current Regulations)

A non-refundable processing fee as adopted by the Board of Commissioners shall be submitted with each floodplain development permit application.

**7.0.12 Compliance**

No structure or land use shall be located, developed, extended, converted or structurally altered without full compliance with the provisions of these Regulations and other applicable regulations.

- a. Any use, arrangement or construction not in compliance as authorized by permit, shall be deemed a violation of these Regulations;
- b. An applicant is required to submit certification by a registered professional engineer, architect, land surveyor, or other qualified person designated by the

floodplain administrator that finished fill and lowest building floor elevations, flood-proofing, hydraulic design, or other flood protection measures were accomplished in compliance with the provisions of the Regulations. (Moved from Section 4.07 in Current Regulations)

#### **7.0.13 After-the-Fact Floodplain Development Permit<sup>1</sup>**

Any structure or use built within the 100-Year Floodplain after the initial adoption of the 1984 FIS that is without a floodplain development permit shall be required to apply for an After-the-Fact permit.

- a. All information required for submittal of a floodplain development permit is required for submittal of an After-the-Fact permit.
- b. The After-the-Fact permit will be subject to the same development standards as any other proposed project, and may be issued accordingly.
- c. Any After-the-Fact permit is subject to a fee of four (4) times the normal floodplain development permit fee.
- d. An After-the-Fact permit application does not guarantee that a floodplain development permit will be issued. The structure or use may be required to be removed.

#### **7.0.14 Burden of Proof<sup>1</sup>**

The burden of proof for satisfying the requirements of these regulations shall rest with the applicant and not Flathead County.

#### **7.0.15 Permission to Enter<sup>2</sup>**

Flathead County may make reasonable entry upon any lands and waters in the state for the purpose of making an investigation, survey, removal, or repair. Unless written consent is obtained, however, Flathead County shall provide written notice of its entry to the owner, owner's agent, lessee, or lessee's agent whose lands will be entered at least 3 days in advance. If none of these persons can be found, Flathead County shall affix a copy of the notice to one or more conspicuous places on the property. An investigation of a natural or artificial obstruction or nonconforming use shall be made by Flathead County either on its own initiative, on the written request of adjacent owners, or on the written request of the Board of Commissioners (76-5-105, MCA).

#### **7.0.16 Violations and Penalties**

Any person who violates these regulations shall be guilty of a misdemeanor and shall be upon conviction thereof be fined not more than \$100 or be imprisoned in the county jail for not more than 10 days or be both so fined and imprisoned. Each day's continuance of a violation shall be deemed a separate and distinct offense (76-5-110, MCA).

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<sup>1</sup> Planning Office

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<sup>2</sup> MCA 76-5-105

### **7.0.17 Emergency Preparedness Planning**

In formulating community development goals, the community shall consider the development of a plan for evacuating residents of all manufactured home parks or subdivisions located within flood prone areas.

- a. This plan should be developed, filed with, and approved by appropriate community emergency management authorities;
- b. The floodplain administrator will work with Emergency Service Agencies and follow the Flathead County Disaster Mitigation Manual.

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## **7.1 Floodplain Administrator**

### **7.1.1 Flathead County Floodplain Administrator**

The Flathead County Floodplain Administrator shall be the planning director.

### **7.1.2 Duties and Responsibilities of the Floodplain Administrator**

Duties and responsibilities of the floodplain administrator shall include, but not be limited to, the following:

- a. Assure the flood carrying capacity within the altered or relocated portion of a watercourse is maintained;
- b. Assure all necessary permits have been received from governmental agencies from which approval is required by federal, state law and local codes, including 310 permits from the Flathead County Conservation District, 404 permits from the U.S. Army Corps of Engineers, and provisions of the Montana Natural Streambed and Land Preservation Act, Title 75, Chapter 7, Part 1, MCA prior to issuing a floodplain development permit;
- c. Review floodplain permit applications to ensure the proposed building site project, including the placement of manufactured homes, will be reasonably safe from flooding;
- d. Grant, deny, or revoke floodplain permits based on whether the proposed establishment, alteration, or substantial improvement of an artificial obstruction meets the requirements of these Regulations;
- e. Adopt administrative procedures to efficiently administer the provision of these Regulations;
- f. Ensure the proposed use complies with existing zoning designations;
- g. Maintain files and records necessary to document nonconforming uses, BFE, flood-proofing and lowest floor elevation certifications, fee receipts, the issuance of permits and variances, agenda, minutes, records of public meetings, and any other matters related to floodplain management in Flathead County.

## **7.2 Floodplain Development Permits**

### **7.2.1 General Provisions**

Activities or uses that require the issuance of a permit, including the expansion or alteration of such uses, shall not be initiated, established or undertaken until a permit has been issued by the floodplain administrator.

- a. A floodplain development permit application is considered to have been approved **120 working days<sup>2</sup>** after the date of receipt of a complete application by the floodplain administrator;
- b. A floodplain development permit will not be considered complete until all information required by the floodplain administrator has been submitted and deemed satisfactory and all local, State and Federal permits are included with the floodplain development permit application. It is the responsibility of the applicant to determine that all other necessary permits have been obtained;
- c. The floodplain administrator may revoke an approved floodplain development permit if any of the following apply:
  - i. The applicant has provided inaccurate information as part of the floodplain development permit application;
  - ii. New information becomes available that demonstrates the permitted development or artificial obstruction would cause an additional flood hazard to adjacent property or significantly increase flood heights. A significant increase in flood heights is one-half foot unless existing or anticipated development in the area dictates a lesser value of allowable increase;
  - iii. Physical development of the site is not consistent with the terms of the floodplain development permit.
- d. A floodplain development permit may be amended by the floodplain administrator upon request if any of the following are determined:
  - i. The development actions identified in the floodplain development permit fail or do not adequately provide flood protection;
  - ii. Physical floodplain conditions change and the floodplain development permit measures no longer provide adequate flood protection;
  - iii. New technologies become available that would provide a greater degree of flood protection and reduce the impact to the floodplain;

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<sup>2</sup> MCA 76-5-405(2)

- iv. Additional information shows that the proposed artificial obstruction will not create additional flood hazards to adjacent property or will not significantly increase flood heights by more than one-half foot.
- e. The floodplain administrator may approve artificial obstructions in the 100-Year Floodplain which increases the water surface elevation of the base flood by more than one half (1/2) foot provided that FEMA has approved or conditionally approved a revision to the FIRM which reflects the modified base flood elevations caused by the proposed encroachment;
- f. A permit issued under the authority of these regulations is valid for a period of twenty-four (24) months from the date of issuance:<sup>1</sup>
  - i. All construction shall be completed within the twenty-four (24) month period;
  - ii. The Commission, at its discretion, may grant one twelve (12) month extension.

#### **7.2.2 Floodplain Permit Considerations<sup>2</sup>**

The floodplain administrator shall consider all of the following factors for every floodplain development permit application:

- a. The danger to life and property by water that may be backed up or diverted by the obstruction or use;
- b. The danger that the obstruction or use will be swept downstream to the injury of others;
- c. The availability of alternate locations;
- d. The construction or alteration of the obstruction or use in such a manner as to lessen the danger;
- e. The permanence of the obstruction or use;
- f. The anticipated development in the foreseeable future of the area that may be affected by the obstruction or use;
- g. Proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination and unsanitary conditions;
- h. Susceptibility of the proposed facility and its contents to flood damage and the effects of such damage on the individual owner;

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<sup>2</sup> MCA 76-5-406

- i. Flood-carrying capacity within the altered or relocated portion of any stream;
- j. Importance of the services provided by the facility to the community;
- k. Consistency of the proposed use to the growth policy and zoning regulations for the area;
- l. Safety of access to property in times of flooding for ordinary and emergency services;
- m. Other factors in harmony with the purposes of these Regulations, the Montana Floodplain and Floodway Management Act and the National Flood Insurance Program.

### **7.2.3 Pre-existing Structures and Uses in the 100-Year Floodplain<sup>1</sup>**

A structure or use that existed in the 100-Year Floodplain prior to the initial August 5, 1984 adoption of Flathead County Floodway and Floodplain Regulations is considered pre-existing and may continue in the manner and to the extent that it existed prior to the adoption of the floodplain regulations. Any change in structure or use shall require a floodplain development permit in accordance with these Regulations.

### **7.2.4 Floodplain Development Permit Application Requirements**

Floodplain development permit applicants shall be required to furnish the information below for determining the suitability of the particular site for the proposed use:

- a. Location map using the reference FIRM showing the proposed activity in relation to the 100-Year Floodplain or Floodway;<sup>1</sup>
- b. A drawing to scale (including dimensions) showing the:
  - i. Nature, location, and elevation of the lot;
  - ii. Existing structure locations;
  - iii. Fill, storage, or materials site;
  - iv. Flood-proofing measures;
  - v. Adjusted mean sea level elevations as determined by NAVD 88 of the lowest living area floor of any proposed structures;
  - vi. Location of the channel;

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- vii. Plan view of the proposed development including external dimensions of structures, street or road finished grade elevations, well locations, individual sewage treatment and disposal sites, and site plan and/or construction plans.
- c. Specifications for flood-proofing, filling, excavating, grading, rip rapping, storage of materials, and location of utilities, including excavation and fill quantity estimates;
- d. Professional engineer's or registered architect's design calculations and certification that the proposed activity has been designed to be in compliance with these Regulations;
- e. Certification of flood-proofing or elevation on a standard form available from the floodplain administrator;
- f. Copies of all applicable and necessary permits.<sup>1</sup>

#### **7.2.5 Additional Information**

Prior to issuing a floodplain permit the floodplain administrator may require additional information necessary to determine whether the proposed activity meets the requirements of these Regulations. Additional information may include, but not limited to, hydraulic calculations assessing the impact on the BFE or velocities.

#### **7.2.6 100-Year Floodplain Areas with No Delineated Floodway**

A development or artificial obstruction proposed in a 100-Year Floodplain, where water surface elevations are available but no Floodway is delineated, may not significantly increase flood velocities or depths or generally alter patterns of flood flow.

- a. Where the proposed development would be located near the bank of a stream in an area which would likely be included in the Floodway, the floodplain administrator may require a permit applicant to furnish additional hydraulic data before acting on a permit application. The data may include, but are not limited to, any of the following:
  - i. A hydraulic study documenting probable effect on upstream or downstream, and adjacent property owners caused by the proposed development;
  - ii. The calculated increase in the 100-year flood water surface profile caused by the proposed development.
- b. The floodplain administrator may approve a floodplain development permit for new construction, substantial improvements, or other artificial obstructions (including fill) within the 100-Year Floodplain, if it is demonstrated that the

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cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the BFE more than one-half (0.5) foot at any point, or significantly increase the base flood velocity.

#### **7.2.7 Public Notice**

Upon receipt of a complete application for a permit or a variance request, the floodplain administrator shall prepare a notice containing the facts pertinent to the application and have the notice published at least once in a newspaper of general circulation in the area. Notice shall also be served by first-class mail upon adjacent property owners and DNRC. The notice shall provide a reasonable period of time, not less than 15 days, for interested parties to submit comments on the proposed activity.

- a. The floodplain administrator shall send copies of all associated permits to DNRC;
- b. In riverine situations, notification by the floodplain administrator shall be made to adjacent cities, DNRC, and FEMA prior to any alteration or relocation of a stream. The flood-carrying capacity within the altered or relocated portion of any stream shall be maintained. Erosion control measures shall be incorporated to ensure stability of altered channels and stream banks.

#### **7.2.8 Post Floodplain Permit Inspection**

Upon completion of a project approved under a floodplain development permit, the applicant is required to contact the floodplain administrator to set up an on-site conformance inspection.<sup>1</sup> To determine that the permit specifications and conditions have been completed, applicants are required to furnish all of the following prior to the time of the on-site conformance inspection:

- a. Certification by a registered professional engineer or licensed land surveyor of the adjusted mean sea level elevations as determined by NAVD 88 of the lowest living area floor (including basement) of all new, altered, or substantially improved buildings;
- b. Certification by a structural engineer or licensed architect shall be required, if flood-proofing techniques were used for buildings, stating the adjusted mean sea level elevations as determined by NAVD 88 to which the flood proofing was accomplished;
- c. Certification by a structural engineer or licensed architect shall also be required for artificial obstructions other than buildings, the activity was accomplished in accordance with these Regulations and the design plans submitted with the application for the permit activity. This certification may be waived by the floodplain administrator if it can be clearly ascertained by a site inspection that the activity was accomplished in accordance with these Regulations;

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- d. Certification of flood-proofing or elevation shall be provided on a standard form available from the floodplain administrator.

### 7.2.9 Emergency Approval

Emergency approval must be authorized by the floodplain administrator prior to any work, repair or replacement of structures in the 100-Year Floodplain.

- a. The floodplain administrator may authorize emergency work in the 100-Year Floodplain if all of the following are met:
  - i. The applicant has submitted a floodplain development permit application and paid fees;
  - ii. All other emergency approvals have been obtained, including emergency 310 and 404 permit approvals.<sup>1</sup>
- b. Authorization to undertake emergency work, repair and replacement work may be given verbally if the floodplain administrator feels that such a written authorization would unduly delay the emergency work. Such verbal authorization shall be followed by a written authorization stating the emergency condition, the type of emergency work agreed upon, and stating that a verbal authorization had been previously given;
- c. If emergency work has been completed under the emergency approval and exceeds the scope of proposed work, was constructed as a temporary flood control structure, or is found to be out of compliance with these regulations, then the structure or development may be required to be modified or removed;<sup>1</sup>
- d. The requirements of these Regulations may be waived for emergency repair and replacement of severely damaged public transportation, water and sewer facilities, and public flood control works if all of the following are met:
  - i. The floodplain administrator determines that an emergency condition exists and warrants immediate action;
  - ii. The floodplain administrator agrees upon the nature and type of proposed emergency repair and/or replacement.
- e. Authorization to undertake emergency work, repair and replacement work on public transportation, water and sewer facilities, and public flood control works may be given verbally if the floodplain administrator feels that such a written authorization would unduly delay the emergency work. Such verbal authorization shall be followed by a written authorization stating the emergency condition, the

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type of emergency work agreed upon, and stating that a verbal authorization had been previously given.

#### **7.2.10 Appeals<sup>1</sup>**

The Board of Adjustment shall hear and render judgment on an appeal when it is alleged there is an error in any requirement, decision, or determination made by the floodplain administrator in the enforcement or administration of this ordinance.

- a. Any person whose floodplain development permit has been revoked may appeal the floodplain administrator's decision to the Board of Adjustment;
- b. The floodplain administrator shall maintain a record of all actions involving an appeal and shall report variances to FEMA upon request;
- c. Any person or persons aggrieved by the decision of the Board of Adjustment may appeal such decision in the courts of competent jurisdiction.

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## **7.3 Development Standards**

### **7.3.1 Minimum Standards<sup>3</sup>**

The following minimum development standards apply to areas within the Floodway and 100-Year Floodplain as delineated in the FIS with the accompanying FIRM:

- a. Floodplain structures or fill shall not be prohibited by any other statute, regulation, ordinance, or resolution;
- b. Floodplain structures, artificial obstructions or fill shall be consistent with the Growth Policy and Zoning Regulations;
- c. 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 effect of buoyancy;
- d. New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;
- e. New construction or substantial improvements shall be constructed with materials resistant to flood damage;
- f. 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;
- g. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- h. 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 comply with environmental health local and state regulations;
- i. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding;
- j. Any excess fill is removed and deposited outside of the 100-Year Floodplain;
- k. State and Federal permits shall be included with the floodplain development permit application.

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<sup>3</sup> DNRC Model Regulations

## **7.4 Floodway Development Uses and Standards**

### **7.4.1 Floodway Uses Prohibited**

The following artificial obstructions and uses are prohibited within the Floodway:

- a. New construction of any residential, commercial or industrial structure or an expansion of a pre-existing structure;
- b. Encroachments, including fill, new construction, alterations, substantial improvements, and other development that would result in erosion of the embankment, obstruction of the natural flow of waters, or increase in flood levels;
- c. The construction or permanent storage of an object subject to flotation or movement during flooding;
- d. Solid and hazardous waste disposal, sewage treatment, and sewage disposal systems;
- e. Storage of toxic, flammable, hazardous, or explosive materials;
- f. Manufactured homes;
- g. Cemeteries, mausoleums, or any other places of burial of human remains;<sup>3</sup>
- h. Large scale clearing of the riparian vegetation which will cause flood losses on other lands;<sup>1</sup>
- i. Any other use not authorized by these Regulations.<sup>1</sup>

### **7.4.2 Floodway Uses Not Requiring Floodplain Development Permit**

The following uses shall be allowed without a floodplain development permit anywhere within the Floodway, provided that such uses conform to the provisions of these Regulations, are not prohibited by any other ordinance, resolution or statute, and do not require fill, excavation, permanent storage of materials, or equipment or structures other than portable structures.

- a. Agricultural uses, such as tilling, farming, irrigation, harvesting, grazing, that do not require fill or excavation;<sup>3</sup>
- b. Agricultural irrigation, livestock supply wells, and water conveyance systems, provided they are located at least 500 feet from domestic water supply wells that do not require fill or excavation;
- c. Parking areas, or emergency landing strips that do not require fill or excavation;

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<sup>3</sup> DNRC Model Regulations

<sup>1</sup> Planning Office

- d. Private and public recreational uses that do not have permanent structures (e.g. floating docks)<sup>1</sup> that do not require fill or excavation;
- e. Forestry, including processing of forest products with portable equipment;
- f. Lawns, gardens, and play areas that do not require fill or excavation;
- g. Fences, except permanent fences crossing channels;
- h. Recreational vehicles provided they meet all of the following requirements:
  - i. On the site for fewer than 180 consecutive days;
  - ii. Fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheel or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions;

#### **7.4.3 Floodway Uses Requiring a Floodplain Development Permit**

The following artificial obstructions and uses may be permitted in the Floodway subject to the issuance of a floodplain development permit by the floodplain administrator:

- a. Excavation of material from pits, pools, or ponds provided that all of the following are met:
  - i. A buffer strip of undisturbed land is left between the edge of the channel and the edge of the excavation. This buffer strip shall be at least a sufficient width to prevent flood flows from channeling into the excavation or accelerate channel bank erosion;
  - ii. The excavation meets all applicable laws and regulations of other local and state agencies;
  - iii. Excavated material is disposed of or stockpiled outside the 100-Year Floodplain.
- b. Railroad, highway, road, and driveway stream crossings provided that all of the following are met:
  - i. The crossings are designed to offer minimal obstruction to flood flow;<sup>3</sup>
  - ii. The bottom of bridge spans has a freeboard of at least two (2) feet above the BFE;<sup>3</sup>

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<sup>1</sup> Planning Office

<sup>3</sup> DNRC Model Regulations

- iii. Normal overflow channels are preserved to allow passage of sediments to prevent aggradations;<sup>3</sup>
  - iv. Mid stream supports for bridges have footings buried below the maximum scour depth;<sup>3</sup>
  - v. Stream crossings do not increase the BFE more than one-half foot nor cause a significant increase in flood velocities;<sup>3</sup>
  - vi. Certification signed by a registered professional engineer demonstrating the above provisions have been met.<sup>3</sup>
- c. Fill for highway, road, driveway, and railroad embankments not associated with stream crossings, provided that all of the following are met:
- i. Reasonable alternative transportation routes outside the designated Floodway are not available;
  - ii. Such Floodway encroachment is located as far from the stream channel as possible;
  - iii. Impacts to property owners or the natural stream function have been mitigated;<sup>3</sup>
  - iv. The encroachment does not result in a cumulative increase exceeding one-half foot in the BFE, after allowable encroachments into the Floodway;
  - v. Certification signed by a registered professional engineer demonstrating the above provisions have been met.<sup>3</sup>
- d. Buried or suspended utility transmission lines, provided that:
- i. Suspended utility transmission lines are designed so the lowest point of the suspended line is at least six (6) feet higher than the BFE;
  - ii. Towers and other appurtenant structures are designed and placed to withstand and minimally obstruct flood flows;
  - iii. When technically feasible, the crossing does not disturb the bed and banks of the stream and alternatives such as alternative routes, directional drilling, and aerial crossing are considered;<sup>3</sup>
  - iv. Utility transmission lines carrying toxic or flammable materials are buried to a depth at least twice the calculated maximum depth of scour for a 100-

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<sup>3</sup> DNRC Model Regulations

Year flood. The maximum depth of scour shall be determined by hydraulic engineering methods acceptable to the floodplain administrator;

- v. Buried utility transmission lines, including electric and telephone, are backfilled to natural grade, compacted, and revegetated.<sup>1</sup>
- e. Storage of materials and equipment provided that all of the following are met:
  - i. No storage of flammable, toxic, hazardous, or explosive materials shall be permitted;
  - ii. The material or equipment is not subject to major damage by flooding and is properly anchored to prevent flotation or downstream movement;
  - iii. The material or equipment is readily movable within the limited time available after flood warning.
- f. Domestic water supply wells provided that all of the following are met:
  - i. Assure drainage away from the wellhead;
  - ii. No other structures are required (e.g. a well house);<sup>3</sup>
  - iii. Well casings are water tight to a distance of at least 25 feet below the ground surface;
  - iv. Water supply and electrical lines have a watertight seal where the lines enter the casing;
  - v. All pumps, electrical lines and equipment are either submersible or adequately flood-proofed;
  - vi. Check valves are installed on main water lines at wells and all building entry location;
  - vii. Domestic water supply wells are located at least 500 feet from irrigation and livestock supply wells.<sup>3</sup>
- g. Buried and sealed vaults for sewage disposal in recreational areas provided they meet applicable laws and standards administered by the Montana Department of Environmental Quality.
- h. Public or private campgrounds provided:

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- i. There are no dwellings or permanent mobile homes;
  - ii. Access roads require only limited fill and do not obstruct or divert flood waters.
- i. Structures accessory to the uses permitted in this section such as permanent<sup>1</sup> boat docks, marinas, sheds, picnic shelters, tables and toilets provided that all of the following are met:
- i. Structures are not intended for human habitation;
  - ii. Structures will have a low flood damage potential;
  - iii. Structures are located on ground higher than the surrounding ground and as far from the channel as possible;
  - iv. Flood-proofing standards of these Regulations are met;
  - v. Structures are constructed and placed to offer a minimal obstruction to flood flows;
  - vi. Structures are anchored to prevent flotation.
- j. Agricultural structures without walls that will have low flood damage potential, and are located on higher ground as far from the channel as possible.<sup>3</sup>
- k. Recreational vehicles meeting the following requirements:<sup>1</sup>
- i. On the site for more than 180 consecutive days;
  - ii. Are not licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheel or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.
- l. Private and public recreational uses that have permanent structures and require excavation or fill. Examples include golf courses, driving ranges, archery ranges, picnic grounds, parks, wildlife management and natural areas, game farms, shooting preserves, hunting and fishing areas, and bike and pedestrian trails;<sup>1</sup>
- m. Private and public boat-launching ramps, fish hatcheries, target ranges, and trap and skeet ranges;<sup>1</sup>

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<sup>1</sup> Planning Office

<sup>3</sup> DNRC Model Regulations

<sup>1</sup> Planning Office

<sup>1</sup> Planning Office

- n. Levees and floodwalls, provided that the following are met:
- i. The structures shall be designed and constructed to safely convey a 100-year flood;
  - ii. The cumulative effect of the levee or floodwall combined with floodplain encroachments will not increase the unobstructed BFE more than 0.5 feet;
  - iii. The floodplain administrator may establish either a lower or higher permissible increase in the BFE for individual levee projects only with concurrence from the DNRC and the FEMA based upon all of the following information and criteria:
    1. The estimated cumulative effect of anticipated future permissible uses;
    2. The type and amount of existing flood-prone development in the affected area;
    3. The proposed levee or floodwall, except those to protect agricultural land, is constructed at least three (3) feet higher than the BFE.
- o. Bank stabilization projects, such as riprap, native revetments, weirs, if all of the following are met:
- i. The riprap is designed to withstand a 100-year flood;
  - ii. The riprap does not increase the BFE;
  - iii. The riprap will not increase erosion upstream, downstream, or adjacent to the riprap site;
  - iv. Consideration will be given to accommodate the safe passage of water craft in low flows;<sup>3</sup>
  - iv. It is preventive maintenance for bridge abutments, roads, industrial uses and public infrastructure.<sup>3</sup>
- p. Channelization projects if they do not significantly increase the magnitude or velocity of the BFE in the proximity of the project;
- q. Dams if all of the following criteria are met:

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<sup>3</sup> DNRC Model Regulations

- i. They are designed and constructed in accordance with The Montana Dam Safety Act and applicable safety standards;
  - ii. They will not increase flood hazards downstream, either through operational procedures or improper hydrologic/hydraulic design.
- r. Structures for the establishment of a water diversion or change in place of diversion if all of the following criteria are met:
- i. The proper permits or documentation have been obtained from DNRC for new surface water diversions and changes in place of diversion;<sup>3</sup>
  - ii. The proposed diversion will not significantly increase the upstream BFE one-half (1/2 foot) or more or to the detriment of neighboring property;<sup>3</sup>
  - iii. The proposed diversion is designed and constructed to minimize potential erosion from a 100-Year flood;
  - iv. Any permanent diversion structure crossing the full width of the stream channel is designed and constructed to safely withstand a 100-Year flood, and is not an obstruction to the passage of water craft or fish.<sup>3</sup>
- s. All other artificial obstructions, substantial improvements or use not specifically listed or prohibited by these Regulations.

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<sup>3</sup> DNRC Model Regulations

## **7.5 100-Year Floodplain Development Uses and Standards**

### **7.5.1 100-Year Floodplain Uses Prohibited**

The following artificial obstructions and uses are prohibited within the 100-Year Floodplain:

- a. Solid and hazardous waste disposal;
- b. Storage of highly toxic, flammable, hazardous or explosive materials. However, storage of petroleum products may be allowed by permit under Section 7.5.3(f);
- c. Any wastewater treatment, conveyance, or disposal system not permitted by the Flathead County Department of Environmental Health Service;<sup>3</sup>
- d. Any other use not authorized by these Regulations.<sup>1</sup>

### **7.5.2 100-Year Floodplain Uses Not Requiring a Floodplain Development Permit**

(This Section is in Current Regulations, but repeated from Floodway for Clarification)

The following uses shall be allowed without a permit anywhere within the 100-Year Floodplain, provided that such uses conform to the provisions of these Regulations, are not prohibited by any other ordinance, resolution or statute, and do not require fill, excavation, permanent storage of materials, or equipment or structures other than portable structures:

- a. Agricultural uses such as tilling, farming, irrigation, harvesting, grazing, etc that do not require fill or excavation;
- b. Accessory uses such as loading or parking areas, or emergency landing strips associated with industrial and commercial facilities that do not require fill or excavation;
- c. Private and public recreational uses that do not have permanent structures (e.g. floating docks)<sup>1</sup> and do not require excavation or fill;
- d. Forestry, including processing of forest products with portable equipment;
- e. Residential uses such as lawns, gardens, parking areas and play areas, that do not require fill or excavation;
- f. Agricultural irrigation, livestock supply wells, and water conveyance systems, provided that they are located at least 500 feet from domestic water supply wells;
- g. Fences, except permanent fences crossing channels;

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<sup>3</sup> DNRC Model Regulations

<sup>1</sup> Planning Office

<sup>1</sup> Planning Office

- h. Recreational vehicles provided they meet all of the following requirements:
  - i. Be on the site for fewer than 180 consecutive days;
  - ii. Be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheel or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions;

### **7.5.3 100-Year Floodplain Uses Requiring a Floodplain Development Permit**

The following artificial obstructions and uses may be permitted in the 100-Year Floodplain subject to the issuance of a floodplain development permit by the floodplain administrator:

- a. Fill material placed in the 100-Year Floodplain provided that all of the following are met:
  - i. Fill shall be stable, compacted, well graded, pervious, generally unaffected by water and frost;
  - ii. Fill shall be devoid of trash or similar foreign matter, devoid of tree stumps or other organic material, and appropriate for the purpose of supporting the intended use and/or permanent structure;
  - iii. Any excess fill is removed and deposited outside of the 100-Year Floodplain.<sup>1</sup>
- b. Excavation of material from pits, pools, or ponds provided that all of the following are met:
  - i. A buffer strip of undisturbed land is left between the edge of the channel and the edge of the excavation. This buffer strip shall be at least a sufficient width to prevent flood flows from channeling into the excavation or accelerate channel bank erosion;
  - ii. The excavation meets all applicable laws and regulations of other local and state agencies;
  - iii. Excavated material is disposed of or stockpiled outside the 100-Year Floodplain.
- c. Railroad, highway, road and driveway stream crossings provided that all of the following are met:

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<sup>1</sup> Planning Office

- i. The crossings are designed to offer minimal obstruction to flood flow;<sup>3</sup>
  - ii. The bottom of bridge spans has a freeboard of at least two (2) feet above the BFE;<sup>3</sup>
  - iii. Normal overflow channels are preserved to allow passage of sediments to prevent aggradations;<sup>3</sup>
  - iv. Mid stream supports for bridges have footings buried below the maximum scour depth;<sup>3</sup>
  - v. Stream crossings do not increase the BFE more than one-half foot nor cause a significant increase in flood velocities;<sup>3</sup>
  - vi. The applicant has submitted certification signed by a registered professional engineer demonstrating the above provisions have been met.<sup>3</sup>
- d. Fill for highway, road, driveway, and railroad embankments not associated with stream crossings, provided that all of the following are met:
- i. Reasonable alternative transportation routes are not available;
  - ii. Such encroachment is located as far from the stream channel as possible;
  - iii. Impacts to property owners or the natural stream function have been mitigated;<sup>3</sup>
  - iv. The encroachment does not result in a cumulative increase exceeding one-half foot in the BFE, after allowable encroachments;
  - v. The encroachment shall be designed to minimize increase in flood heights and located two feet above the BFE;
  - vi. The applicant has submitted certification signed by a registered professional engineer demonstrating the above provisions have been met.<sup>3</sup>
- e. Utility transmission lines provided that:
- i. Suspended utility transmission lines are designed so the lowest point of the suspended line is at least six (6) feet higher than the BFE;
  - ii. Towers and other appurtenant structures are designed and placed to withstand and minimally obstruct flood flows;

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<sup>3</sup> DNRC Model Regulations

- iii. When technically feasible, the crossing does not disturb the bed and banks of the stream and alternatives such as alternative routes, directional drilling, and aerial crossing are considered;<sup>3</sup>
  - iv. Utility transmission lines carrying toxic or flammable materials are buried to a depth at least twice the calculated maximum depth of scour for a 100-Year flood. The maximum depth of scour shall be determined by hydraulic engineering methods acceptable to the floodplain administrator;
  - v. Buried utility transmission lines, including electric and telephone, are backfilled to natural grade, compacted, and revegetated.<sup>1</sup>
- f. Storage of materials and equipment provided that all of the following are met:
- i. Petroleum products are stored on compacted fill at least two feet above the BFE and anchored to a permanent foundation to prevent downstream movement;
  - ii. The material or equipment is not subject to major damage by flooding and is properly anchored to prevent flotation or downstream movement;
  - iii. The material or equipment is readily movable within the limited time available after flood warning.
- g. Domestic water supply wells provided that all of the following are met:
- i. Assure drainage away from the wellhead;
  - ii. All structures (e.g. a well house) shall be flood-proofed per these regulations;<sup>1</sup>
  - iii. Well casings are water tight to a distance of at least 25 feet below the ground surface;
  - iv. Water supply and electrical lines have a watertight seal where the lines enter the casing;
  - v. All pumps, electrical lines and equipment are either submersible or adequately flood-proofed;
  - vi. Check valves are installed on main water lines at wells and all building entry location;

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<sup>3</sup> DNRC Model Regulations

<sup>1</sup> Planning Office

- vii. Domestic water supply wells are located at least 500 feet from irrigation and livestock supply wells.<sup>3</sup>
- h. Buried and sealed vaults for sewage disposal in recreational areas provided they meet applicable laws and standards administered by the Montana Department of Environmental Quality.
- i. Public and private campgrounds or RV parks provided that all dwellings or permanent mobile homes meet the provisions of these regulations;
- j. Structures accessory to the uses permitted in this section such as permanent<sup>1</sup> boat docks, marinas, sheds, picnic shelters, tables and toilets provided that all of the following are met:
  - i. Structures are not intended for human habitation;
  - ii. Structures will have a low flood damage potential;
  - iii. Structures are located on ground higher than the surrounding ground and as far from the channel as possible;
  - iv. Flood-proofing standards of these Regulations are met;
  - v. Structures are constructed and placed to offer a minimal obstruction to flood flows;
  - vi. Structures are anchored to prevent flotation.
- k. Agricultural structures that will have low flood damage potential, be located on higher ground, and as far from the channel as possible;<sup>3</sup>
- l. Large scale clearing of the riparian vegetation which may cause flood losses on other lands. Proposed development shall not have a large scale clearing of riparian vegetation within fifty (50) feet of the mean annual high water mark;<sup>3</sup>
- m. New construction, alteration and substantial improvement of residential structures, including manufactured homes:
  - i. All structures shall be constructed or placed such that the lowest floor elevation (including basement) is two feet or more above the BFE;<sup>2</sup>

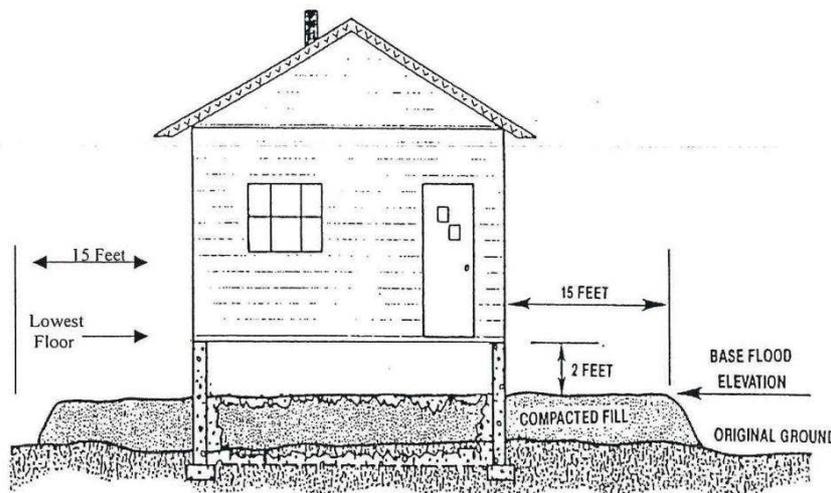
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<sup>3</sup> DNRC Model Regulations

<sup>1</sup> Planning Office

<sup>2</sup> MCA 76-5-402(2)(b)

- ii. Suitable fill shall be at an elevation no lower than the BFE and shall extend for at least fifteen feet, at that elevation, beyond the structure in all directions;
- iii. Manufactured homes shall have the chassis securely anchored to a foundation system that will resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, 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;
- iv. When a manufactured home is altered or replaced because of substantial damage as a result of a flood, or replaced on an individual site, the lowest floor shall be elevated two (2) feet above the BFE. The home can be elevated on fill or raised on a permanent foundation of reinforced concrete, reinforced mortared block, reinforced piers, or other foundation elements of at least equivalent strength.



- n. New construction, alteration, and substantial improvement of commercial and industrial structures:

- i. All structures are either constructed so the lowest floor is elevated two (2) feet above the BFE or adequately flood-proofed to two (2) feet above the BFE. The flood-proofing must meet the requirements of these Regulations;<sup>2</sup>
- ii. Manufactured homes proposed for use as commercial or industrial structures shall be elevated and anchored, rather than flood-proofed. The lowest floor shall be elevated two (2) feet above the BFE. The home can

<sup>2</sup> MCA 76-5-402(2)(c)

be elevated on fill or raised on a permanent foundation of reinforced concrete, reinforced mortared block, reinforced piers, or other foundation elements of at least equivalent strength;

iii. Flood-proofing shall be certified by a registered professional engineer that the flood-proofing methods are adequate to withstand the flood depths, hydrodynamic and hydrostatic pressures, velocities, impact, buoyancy, and uplift forces associated with the 100-Year flood:

1. If the structure is designed to allow internal flooding of areas below the lowest floor, use of this space shall be limited to parking, loading areas, building access, and storage of equipment or materials not appreciably affected by flood waters;
2. The floors and walls shall be designed and constructed of materials resistant to flooding to an elevation no lower than two feet above the BFE. Walls shall be designed to automatically equalize hydrostatic forces by allowing for entry and exit of floodwaters. Openings may be equipped with screens, louvers, valves, other coverings, or devices which permit the automatic entry and exit of floodwaters;
3. Structures whose lowest floors are used for a purpose other than parking, loading, or storage of materials resistant to flooding shall be flood-proofed to an elevation no lower than two feet above the BFE. Flood-proofing shall include impermeable membranes or materials for floors and walls and watertight enclosures for all windows, doors, and other openings. These structures shall be designed to withstand the hydrostatic, hydrodynamic, and buoyancy effects of a 100-Year flood;
4. Flood-proofing of electrical, heating, and plumbing systems shall be accomplished in accordance with Section 7.5 of these Regulations.

iv. Enclosed parking, access, or storage areas, below the BFE, shall be designed to automatically equalize hydrostatic flood forces on exterior walls. Designs for meeting this requirement shall be certified by a registered professional engineer.<sup>3</sup>

o. Private and public recreational uses that have permanent structures and require excavation or fill. Examples include golf courses, driving ranges, archery ranges, picnic grounds, parks, wildlife management and natural areas, game farms, shooting preserves, hunting and fishing areas, and bike and pedestrian trails;<sup>1</sup>

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<sup>3</sup> DNRC Model Regulations

<sup>1</sup> Planning Office

- p. Private and public boat-launching ramps, fish hatcheries, target ranges, and trap and skeet ranges that require fill or excavation;<sup>1</sup>
- q. Recreational vehicles meeting the following requirements:
- i. On site for more than 180 consecutive days;
  - ii. Not fully licensed or ready for highway use. A recreational vehicle is ready for highway use if it is on its wheel or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.<sup>1</sup>
- r. Levees and floodwalls, provided that the following are met:
- i. The structures shall be designed and constructed to safely convey a 100-year flood;
  - ii. The cumulative effect of the levee or floodwall combined with floodplain encroachments will not increase the unobstructed BFE more than 0.5 feet;
  - iii. The floodplain administrator may establish either a lower or higher permissible increase in the BFE for individual levee projects only with concurrence from the DNRC and the FEMA based upon all of the following information and criteria:
    - 1. The estimated cumulative effect of anticipated future permissible uses;
    - 2. The type and amount of existing flood-prone development in the affected area;
    - 3. The proposed levee or floodwall, except those to protect agricultural land, is constructed at least three (3) feet higher than the BFE.
- s. Bank stabilization projects, such as riprap, native revetments, weirs, if all of the following are met:
- i. The riprap is designed to withstand a 100-year flood;
  - ii. The riprap does not increase the BFE;
  - iii. The riprap will not increase erosion upstream, downstream, or adjacent to the riprap site;

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- iv. Consideration will be given to accommodate the safe passage of water craft in low flows;<sup>3</sup>
- v. It is preventive maintenance for bridge abutments, roads, industrial uses and public infrastructure.<sup>3</sup>
- t. Channelization projects if they do not significantly increase the magnitude or velocity of the BFE in the proximity of the project;
- u. Dams if all of the following criteria are met:
  - i. They are designed and constructed in accordance with The Montana Dam Safety Act and applicable safety standards;
  - ii. They will not increase flood hazards downstream, either through operational procedures or improper hydrologic/hydraulic design.
- v. Structures for the establishment of a water diversion or change in place of diversion if all of the following criteria are met:
  - i. The proper permits or documentation have been obtained from DNRC for new surface water diversions and changes in place of diversion;<sup>3</sup>
  - ii. The proposed diversion will not significantly increase the upstream BFE one-half (1/2 foot) or more or to the detriment of neighboring property;<sup>3</sup>
  - iii. The proposed diversion is designed and constructed to minimize potential erosion from a 100-Year flood;
  - iv. Any permanent diversion structure crossing the full width of the stream channel is designed and constructed to safely withstand a 100-Year flood, and is not an obstruction to the passage of water craft or fish.<sup>3</sup>
- w. All other artificial obstructions, substantial improvements or use not specifically listed or prohibited by these Regulations.

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<sup>3</sup> DNRC Model Regulations

## **7.6 100-Year Floodplain within the Lake and Lakeshore Protection Zone**

### **7.6.1 Joint Approval**

Projects regulated by the Flathead County Lake and Lakeshore Regulations that have been issued a lake and lakeshore construction permit may need to obtain a floodplain development permit for activities the floodplain administrator finds will have a significant impact on the 100-Year Floodplain and Floodway.

- a. Proposed floodplain development projects not requiring a floodplain development permit include the following:
  - i. Single residential pier docks;
  - ii. Single residential portable docks;
  - iii. Shore stations;
  - iv. Walkways;
  - v. Buoys;
  - vi. Tie off piers;
  - vii. Small scale projects that do not require adding fill or dredging.
- b. All other projects in the lake and lakeshore protection area which have a significant impact on the 100-Year Floodplain are required to obtain a floodplain development permit prior to construction.<sup>1</sup>

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<sup>1</sup> Planning Office

## **7.7 Flood Proofing**

### **7.7.1 Certification**

The following flood-proofing requirements shall be applied to a proposed structure, as stipulated by the floodplain administrator in accordance with these Regulations and the methods used shall be certified by a registered professional engineer.

### **7.7.2 Flood Proofing Conformance**

Permitted flood-proofing systems shall conform to all of the conditions listed below:

- a. Electrical Systems:
  - i. All incoming power service equipment, including all metering equipment, control centers, transformers, distribution and lighting panels and all other stationary equipment shall be located at least two feet above the BFE;
  - ii. Portable or movable electrical equipment may be placed below the BFE, if the equipment can be disconnected by a single submersible plug-and-socket assembly;
  - iii. The main power service line shall have automatic or manually operated electrical disconnect equipment located at an accessible location outside of the 100-year floodplain and above the BFE;
  - iv. All electrical wiring systems installed at or below the BFE shall be suitable for continuous submergence and may not contain fibrous components.
- b. Heating Systems:
  - i. Float operated automatic control valves shall be installed in gas furnace supply lines so that the fuel supply is automatically shut off when flood waters reach the floor level where the furnace is located;
  - ii. Manually operated gate valves shall be installed in gas supply lines. The gate valves shall be operable from a location above the BFE;
  - iii. Electric heating systems shall be installed in accordance with the provisions of these Regulations.
- c. Plumbing Systems:
  - i. Sewer lines, except those to be buried and sealed in vaults, shall have check valves installed to prevent sewage backup into permitted structures;

- ii. All toilet stools, sinks, urinals and drains shall be located such that the lowest point of possible water entry is at least two feet above the BFE.

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**CHAPTER II**  
**DEFINITIONS**  
**Replace in Chapter 2**

**ALTERATION:** Any change or addition to a structure that either increases its external dimensions or increases its potential flood hazard.

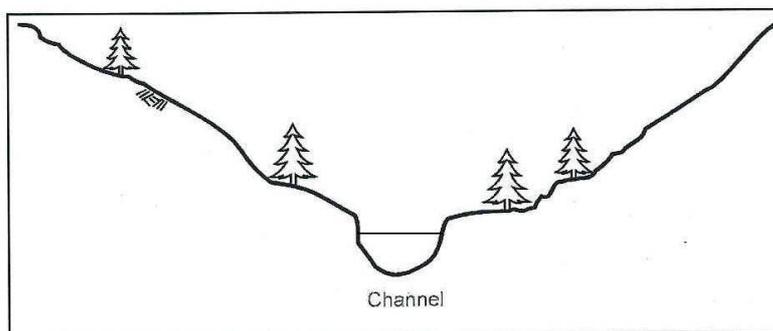
**ARTIFICIAL OBSTRUCTION:** Any obstruction which is not natural and includes any dam, diversion, wall, riprap, embankment, levee, dike, pile, abutment, projection, revetment, excavation, channel rectification, bridge, conduit, culvert, building, refuse, automobile body, fill or other analogous structure or matter in, along, across or projecting into any 100-year floodplain which may impede, retard or alter the pattern of flow of water, either in itself or by catching or collecting debris carried by the water, or that is placed where the natural flow of water would carry the same downstream to the damage or detriment of either life or property.

**BASE FLOOD:** A flood event having a one percent (1%) chance of being equaled or exceeded in any given year. A base flood is the same as a 100-year flood.

**BASE FLOOD ELEVATION:** Commonly referred to as BFE, the elevation above sea level of the base flood in relation to North American Vertical Datum of 1988 (NAVD 88) unless otherwise specified in the flood hazard study. Previous FIRMs may have been published in the National Geodetic Vertical Datum of 1929 (NGVD 29), and should be converted to NAVD 88 elevations.

**BASEMENT:** Any area of the building having its floor sub grade (below ground level) on all sides.

**CHANNEL:** The geographical area within either the natural or artificial banks of a watercourse or drain way.



**CHANNELIZATION PROJECT:** The excavation or construction of an artificial channel for the purpose of diverting the entire flow of a stream from its established course.

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

**DWELLING:** A permanent building for human habitation, a place for living purposes.

**DRAINAGE WAY:** Any depression 2 feet or more below the surrounding land serving to give direction to a current of water less than 9 months of the year and having a bed and well-defined banks.

**ELEVATED BUILDING:** A non-basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

**EROSION:** The process of the gradual wearing away of soil or land masses.

**EXISTING CONSTRUCTION:** Structures for which the “start of construction” commenced on or before the effective date of the Flathead County Floodplain and Floodway Management Regulations and/or the Flathead County Flood Insurance Study. “Existing construction” may also be referred to as “existing structures.”

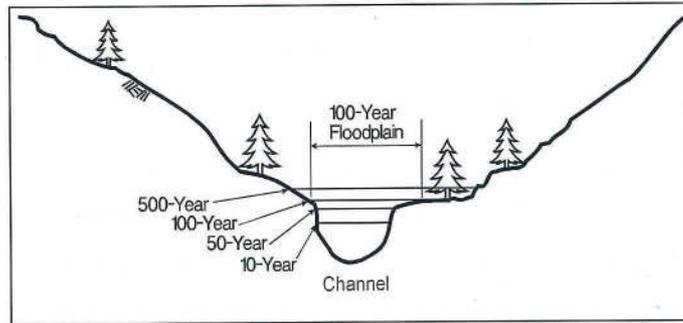
**FEMA:** The Federal Emergency Management Agency; the agency that manages compliance with the National Flood Insurance Program (NFIP) and provides flood hazards studies and maps.

**FLOOD, 100-YEAR:** A flood having a one percent (1%) chance of occurring in any given year. A 100-year flood has nearly 23 percent chance of occurring in a 25 year period. A 100-year flood is the same as a base flood.

**FLOOD INSURANCE RATE MAP (FIRM):** The map on which FEMA has delineated the 100-year floodplains, the Base Flood Elevations (BFE) and the risk premium zones.

**FLOOD INSURANCE STUDY:** The report in which FEMA has provided flood profiles, as well as the Flood Boundary/Floodway Map and the water surface profiles.

**FLOODPLAIN:** The areas generally adjoining a stream that would be covered by floodwater of a base flood except for designated shallow flooding areas that receive less than one foot of water per occurrence. The floodplain consists of a floodway and 100-Year Floodplain.

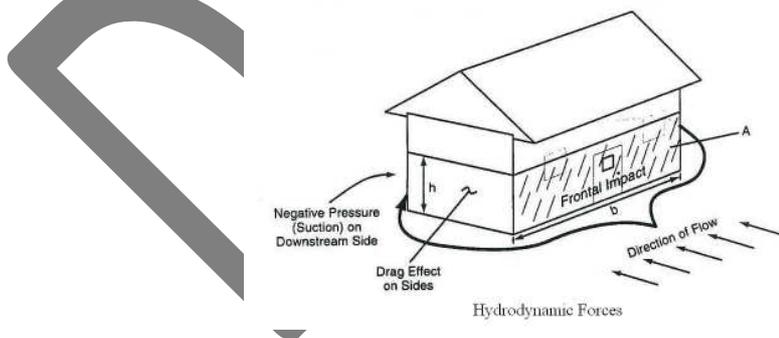


**FLOOD PROOFING:** any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, HVAC systems, structures and their contents (e.g. elevating a furnace and/or electrical outlets within a structure two feet or more above the BFE).

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

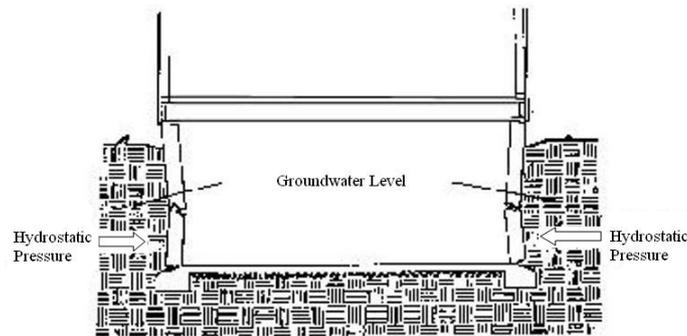
**HYDRAULICS:** The depth of water (elevation) in a drainage way, watercourse, river or stream channel.

**HYDRODYNAMICS:** The force of moving water, including the impact of debris and high velocities, along a structure.



**HYDROLOGY:** The discharge in cubic feet per second (CFS) of water in a drainage way, watercourse, river or stream channel.

**HYDROSTATIC:** The pressure put on a structure by the weight of standing water. The deeper the water, the more it weighs and the greater the pressure.



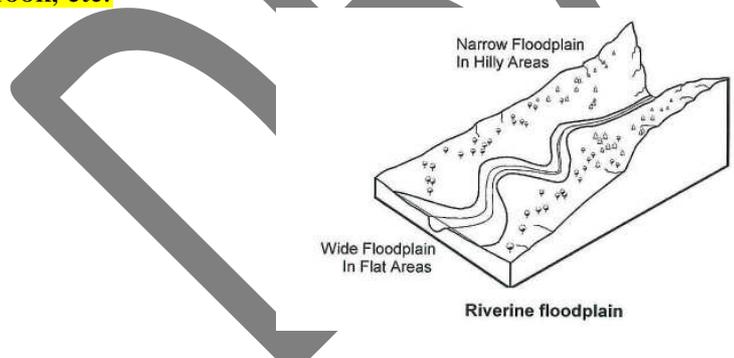
**LEVEE:** A man-made embankment, usually earthen, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

**LOWEST FLOOR:** Any floor used for living purposes, storage, or recreation. This includes any floor that could be converted to such a use such as a basement or crawl space.

**NFIP—National Flood Insurance Program; 44 CFR Chapter 1 Parts 59-79.**

**OFFICIAL FLOODPLAIN MAPS:** The most recent Flood Insurance Study for Flathead County, Montana provided by the Federal Emergency Management Agency and the most recently adopted Flood Insurance Rate Maps and Floodway Maps.

**RIVERINE:** Relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.



**Riprap:** Stone, rocks, concrete blocks or analogous material that is placed along the banks or bed of a stream to alleviate erosion.

**Substantial Damage:** Damage sustained by a structure where the cost of restoring the structure to its condition before damage would equal or exceed fifty percent (50%) of the market value before the damage occurred.

**Substantial Improvement:** Any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds fifty percent (50%) of the market value of the structure either:

- a. Before the improvement or repair is started, or
- b. If the structure has been damaged and is being restored before the damage occurred. For the purposes of this definition, substantial improvement is considered to occur when the first construction to any wall, ceiling, floor, or other structural part of the building commences. The term does not include:
  - i. Any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, or
  - ii. any alteration of a structure listed on the national register of historic places or state inventory of historic places.

**Suitable Fill:** Fill material which is stable, compacted, well graded, pervious, generally unaffected by water and frost, devoid of trash or similar foreign matter, devoid of tree stumps or other organic material, and is fitting for the purpose of supporting the intended use and/or permanent structure.

**Water Surface Elevation**—the height, in relation to the North American Vertical Datum of 1988 (NAVD 88), (or other datum where specified) of floods of various magnitudes and frequencies in the floodplain of riverine areas.

**Zone A:** The Special Flood Hazard Area (SFHA), except costal V zones, shown on a community's Flood Insurance Rate Map. There are five types of A Zones:

**A:** SFHA where no base flood elevation is provided.

**A1-30:** Numbered A Zones (e.g. A7 or A14), SFHA where the FIRM shows a base flood elevation in relation to NGVD.

**AE:** SFHA where base flood elevations are provided. AE Zone delineations are now used on new FIRMs instead of A# Zones.

**AO:** SFHA with sheet flow, ponding, or shallow flooding. Base flood depths (feet above grade) are provided.

**AH:** Shallow flooding SFHA. Base flood elevations in relation to NGVD are provided.

**Zone B:** Area of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as between the limits of the base and 500-year floods. B Zones are also used to designate base floodplains of little hazard, such as those with average depths of less than 1 foot.

**Zone C:** Area of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as above the 500-year flood level. B and C Zones may have flooding that does not meet the criteria to be mapped as a Special Flood Hazard Area, especially ponding and local drainage problems

**Zone D:** Area of undermined but possible flood hazard.

Zone V: The Special Flood Hazard Area subject to coastal high hazard flooding. There are three types of V Zones: V, V1-30, and VE, and they correspond to the A Zone designations.

Zone X: Areas of minimal flood hazard, usually depicted on the Flood Insurance Rate Maps as between the base and 500-year floods or above the 500-year floods. Newer Flood Insurance Rate Maps show Zones B and C as Zone X.

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