



SECTION 12.0 FREQUENTLY FLOODED AREAS

(from SECTION 2.0)

"FLOOD HAZARD BOUNDARY MAP (FHBM) / FLOOD INSURANCE RATE MAP (FIRM)" means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

12.1 IDENTIFICATION OF FREQUENTLY FLOODED AREAS -- CLASSIFICATION AND MAPS

12.1-1 This ordinance shall apply to all areas of special flood hazards within the jurisdiction of Garfield County.

12.1-2 The areas of special flood hazard identified by the Federal Insurance Administration on Flood **Hazard Boundary Map (FHBM) / Flood Insurance Rate Map (FIRM), dated November 15, 1977, and any revisions thereto,** Hazard Boundary Maps (FHBM) are hereby adopted by reference and declared to be a part of this Ordinance. The maps are on file at the Garfield County Courthouse. The best available information for flood hazard area identification shall be the basis for regulation until base flood elevations have been established.

12.1-3 "FREQUENTLY FLOODED AREAS" means lands in the flood plain subject to a one percent (1%) or greater chance of flooding in any given year. Frequently flooded areas perform important hydrologic functions and may present a risk to persons and property as designated by WAC 365-190-080(3). Classifications of frequently flooded areas include, at a minimum, the 100-year flood plain designations of the Federal Emergency Management Agency and the National Flood Insurance Program.

12.1-4 For planning purposes, the general distribution, location and extent of the three classes of Frequently Flooded Areas are exhibited on the Federal Emergency Management Agency Flood Hazard Boundary Maps and as defined by the individual classifications. These Maps are on file with the Garfield County Engineer's Office and the FEMA Office in **Bothell, Washington** Seattle.

12.1-5 When base flood elevation data has not been provided or is unavailable, the local administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a Federal, State or other source, in order to administer Section 12 of this Ordinance.

12.1-6 Information to be Obtained and Maintained

- 1) **Where base flood elevation data is provided through the Flood Insurance Study, FIRM, or required as in Section 12.1-5, obtain and record the actual (as-built) elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement, and record the elevation on a current FEMA elevation certificate with Section B completed by the local official.**
- 2) **2) For all new or substantially improved floodproofed nonresidential structures where base flood elevation data is provided through the FIS, FIRM, or as required in Section 12.1-5:**
 - i) **Obtain and record the elevation (in relation to mean sea level) to which the structure was floodproofed**
 - ii) **Maintain the floodproofing certifications by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet floodproofing criteria in Section 12.8-2**
- 3) **Maintain for public inspection all records pertaining to the provisions of this ordinance.**

~~Where base flood elevation data is provided through the Flood Insurance Study, or as required above, obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement. For all new or substantially improved floodproofed structures, the County shall verify and record the actual elevation in relation to mean sea level, and maintain the required floodproofing certifications. All records pertaining to the provisions of this Ordinance shall be maintained for public inspection.~~

12.2 The designated Frequently Flooded Area Classification is as follows:

CLASS I: Areas which are ***Highly Vulnerable*** to Flood Hazard; the areas within the Floodway channel of a stream.

CLASS II: Areas which are ***Vulnerable*** to Flood Hazard; land which is within the Flood Plain subject to a one percent or greater chance of flooding in any given year.

CLASS III: Areas ***not vulnerable*** to Flood Hazard; land which is not included in Class I or Class II.

12.3 AREAS OF DEVELOPMENT REVIEW

The following Area of Review shall be administered as a means of achieving the goals and objectives of this ordinance and the Washington State Growth Management Act.

Width of Boundary Review	Width of Buffer
Flash flood areas and FEMA 100-year flood Maps	N/A

12.4 DESIGNATED FREQUENTLY FLOODED AREAS -- APPLICATION FOR DEVELOPMENT

An application for development shall be made as per the process found in Section 6.0 above.

12.5 REGULATED DEVELOPMENT -- GENERAL INFORMATION REQUIREMENTS

1. New development is permitted when sited and designed in a manner which does not alter the direction, velocity, or volume of flood water in a manner which adversely impacts other property.
2. All developments must follow the provisions of the Garfield County Resource Lands & Critical Areas Development Ordinance;
3. The handling of regulated substances must comply with the provisions of this ordinance;
4. Water quality standards for frequently flooded areas shall correspond with appropriate state and federal standards.

12.6 PROTECTION OF WATER QUALITY

1. The contamination of groundwater by surface water use, discharge, or runoff shall be prevented.
2. New developments during both construction and operational phases which generate surface drainage or runoff to ground or surface water shall:
 - a. assure that the use, handling, discharge, or disposal of regulated substances be accomplished in a manner which prevents their entry into ground or surface waters;
 - b. retain and clean, to current state discharge standard, runoff prior to its discharge into ground or surface water;
 - c. ensure that runoff stormwater drainage will not result in soil erosion or water quality degradation.
3. Water quality standard for Frequently Flooded Areas shall correspond with appropriate State and Federal standards.

PROVISIONS FOR FLOOD HAZARD REDUCTION

12.7 GENERAL STANDARDS

In all areas of special flood hazards, the following standards are required:

12.7-1 Anchoring

- (1) All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.
- (2) All manufactured homes must likewise be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques).

12.7-2 Construction Materials and Methods

- (1) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- (2) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
- (3) Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

12.7-3 Utilities

- (1) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (2) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters; and,
- (3) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- (4) Water wells shall be located on high ground that is not in the floodway.**

12.7-4 Subdivision Proposals

- (1) All subdivision proposals shall be consistent with the need to minimize flood damage;

- (2) All subdivision proposals shall have public utilities (where available) and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;
- (3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and,
- (4) Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or 5 acres (whichever is less).

12.7-5 Review of Building Permits

Where elevation data is not available either through the Flood Insurance Study or from another authoritative source, applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above the **highest adjacent** grade in these zones may result in higher insurance rates.

12.7-6 Alteration of Watercourses

- (1) Notify adjacent communities and the Department of Ecology prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.
- (2) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

12.8 **SPECIFIC STANDARDS**

In all areas of special flood hazards where base flood elevation data has been determined, the following provisions are required:

12.8-1 Residential Construction

- (1) New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to not less than one foot above the base flood elevation.
- (2) Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must be either certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

- (i) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
- (ii) The bottom of all openings shall be no higher than one foot above grade.
- (iii) Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

12.8-2 Nonresidential Construction

New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated to not less than one foot above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

- (1) Be floodproofed so that below one foot above the base flood level the structure is watertight with walls substantially impermeable to the passage of water;
- (2) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
- (3) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in Section 12.1.
- (4) Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in 12.8-1(2);
- (5) Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g. a building constructed to the base flood level will be rated as one foot below.)

12.8-3 MANUFACTURED HOMES

All manufactured homes to be placed or substantially improved within Zones A on the community's **FHBM**/ FIRM on sites:

- (i) outside of a manufactured home park or subdivision,
- (ii) In a new manufactured home park or subdivision,
- (iii) In an expansion to an existing manufactured home park or subdivision, or
- (iv) In an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood; be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to not less than one foot above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation collapse and lateral movement. Manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision within Zone A on the community's FIRM that are not subject to the above manufactured home provisions be elevated so that either:

- (i) The lowest floor of the manufactured home is elevated to not less than one foot above the base flood elevation, or
- (ii) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement. At a minimum a "reinforced pier" would have a footing adequate to support the weight of the manufactured home under saturated soil conditions such as occur during a flood. In addition, if stacked concrete blocks are used, vertical steel reinforcing rods should be placed in the hollows of the blocks and those hollows filled with concrete or high strength mortar. In areas subject to high velocity floodwaters and debris impact, cast-in-place reinforced concrete piers may be appropriate.

12.8-4 Recreational vehicles placed on sites within Zone A on the community's **FHBM/FIRM** must either:

- (i) Be on the site for fewer than 180 consecutive days, and
- (ii) Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
- (iii) Meet the permitting requirements above and the elevation and anchoring requirements for manufactured homes.

12.9 FLOODWAYS

Located within areas of special flood hazard are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

- (1) Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- (2) Construction or reconstruction of residential structures is prohibited within designated floodways, except for (i) repairs, reconstruction, or improvements to a structure which do not increase the ground floor area; and (ii) repairs, reconstruction or improvements to a structure, the cost of which does not exceed 50 percent of the market value of the structure either (A) before the repair, or reconstruction is started, or (B) if the structure has been damaged, and is being restored, before the damage occurred. Work done on structures to comply with existing health, sanitary, or safety codes which have been identified by the local code

enforcement official or to structures identified as historic places shall not be included in the 50 percent.

- (3) If Section 12.9 (1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions.

12.10 CRITICAL FACILITIES

Construction of new critical facilities shall be, to the extent possible, located outside the limits of the Special Flood Hazard Area (SFHA) (100-year flood plain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet or more above the level of the base flood elevation (100-year) at the site. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into flood waters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.