

## CHAPTER 10. FLOOD DAMAGE PREVENTION

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## Article 10-1. Purposes.

### 10-1-1. Statement of Purpose.

### 10-1-2. Methods of Reducing Flood Losses.

#### 10-1-1. Statement of Purpose.

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

1. To protect human life and health;
2. To minimize expenditure of public money for costly flood control projects;
3. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. To minimize prolonged business interruptions;
5. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;
6. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
7. To ensure that potential buyers are notified that property is in an area of special flood hazard; and,
8. To ensure that those who occupy the areas of special flood hazards assume responsibility for their actions.

(Ord. No. 661, Revised, 04/10/90)

#### 10-1-2. Methods of Reducing Flood Losses.

A. In order to accomplish its purposes, this Chapter includes methods and provisions for:

1. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
2. Requiring that uses vulnerable to floods, including facilities which serve such uses, be

protected against flood damage at the time of initial construction;

3. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;

4. Controlling filling, grading, dredging, and other development which may increase flood damage; and,

5. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

(Ord. No. 661, Revised, 04/10/90)

**Article 10-2. Definitions**

**10-2-1. Definitions.**

**10-2-1. Definitions.**

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

**Areas of special flood hazard** shall mean the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year.

**Base flood** shall mean the flood having a one percent chance of being equaled or exceeded in any given year.

**Development** shall mean 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 located within the area of special flood hazard.

**Flood** or **flooding** shall mean a general and temporary condition of partial or complete inundation of normally dry land areas from:

1. The overflow of inland or tidal waters and/or
2. The unusual and rapid accumulation or runoff of surface waters from any source.

**Flood Insurance Rate Map (FIRM)** shall mean an official map of a community on which the Federal Emergency Management Agency has delineated areas of special flood hazard designated as Zone A.

**Manufactured home** shall mean a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. This term also includes park trailers, travel trailers and other similar vehicles placed on a site for greater than 180 consecutive days.

**Structure** shall mean a walled and roofed building or manufactured home that is principally above ground.

**Substantial improvement** shall mean any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:

1. Before the improvement or repair is started, or
2. If the structure has been damaged and is being restored, before the damage occurred. For the purpose of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.

The term does not, however, include either:

1. 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

2. Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

(Ord. No. 661, Revised, 04/10/90)

### **Article 10-3. General Provisions**

#### **10-3-1. Application of this Chapter.**

#### **10-3-2. Basis for establishing the areas of Special Flood Hazard.**

#### **10-3-3. Compliance.**

#### **10-3-4. Abrogation and Greater Restrictions.**

#### **10-3-5. Interpretation.**

#### **10-3-6. Warning and Disclaimer of Liability.**

#### **10-3-1. Application of this Chapter.**

This Chapter shall apply to all areas of special flood hazards within the City of Orem.  
(Ord. No. 661, Revised, 04/10/90)

#### **10-3-2. Basis for establishing the areas of Special Flood Hazard.**

The areas of special flood hazard identified by the Federal Emergency Management Agency in its Flood Insurance Rate Map (FIRM), dated September 24, 1984, is adopted by reference and declared to be part of this Chapter. The FIRM is on file at the City of Orem Recorder's Office, 56 North State Street, Orem, Utah.  
(Ord. No. 661, Revised, 04/10/90)

#### **10-3-3. Compliance.**

No structure or land shall hereafter be constructed, located, extended, or altered without full compliance with the terms of this chapter and other applicable regulations.  
(Ord. No. 661, Revised, 04/10/90)

#### **10-3-4. Abrogation and Greater Restrictions.**

This Chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Chapter and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.  
(Ord. No. 661, Revised, 04/10/90)

#### **10-3-5. Interpretation.**

In the interpretation of this Chapter, all provisions shall be:

A. Considered as minimum requirements;  
(Ord. No. 661, Revised, 04/10/90)

B. Liberally construed in favor of the governing body; and  
(Ord. No. 661, Revised, 04/10/90)

C. Deemed neither to limit nor repeal any other powers granted under State statutes.  
(Ord. No. 661, Revised, 04/10/90)

#### **10-3-6. Warning and Disclaimer of Liability.**

The degree of flood protection required by this Chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This Chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This Chapter shall not create liability on the part of the City of Orem, any officer or employee thereof, or the Federal Emergency Management Agency for any flood damages that result from reliance on this Chapter or any administrative decision lawfully made thereunder.  
(Ord. No. 661, Revised, 04/10/90)

**Article 10-4. Administration**

**10-4-1. Establishment of Development Permit.**

**10-4-2. Issuance of Development Permit.**

**10-4-3. Permit Review Procedures.**

**10-4-1. Establishment of Development Permit.**

A. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 10-3-2. Application for a development permit shall be made on forms furnished by the City of Orem and may include, but not be limited to:

(Ord. No. 661, Revised, 04/10/90)

B. Plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing. Specifically, the following information is required:

1. Elevation in relation to mean sea level of the lowest floor (including basement) of all structures;
2. Elevation in relation to mean sea level to which any structure has been floodproofed;
3. Certification by a registered professional engineer or architect that the floodproofing methods for any non-residential structure meet the floodproofing criteria in Section 10-5-2(B); and
4. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

(Ord. No. 661, Revised, 04/10/90)

**10-4-2. Issuance of Development Permit.**

The Development Review Committee is hereby appointed to administer and implement this Chapter by granting or denying development permit applications in accordance with its provisions.

(Ord. No. 661, Revised, 04/10/90)

**10-4-3. Permit Review Procedures.**

A. The Development Review Committee shall review all development permits to determine:

1. That the permit requirements of this Chapter have been satisfied.
2. That all necessary permits have been obtained from those Federal, State or local governmental agencies from which prior approval is required.
3. If the proposed development adversely affects the flood carrying capacity of the area of special flood hazard. For the purposes of this Chapter, "adversely affects" means damage to

adjacent properties because of rises in flood stages attributed to physical changes of the channel and the adjacent overbank areas.

a. If it is determined that there is no adverse effect and the development is not a building, then the permit shall be granted without further consideration.

b. If it is determined that there is an adverse effect, then technical justification, such as a registered professional engineer's certification, for the proposed development shall be required.

c. If the proposed development is a building, then the provisions of this Chapter shall apply.

(Ord. No. 661, Revised, 04/10/90)

B. When base flood elevation data has not been provided in accordance with Section 10-3-2, the Development Review Committee shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a Federal, State, or other source as criteria for requiring that new construction, substantial improvements, or other development in Zone A are administered in accordance with Section 10-5-2 of this Chapter.

(Ord. No. 661, Revised, 04/10/90)

C. The following information shall be furnished to the City and kept on file with each development permit:

1. 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.

2. For all new or substantially improved floodproofed structures verification of the actual elevation in relation to mean sea level to which the structure has been floodproofed.

3. Verification that adjacent communities and the Utah State Coordinator for Emergency Management have been notified prior to any alteration or relocation of a watercourse. Evidence of such notification shall be furnished to the Federal Emergency Management Agency.

(Ord. No. 661, Revised, 04/10/90)

D. The developer shall provide maintenance within the altered or relocated portion of such watercourse, described in subparagraph (3) above, so that the flood carrying capacity is not diminished.

(Ord. No. 661, Revised, 04/10/90)

E. The Development Review Committee shall make interpretations, where needed, as to the exact location of the boundaries of the areas of special flood

hazards. For example: where there appears to be a conflict between a mapped boundary and actual field conditions.

(Ord. No. 661, Revised, 04/10/90)

**Article 10-5. Provisions for Flood Hazard Reduction**

**10-5-1. General Standards.**

**10-5-2. Specific Standards.**

**10-5-1. General Standards.**

A. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure and capable of resisting the hydrostatic and hydrodynamic loads.

(Ord. No. 661, Revised, 04/10/90)

B. All manufactured homes must be elevated and anchored to resist flotation, collapse or lateral movement and capable of resisting the hydrostatic and hydrodynamic loads. Methods of anchoring may include, but are not limited to use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces. Specific requirements may be:

1. Over-the-top ties be provided at each of the four corners of the manufactured home, with two additional ties per side at intermediate locations, with manufactured homes less than fifty feet (50') long requiring one additional tie per side.

2. Frame ties be provided at each corner of the home with five additional ties per side at intermediate points, with manufactured homes less than fifty feet (50') long requiring four additional ties per side.

3. All components of the anchoring system be capable of carrying a force of 4,800 pounds.

4. Any additions to the manufactured home be similarly anchored.

(Ord. No. 661, Revised, 04/10/90)

C. All new construction and substantial improvements shall be constructed:

1. With materials and utility equipment resistant to flood damage.

2. Using methods and practices that minimize flood damage.

3. 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.

(Ord. No. 661, Revised, 04/10/90)

D. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

(Ord. No. 661, Revised, 04/10/90)

E. 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.

(Ord. No. 661, Revised, 04/10/90)

F. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

(Ord. No. 661, Revised, 04/10/90)

G. Base flood elevation data shall be provided for subdivision proposals and other proposed development which contain at least fifty (50) lots or five (5) acres, whichever is less. All subdivision proposals shall:

1. Be consistent with the need to minimize flood damage.

2. Have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.

3. Have adequate drainage provided to reduce exposure to flood damage.

(Ord. No. 661, Revised, 04/10/90)

H. Encroachments, including fill, new construction, substantial improvements, and other development shall be prohibited in any floodway unless a technical evaluation demonstrates that the encroachments will not result in any increase in flood levels during the occurrence of the base flood discharge.

(Ord. No. 661, Revised, 04/10/90)

**10-5-2. Specific Standards.**

In all areas of special flood hazards where base flood elevation data has been provided as set forth in Section 10-4-3(C) the following standards are required:

A. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above the base flood elevation.

(Ord. No. 661, Revised, 04/10/90)

B. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor (including basement) elevated to the level of the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

1. Be floodproofed so that below the base flood elevation 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 the provisions of this paragraph. Such certifications shall be provided to the official as set forth in Section 10-4-3(C).

(Ord. No. 661, Revised, 04/10/90)