

Chapter 14

FLOOD PROTECTION*

* **Cross References:** Mobile homes and recreational vehicles, Ch. 17; planning, Ch. 23; soil erosion control, Ch. 27; subdivision regulations, Ch. 30; utilities and services, Ch. 34; waterways, Ch. 37; zoning, Ch. 38.

State Law References: Soil conservation districts law, MCL 282.1 et seq., MSA 13.1781 et seq.; soil erosion and sedimentation control act, MCL 282.101 et seq., MSA 13.1820(1) et seq.

Art. I. In General, §§ 14-1--14-25

Art. II. Administration, §§ 14-26--14-47

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ARTICLE I.

IN GENERAL

Sec. 14-1. 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 most reasonable application.

Appeal means a request for a review of the building inspector's interpretation of any provision of this chapter or a request for a variance.

Area of shallow flooding means a designated AO Zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from one (1) to three (3) feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and, velocity flow may be evident.

Area of special flood hazard means the land in the flood plain within a community subject to a one (1) percent or greater chance of flooding in any given year.

Base flood means the flood having a one (1) percent chance of being equalled or exceeded in any given year.

Development means 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.

Existing mobile home park or mobile home subdivision means a parcel (or contiguous parcels) of land divided into two (2) or more mobile home lots for rent or sale for which the construction of facilities for servicing the lot on which the mobile home is to be affixed (including, at a minimum, the installation of utilities either final site grading or the pouring of concrete pads, and the construction of streets) is completed before

February 7, 1982.

Expansion to an existing mobile home park or mobile home subdivision means the preparation of additional sites by the construction of facilities for servicing the lots on which the mobile homes are to be affixed (including the installation of utilities, either final site grading or pouring of concrete or the construction of streets).

Flood or flooding means 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 of runoff of surface waters from any source.

Flood insurance rate map (FIRM) means the official map on which the Federal Emergency Management Agency (formerly the federal insurance administration) has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

Flood insurance study means the official report provided in which the Federal Emergency Management Agency (formerly the federal insurance administration) has provided flood profiles, as well as the flood boundary-floodway map and the water surface elevation of the base flood.

Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one-tenth of a foot.

Habitable floor means any floor useable for living purposes, which includes working, sleeping, eating, cooking or recreation, or a combination thereof. A floor used only for storage purposes is not a "habitable floor."

Mobile home means a structure that is transportable in one or more sections, built on a permanent chassis, and designed to be used with or without a permanent foundation when connected to the required utilities. It does not include recreational vehicles or travel trailers.

New construction means structures for which the "start of construction" commenced on or after February 7, 1982.

New mobile home park or mobile home subdivision means a parcel (or contiguous parcels) of land divided into two (2) or more mobile home lots for rent or sale for which the construction of facilities for servicing the lot (including, at a minimum, the installation of utilities, either final site grading or the pouring of concrete pads, and the construction of streets) is completed on or after February 7, 1982.

Start of construction means the first placement of permanent construction of a structure (other than a mobile home) on a site, such as the pouring of slabs or footings or any work beyond the stage of excavation. Permanent construction does not include land preparation, such as clearing, grading, and filling, nor does it include the installation of streets and/or walkways; nor does it include the excavation for a basement, footings,

piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not as part of the main structure. For a structure (other than a mobile home) without a basement or poured footings, the "start of construction" includes the first permanent framing or assembly of the structure or any part thereof on its piling or foundation. For mobile homes not within a mobile home park or mobile home subdivision, "start of construction" means the affixing of the mobile home to its permanent site. For mobile homes within mobile home parks or mobile home subdivisions, "start of construction" is the date on which the construction of facilities for servicing the site on which the mobile home is to be affixed (including, at a minimum, the construction of streets, either final site grading or the pouring of concrete pads, and installation of utilities) is completed.

Structure means a walled and roofed building, a mobile home, or a gas or liquid storage tank, that is principally above ground.

Substantial improvement means any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds fifty (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 purposes 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.

Variance means a grant of relief from the requirements of this chapter which permits construction in a manner that would otherwise be prohibited by this chapter.

(Ord. No. 387, § 2.0, 1-18-82)

Sec. 14-2. Findings of fact.

(a) The flood hazard areas of the city are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

(b) These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also

contribute to the flood loss.
(Ord. No. 387, § 1.2, 1-18-82)

Sec. 14-3. Statement of purpose.

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 in 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 second 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 hazard assume responsibility for their actions.

(Ord. No. 387, § 1.3, 1-18-82)

Sec. 14-4. Methods of reducing flood losses.

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 the initial construction;
- (3) Controlling the alteration of natural flood plains, 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. 387, § 1.4, 1-18-82)

Sec. 14-5. Application.

The provisions of this chapter shall apply to all areas of special flood hazards within the jurisdiction of the city.

(Ord. No. 387, § 3.1, 1-18-82)

Sec. 14-6. Study, maps adopted.

The areas of special flood hazard identified by the Federal Emergency Management Agency (formerly the federal insurance administration) in a scientific and engineering report entitled "The Flood Insurance Study for the city, dated January 16, 2003," with accompanying flood insurance rate maps and flood boundary-floodway maps is hereby adopted by reference and declared to be a part of this chapter. The flood insurance study is on file at city hall.

(Ord. No. 387, § 3.2, 1-18-82; Ord. No. 623, § 1, 1-6-03)

Sec. 14-7. Violations, penalties.

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violation of the provisions of this chapter by failure to comply with any of its requirements (including violations of condition and safeguards established in connection with conditions) shall constitute a misdemeanor.

(Ord. No. 387, § 3.3, 1-18-82)

Sec. 14-8. 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 other provisions of this Code, law or ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(Ord. No. 387, § 3.4, 1-18-82)

Sec. 14-9. Interpretation.

In the interpretation and application of this chapter, all provisions shall be:

- (1) Considered as minimum requirements;
- (2) Liberally construed in favor of the council; and,
- (3) Deemed neither to limit nor repeal any other powers granted under state statutes.

(Ord. No. 387, § 3.5, 1-18-82)

Sec. 14-10. 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 such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the city, any officer or employee thereof of the Federal Emergency Management Agency (formerly the federal insurance administration), for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder.

(Ord. No. 387, § 3.6, 1-18-82)

Secs. 14-11--14-25. Reserved.

ARTICLE II.

ADMINISTRATION*

* **Cross References:** Administration, Ch. 2.

Sec. 14-26. Development permit.

A development permit shall be obtained before construction or development begins within any area of special flood hazard established in section 14-6. Application for a development permit shall be made on forms furnished by the city and may include, but not be limited to: plans to 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 shall be 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 14-49(2); and
- (4) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

(Ord. No. 387, § 4.1, 1-18-82)

Sec. 14-27. Designation of building inspector.

The building inspector is hereby appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions.

(Ord. No. 387, § 4.2, 1-18-82)

Sec. 14-28. Building inspector's duties, responsibilities.

The duties of the building inspector shall include, but not be limited to:

- (1) Review of all development permits to determine that the permit requirements of this chapter have been satisfied;
- (2) Review of all development permits to determine that all necessary permits have been obtained from those federal, state, or local governmental agencies from which prior approval is required;
- (3) Review of all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of section 14-50(1) are met.

(Ord. No. 387, § 4.3, 1-18-82)

Sec. 14-29. Use of other base flood data.

When base flood elevation data has not been provided in accordance with section 14-6, the building inspector shall obtain, review, and reasonably utilize any base flood elevation data available from a federal, state, or other source, in order to administer sections 14-49(1) and 14-49(2).

(Ord. No. 387, § 4.3-2, 1-18-82)

Sec. 14-30. Information to be obtained and maintained.

The building inspector shall:

- (1) Obtain and record the actual elevation (in relation to mean sea level) of the lowest habitable floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement;
- (2) For all new substantially improved floodproofed structures:
 - a. Verify and record the actual elevation (in relation to mean sea level); and
 - b. Maintain the floodproofing certifications required in section 14-26(3);
- (3) Maintain for public inspection all records pertaining to the provisions of this chapter.

(Ord. No. 387, § 4.3-3, 1-18-82)

Sec. 14-31. Alteration of watercourses.

The building inspector shall:

- (1) Notify adjacent communities and the state department of natural resources prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency (formerly the federal insurance administration);

- (2) Require that maintenance is provided within the altered or relocated portion of the watercourse so that the flood carrying capacity is not diminished.

(Ord. No. 387, § 4.3-4, 1-18-82)

Sec. 14-32. Interpretation of FIRM boundaries.

The building inspector 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). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in sections 14-33 and 14-34.

(Ord. No. 387, § 4.3-5, 1-18-82)

Sec. 14-33. Appeal board.

(a) The building appeals board as established by the city shall hear and decide appeals and requests for variances from the requirements of this chapter.

(b) The building appeals board shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the building inspector in the enforcement or administration of this chapter.

(c) Those aggrieved by the decision of the building appeals board or any taxpayer, may appeal such decision.

(d) In passing upon such applications, the building appeals board shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and:

- (1) The danger that materials may be swept onto other lands to the injury of others;
- (2) The danger to life and property due to flooding or erosion damage;
- (3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage to the individual owner;
- (4) The importance of the services provided by the proposed facility to the community;
- (5) The necessity to the facility of a waterfront location, where applicable;
- (6) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
- (7) The compatibility of the proposed use with existing and anticipated development;
- (8) The relationship of the proposed use to the comprehensive plan and flood plain management program of that area;

- (9) The safety of access to the property in times of flood for ordinary and emergency vehicles;
- (10) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
- (11) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

(e) Upon consideration of the factors of (c) of this section and the purposes of this chapter, the building appeals board may attach such conditions to the granting of variances as it deems necessary to further the purposes of this chapter.

(f) The building inspector shall maintain the records of all appeal actions, including technical information, and report any variances to the Federal Emergency Management Agency (formerly the federal insurance administration) upon request.

(Ord. No. 387, § 4.4-1, 1-18-82)

Cross References: Boards and commissions generally, § 2-216 et seq.

Sec. 14-34. Conditions for variances.

(a) Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing items (1) through (11) in section 14-33(c) have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.

(b) Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the state inventory of historic places, without regard to the procedures set forth in the remainder of this section.

(c) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

(d) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(e) Variances shall only be issued upon:

- (1) A showing of good and sufficient cause;
- (2) A determination that failure to grant the variance would result in exceptional hardship to the applicant; and
- (3) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on

or victimization of the public as identified in section 14-33(d), or conflict with existing local laws or ordinances.

(f) Any applicant to whom a variance is granted shall be given written notice that the structures will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation. (Ord. No. 387, § 4.4-2, 1-18-82)

Secs. 14-35--14-47. Reserved.

ARTICLE III.

STANDARDS

Sec. 14-48. General standards.

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

(1) *Anchoring:*

- a. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.
- b. All mobile homes shall be anchored to resist flotation, collapse, or lateral movement by providing over-the-top and frame ties to ground anchors. Special requirements shall be that:
 1. Over-the-top ties be provided at each of the four (4) corners of the mobile home, with two (2) additional ties per side at intermediate locations, with mobile homes less than fifty (50) feet long requiring one additional tie per side;
 2. Frame ties be provided at each corner of the home with five (5) additional ties per side at intermediate points, with mobile homes less than fifty (50) feet long requiring four (4) additional ties per side;
 3. All components of the anchoring system be capable of carrying a force of four thousand eight hundred (4,800) pounds; and,
 4. Any additions to the mobile home be similarly anchored.

(2) *Construction materials and methods:*

- a. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- b. All new construction and substantial improvements shall be constructed using methods

and practices that minimize flood damage.

(3) *Utilities:*

- a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
- b. 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.
- c. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

(4) *Subdivision proposals:*

- a. All subdivision proposals shall be consistent with the need to minimize flood damage.
- b. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
- c. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.
- d. 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).

(Ord. No. 387, § 5.1, 1-18-82)

Sec. 14-49. Specific standards.

In all areas of special flood hazards where base flood elevation data have been provided as set forth in section 14-6 or in section 14-29 the following standards are required:

- (1) *Residential construction.* New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one foot above base flood elevation.
- (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 one foot above base flood elevation; or, together with attendant utility and sanitary facilities, shall:
 - a. Be flood proofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;
 - b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and

effects of buoyancy; and

- c. Be certified by a registered professional engineer or architect that the standards of this subsection are satisfied. Such certifications shall be provided to the official as set forth in section 14-30(2).

(3) *Mobile homes.*

- a. Mobile homes shall be anchored in accordance with section 14-48(1)b.
- b. For new mobile home parks and mobile home subdivisions; for expansions to existing mobile home parks and mobile home subdivisions; for existing mobile home parks and mobile home subdivisions where the repair, reconstruction, or improvement of the streets, utilities and pads equals or exceeds fifty (50) percent of value of the streets, utilities and pads before the repair, reconstruction or improvement has commenced; and for mobile homes not placed in a mobile home park or mobile home subdivision, require that:
 1. Stands or lots are elevated on compacted fill or on pilings so that the lowest floor of the mobile home will be at or above the base flood level;
 2. Adequate surface drainage and access for a hauler are provided; and
 3. In the instance of elevation on pilings, that:
 - i. Lots are large enough to permit steps;
 - ii. Piling foundations are placed in stable soil no more than ten (10) feet apart;
 - iii. Reinforcement is provided for pilings more than six (6) feet above the ground level.
- c. No mobile home shall be placed in a floodway, except in an existing mobile home park or an existing mobile home subdivision.

(Ord. No. 387, § 5.2, 1-18-82; Ord. No. 659, § 1, 8-16-04)

Sec. 14-50. Floodways.

Located within areas of special flood hazard established in section 14-6 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 are prohibited unless a technical evaluation demonstrates that encroachments shall not result in any increase in flood levels or flood hazards during the occurrence of the base flood discharge.

(2) If subsection (1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this article.

(Ord. No. 387, § 5.3, 1-18-82)