Crook County Community Development
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Proposed Text Amendments

Contents

Flood Plain Code Language

Request: To replace Floodplain Standards for Crook County.

Background: As a participating member of the national flood insurance program (FIP), the county implements the Federal Emergency management Agency's mapped special flood hazard areas. The program was implemented in the 1960's to provide a nationally backed flood insurance program for property owners. Over the years the implementation of building regulations and mapping has improved the losses from flooding.

Why are we requesting the Floodplain language in our County Code be replaced?

I. Background

The current floodplain code in Chapter 18.84 of the Crook County Code was codified in 2003 with Ordinance 18, which adopted the existing language for the county. Then in 2012, with Ordinance 253, the county adopted changes to the code language stemming from remapping the floodplain in the county conducted by FEMA. No further changes have been made to this chapter. In 2019, the State published a model floodplain code. Many other jurisdictions have adopted the model code language, including the City of Prineville and have been implementing. County staff is asking the Planning Commission to consider replacing the current Chapter 18.84 language with the State of Oregon Model Flood Hazard Management Ordinance.

II. Timeline

- September 2024 – Code Update Worksession
- January 2025 - Planning Commission Hearing for Code Amendments
- February 2025 – Board of County Commissioners Public Hearing #1
- February 2025 - Board of County Commissioners Public Hearing # 2
- February 2025 – Potential implementation of updated code

III. Concerns

Additionally, staff would like to inform the Planning Commission regarding the current ask from FEMA. As a National Floodplain Insurance Program participating community with mapped areas of floodplain identified in FEMA's area of habitat assessment for threatened and endangered species. They are asking local jurisdictions to make decisions and policy updates before the release of final implementation and anticipate further changes. However, those changes are
and procedures are in addition to the Oregon Model Floodplain code and not a part of this request.

Included in the packet is information regarding the current direction from FEMA and brought to the attention of the Planning Commission to be aware of potential upcoming discussions. The Board of County Commissioners has asked to be apprised of the Planning Commissions thoughts regarding the current FEMA/NFIP situation and therefore the discussion tonight will include that information.

Chapter 18.16.010 Exclusive Farm Use Zone Use Table

Request: To discuss the option of removing the additional language of the SFHA in regard to this standard. It is more restrictive than the State standards.

Background: Model Code optional language that was proposed by the consultants.
Not in Statute 215.283 (t) Irrigation reservoirs, canals, delivery lines and those structures and accessory operational facilities, not including parks or other recreational structures and facilities, associated with a district as defined in ORS 540.505;
or in OAR 660-033-0120

A	A	Irrigation reservoirs canals delivery lines and those structures and accessory operational facilities not including parks or other recreational structures and facilities associated with a district as defined in ORS 540.505.

Proposed Amendments:

6	**Utility/Solid Waste Disposal Facilities**		
6.1	Irrigation reservoirs, canals, delivery lines and those structures and accessory operational facilities, not including parks or other recreational structures and facilities, associated with a district as defined in ORS 540.505. ~~This provision does not include proposals within areas of special flood hazard, as identified by FEMA.~~	A	P

Chapter 15.08 Flood Damage Prevention

Sections:

15.08.010 Short title.

The county court of Crook County, Oregon, declares this chapter to be known as the "Crook County flood damage prevention ordinance." (Ord. 38 Amd. 2 § 1, 2000)

15.08.020 Purpose.

The purpose of this chapter is 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 and 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 hazard assume responsibility for their actions. (Ord. 38 Amd. 2 § 2, 2000)

15.08.030 Flood plain administrator and duties.

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

The duties of the planning director shall include, but not be limited to:

(1) Permit Review.

(a) Review all development permits to determine that the permit requirements of this chapter have been satisfied.

(b) Review 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.

(2) Use of Other Base Flood Data. When base flood elevation data has not been provided in accordance with CCC 15.08.050, the planning director shall obtain BFE information from the applicant for review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source, in order to administer specific standards and floodways.

(3) Information to Be Obtained and Maintained.

(a) Where base flood elevation data is provided through the Flood Insurance Study or as otherwise required, obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (as determined by FEMA elevation certificates and instructions) of all new or substantially improved structures, and whether or not the structure contains a basement.

(b) For all new or substantially improved floodproofed structures:

(i) Verify and record the actual elevation (in relation to mean sea level); and

(ii) Maintain the floodproofing certifications required for permit review.

(c) Maintain for public inspection all records pertaining to the provisions of this chapter.

(4) Alteration of Watercourses.

(a) Notify adjacent communities and the department of land conservation and development prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.

(b) Require that maintenance be provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished. (Ord. 253 § 3 (Exh. C), 2012; Ord. 38 Amd. 2 § 3, 2000)

15.08.040 Definitions.

Unless specifically defined below, words or phases 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.

"Appeal" means a request for a review of the planning director's interpretation of any provision of this chapter or a request for a variance.

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

"Area of special flood hazard" means the land in the flood plain within a community subject to a one percent or greater chance of flooding in any given year. Designation on maps always includes the letters A or V.

"Base flood" means the flood having a one percent chance of being equaled or exceeded in any given year. Also referred to as the "100-year flood." Designation on maps always includes the letter A.

"Basement" means any area of the building having its floor subgrade below ground level on all sides; a floor that is below ground level (grade) on all sides, even if the floor is used for living purposes, or as an office, garage workshop, etc.

"Below-grade crawlspace" means an enclosed area below the base flood elevation in which the interior grade does not exceed two feet below the lowest adjacent exterior grade and the height, measured from the interior grade of the crawlspace to the bottom of the lowest horizontal structural member of the lowest floor, does not exceed four feet at any point.

“Development” means any manmade 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 located within the area of special flood hazard. [44 CFR Part 59.1]

“Essential facility” or “critical facility” means:

(a) Hospitals and other medical facilities having surgery and emergency treatment areas;
(b) Fire and police stations;
(c) Tanks or other structures containing, housing or supporting water or fire-suppression materials or equipment required for the protection of essential or hazardous facilities or special occupancy structures;
(d) Emergency vehicle shelters and garages;
(e) Structures and equipment in emergency-preparedness centers;
(f) Standby power generating equipment for essential facilities; and
(g) Structures and equipment in government communication centers and other facilities required for emergency response. [ORS 455.447 and Table 1-1 of ASCE 24]

“Flood” or “flooding” means a general and temporary condition of partial or complete inundation of normally dry land areas from:

(a) The overflow of inland or tidal waters; and/or
(b) 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 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 by the Federal Insurance Administration that includes flood profiles, the Flood Boundary 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 foot.

“Lowest floor” means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area, is not considered a building’s lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable nonelevation design requirements of this chapter.

“Manufactured home” means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for the use with or without a permanent foundation when connected to the required utilities. For flood plain management purposes, the term “manufactured home” also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days. For insurance purposes, the term “manufactured home” does not include park trailers, travel trailers and other similar vehicles.

“Manufactured home park or subdivision” means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

“New construction” means structures for which the “start of construction” commenced on or after the effective date of the ordinance codified in this chapter.

“Recreational vehicle” means a vehicle that is:

(a) Built on a single chassis;
(b) Four hundred square feet or less when measured at the largest horizontal projection;
(c) Designed to be self-propelled or permanently towed by a light duty truck; and
(d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use. [44 CFR Part 59.1]

"Start of construction" includes substantial improvements, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundation 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 part of the main structure.

"Structure" means a walled and roofed building; includes a gas or liquid storage tank that is principally above ground.

"Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

"Substantial improvement" means 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:
(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 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:
(i) Any project for improvement of a structure to correct existing violations of 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 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. Variances shall be granted consistent with the standards of the Rules and Regulations of the National Flood Insurance Program. (Ord. 253 § 3 (Exh. C), 2012; Ord. 38 Amd. 2 § 4, 2000)

15.08.050 Application of provisions.
This chapter shall apply to the areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for Crook County, Oregon and Incorporated Areas," dated July 17, 1989, and February 2, 2012, with accompanying Flood Insurance Rate Maps; the engineering report and accompanying maps are hereby adopted by reference and declared to be a part of this chapter. The Flood Insurance Study and Flood Insurance Rate Maps are on file at the Planning Department, Room 11, Crook County Courthouse, Prineville, Oregon. (Ord. 253 § 3 (Exh. C), 2012; Ord. 38 Amd. 2 § 5, 2000)

15.08.060 Establishment of development permit.

(1) Development Permit Required. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in CCC 15.08.050. The permit shall be for all structures including manufactured homes, as set forth in CCC 15.08.040, and for all development including fill and other activities, also as set forth in CCC 15.08.040.

(2) Application for Development Permit. Application for a development permit shall be made on forms furnished by the planning department and may include but not be limited to: 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:

(a) Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures;

(b) Elevation in relation to mean sea level to which any structure has been floodproofed;

(c) Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in CCC 15.08.080; and

(d) Description of the extent to which a watercourse will be altered or relocated as a result of proposed development. (Ord. 38 Amd. 2 § 6, 2000)

15.08.070 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 in conformance with adopted building codes;

(b) 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 in conformance with adopted building codes. 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).

(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 and conform to adopted building codes;

(c) Electrical, heating, ventilation, plumbing fixtures and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated a minimum of one inch above base flood elevation or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(3) Utilities.

(a) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system conforming to adopted plumbing code requirements;

(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; and

(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; and

(d) 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 five acres (whichever is less).

(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 grade in these zones may result in higher insurance rates. (Ord. 38 Amd. 2 § 7, 2000)

15.08.080 Specific standards.

In all areas of special flood hazards where base flood elevation data has been provided as set forth in CCC 15.08.040, the following provisions are required:

(1) Residential Construction.

(a) New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to one foot above base flood elevation.

(b) 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 either be 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 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.

(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 a minimum of one foot above the level of the base flood elevation or, together with attendant utility and sanitary facilities, shall:

(a) Be floodproofed 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.

(c) 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 CCC 15.08.030.

(d) Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest flood as described in this section.

(e) 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 that level).

(3) Manufactured Homes. All manufactured homes to be placed or substantially improved within zones A1-30, AH, and AE shall be elevated on a permanent foundation such that the bottom of the chassis on the manufactured home is at or above the base flood elevation and be securely anchored to an

adequately anchored foundation system in accordance with the provisions of CCC 15.08.070. [Manufactured Dwelling Installation Specialty Code]

(4) Floodways. Located within areas of special flood hazard established in CCC 15.08.050 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

(a) 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.

(b) If subsection (4)(a) of this section is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of CCC 15.08.070 and this section.

(5) Recreational vehicles placed on sites within the flood plain shall meet the placement requirements of subsection (5)(a) or (b) of this section, or the requirements of subsections (5)(c) and (d) of this section.

(a) Be on the site for fewer than 90 consecutive days; or

(b) Be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is 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

(c) Recreational vehicles in a space or on a lot, for more than 90 consecutive days, shall be elevated on compacted fill so that the lowest floor of the recreational vehicle will be a minimum of 18 inches above the base flood elevation; and

(d) Adequate surface drainage and access for a hauler shall be provided. (Ord. 253 § 3 (Exh. C), 2012; Ord. 38 Amd. 2 § 8, 2000)

15.08.090 Below-grade crawlspaces.

(1) The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Hydrostatic loads and the effects of buoyancy can usually be addressed through the required openings stated in subsection (2) of this section. Because of hydrodynamic loads, crawlspace construction is not recommended in areas with flood velocities greater than five feet per second unless the design is reviewed by a qualified design professional, such as a registered architect or professional engineer.

(2) The crawlspace is an enclosed area below the base flood elevation and, as such, must have openings that equalize hydrostatic pressures by allowing the automatic entry and exit of floodwaters. The bottom of each flood vent opening can be no more than one foot above the lowest adjacent exterior grade.

(3) Portions of the building below the BFE must be constructed with materials resistant to flood damage. This includes not only the foundation walls of the crawlspace used to elevate the building, but also any joists, insulation, or other materials that extend below the BFE. The recommended construction practice is to elevate the bottom of joists and all insulation above BFE.

(4) Any building utility systems within the crawlspace must be elevated above BFE or designed so that floodwaters cannot enter or accumulate within the system components during flood conditions. Ductwork, in particular, must either be placed above the BFE or sealed from floodwaters.

(5) The interior grade of a crawlspace below the BFE must not be more than two feet below the lowest adjacent exterior grade.

(6) The height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the bottom of the structural support of the next higher floor, must not exceed four feet at any point.

(7) There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event. The type of drainage system will vary because of the site gradient and other drainage characteristics, such as soil types. Possible options include natural drainage through porous, well-drained soils and drainage systems such as perforated pipes, drainage tiles or gravel or crushed stone drainage by gravity or mechanical means. (Ord. 253 § 3 (Exh. C), 2012)

15.08.100 Before regulatory floodway.

(1) In areas within zones A1-30 and AE on the community's FIRM with a base flood elevation but where no regulatory floodway has been designated, new construction, substantial improvements, or other development (including fill) shall be prohibited, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community. [44 CFR Part 60.3(c)(10) and ORSC R324.1.3.2]

(2) Applicants of proposed projects that increase the base flood elevation more than one foot shall obtain from FEMA a conditional letter of map revision (CLOMR) before the project may be permitted. As soon as possible, but no later than six months after project completion, an application for a letter of map revision (LOMR) shall be submitted by the applicant to FEMA. The applicant is responsible for paying any costs associated with the CLOMR and LOMR process. [44 CFR Parts 60.3(c)(13), 65.3, and 65.12)] (Ord. 253 § 3 (Exh. C), 2012)

15.08.110 Habitat restoration in floodway.

Projects for stream habitat restoration may be allowed without certification by a registered professional civil engineer provided:

(1) A development permit is obtained prior to initiating development activities; and

(2) The project qualifies for a Department of the Army, Portland District Regional General Permit for Stream Habitat Restoration (NWP-2007-1023); and

(3) A qualified professional (a registered professional engineer; or staff of NRCS; the county; or fisheries, natural resources, or water resources agencies) has provided a feasibility analysis and certification that the project was designed to keep any rise in 100-year flood levels as close to zero as practically possible given the goals of the project; and

(4) No structures would be impacted by a potential rise in flood elevation; and

(5) An agreement to monitor the project, correct problems, and ensure that flood carrying capacity remains unchanged is included as part of the local approval. [Oregon Solutions Regulatory Streamlining Project 2009] (Ord. 253 § 3 (Exh. C), 2012)

Chapter 18.84 Flood Plain Combining Zone, FP

Sections:

18.84.005 Regulations designated.

In any zone which is a combined FP zone, the requirements and standards of this chapter shall apply in addition to those herein specified for such zone previously; provided, that if a conflict in regulations or standards occurs, the provisions of this chapter shall govern. (Ord. 18 § 3.170, 2003)

18.84.010 Application of provisions.

The provisions of this chapter shall apply to all areas of special flood hazard within the jurisdiction of the county. The areas of special flood hazard identified by the Federal Insurance Administration and set forth in Flood Hazard Boundary Maps dated August 16, 1977, and the Flood Insurance Rate Maps dated July 17, 1989, and February 2, 2012, are hereby adopted by reference and declared to be a part of this title, and, thereof, the provisions of this

chapter shall apply to all flood hazard areas identified by said maps. (Ord. 253 § 3 (Exh. C), 2012; Ord. 18 § 3.170(1), 2003)

18.84.020 Uses permitted outright.

In a zone with which the FP zone is combined, the following uses are the only uses permitted outright, and these uses are permitted only if such uses are permitted in the zone with which the FP zone is combined and otherwise conform to the regulations for the primary zone.

(1) Agricultural use conducted without locating a structure in the zone except for a boundary fence that is designed to impede as little as possible the movement of flood waters and flood-carried material.

(2) Industrial or commercial use that does not require a structure other than surfacing at ground level such as for a loading area, parking area, or that requires only temporary structures that will not be in the zone during the period of annual flood risk.

(3) Recreational use that requires nonstructural improvements which have an insignificant effect on flood waters such as structures associated with a golf course without related buildings, tennis court, driving range, archery range, picnic grounds, boat launching ramp, swimming area, wildlife or nature preserve, game farm, fish hatchery, shooting preserve, target range, trap or skeet range, hunting or fishing area, or hiking or riding trail.

(4) Portions of a recreation vehicle park or camping area that are occupied only temporarily and that do not contain buildings.

(5) Portions of a residential use that do not contain buildings such as a lawn, garden, parking area or play area. (Ord. 253 § 3 (Exh. C), 2012; Ord. 18 § 3.170(2), 2003)

18.84.030 Conditional uses permitted in the floodway of an FP zone.

In a zone with which the FP zone is combined, the following uses and their accessory uses are permitted within a floodway subject to provisions of this chapter, Chapter 18.160 CCC, and the zone with which the FP zone is combined.

(1) Marina, boat rental or boat sales; provided, if a building or other structure is required in the floodway, it shall be designed and constructed to withstand the waters of a base flood without obstruction of flow or significant damage to the structures or the property of others. The building or structure shall be certified by a registered professional engineer or architect as demonstrating that the encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(2) A roadway, bridge or utility structure that will not impede the waters of a base flood. The roadway, bridge or utility structure shall be certified by a registered professional engineer or architect as demonstrating that the encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(3) Incidental storage of material or equipment that either is not subject to damage by flood, or is mobile and readily removable from the area within the limited time available after flood warning. If not readily removable, the material or equipment shall be anchored to prevent flotation and shall not obstruct water flow. Material or equipment stored shall be only items which will not create a hazard to the health or safety of persons, property, animals or plant life should the storage area be inundated. (Ord. 253 § 3 (Exh. C), 2012; Ord. 18 § 3.170(3), 2003)

18.84.040 Conditional uses permitted in a floodway fringe in an FP zone.

A use permitted in the zone with which the FP zone is combined and that is not permitted by CCC 18.84.020 is permitted within the floodway fringe subject to the provisions of Chapter 18.160 CCC and this chapter. (Ord. 18 § 3.170(4), 2003)

18.84.050 Permit for use or development in an FP zone.

No person shall construct, reconstruct, or install a development, install a mobile home, or divide land in an FP zone unless a permit has been received for the work, except for those uses permitted by CCC 18.84.020. Except for improvement of an existing structure which is less than substantial as determined by the county building official and planning director, or the commission upon appeal, no permit shall be issued unless the work will be reasonably safe from flooding and otherwise comply with this chapter and this title, and other applicable regulations. (Ord. 18 § 3.170(5), 2003)

18.84.060 Classification of property in an FP zone.

Upon receipt of an application for a use or development permitted in the zone with which the FP zone is combined and that is not permitted by CCC 18.84.020, the property shall be classified into portions in the floodway, portions in the floodway fringe, and portions outside the flood plain. Such classification shall be completed by the planning department and such classification is only appealable to the commission. The applicant shall provide information needed to make the classification and determine the severity of the potential flood conditions including but not limited to the following:

(1) The location of the property with reference to channel stations and flood profile elevations.

(2) The existing topography and proposed grading plan for the property. Contour intervals shall not be more than one-foot for ground slopes up to five percent and for areas immediately adjacent to a stream, two-foot for ground slopes between five and 10 percent, and five-foot for greater slopes.

(3) The location of existing and proposed diking or revetments, if any.

(4) In the case of a multifamily residential use or subdivision, profiles of the ground surface perpendicular to and extending in both directions from the stream to an elevation above the probable base flood elevation near the upstream and downstream boundaries within the development, at least one for each 1,000 feet of stream center line, and to a point at least 2,000 feet below the downstream boundary of the development.

(5) In the case of a multifamily residential use or subdivision, engineering data related to the base flood showing the magnitude in cubic feet per second, flood profiles, and the floodway and flood plain boundaries with the development. (Ord. 18 § 3.170(6), 2003)

18.84.070 Structural elevation data required.

(1) An application for a building permit for a new or substantially improved structure or for a mobile home installation permit within an FP combined zone shall contain the following data referenced to mean sea level:

(a) The level of the lowest habitable floor and of any basement floor whether or not intended to be habitable.

(b) The level to which the structure is to be flood proofed, if applicable.

(2) A statement shall accompany the elevation data noting whether or not the structure contains a basement.

(3) The information required by this subsection shall be permanently maintained in the files of the building department with the subject building permit. (Ord. 253 § 3 (Exh. C), 2012; Ord. 18 § 3.170(7), 2003)

18.84.080 Regulation of structures in an FP zone.

(1) If a building or other structure is constructed or substantially improved or a mobile home is installed in a flood area, it shall be:

(a) Designed and adequately anchored to prevent flotation, collapse or lateral movement of the structure.

(b) Constructed with materials and utility equipment resistant to flood damage.

(c) Constructed by methods and practices that minimizes flood damage.

(2) The lowest habitable floor and any basement floor, whether or not the basement is intended to be habitable, of a new or substantially improved residential structure and the floor of a newly installed mobile home shall be elevated at least one foot above the base flood level.

(3) Unless the lowest floor elevation, including a basement floor, is one foot above the base flood elevation, a newly constructed or substantially improved nonresidential structure shall be designed so that the structure is substantially impermeable to the passage of water and otherwise flood proofed, at least to the level two feet above the base flood level. The structural components shall have the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

(4) When flood proofing is utilized for a structure, a registered engineer or licensed architect shall certify that the flood proofing method is adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood and otherwise conforms to the flood proofing standards of the State Structural Specialty Code in effect at the time of construction. (Ord. 253 § 3 (Exh. C), 2012; Ord. 18 § 3.170(8), 2003)

18.84.090 Land development standards in a flood hazard area.

(1) In addition to compliance with CCC 18.84.100 and 18.84.110, a subdivision or other new land development within a flood hazard area shall be designed and constructed to minimize flood damage, including special provisions for adequate drainage to reduce exposure to flood hazards.

(2) A land development, which will alter or relocate a watercourse, shall be designed, constructed and maintained to retain the flood-carrying capacity of the watercourse and shall meet the notification and maintenance requirements found in CCC 15.08.030(4).

(3) A subdivision proposal or other proposed new land development greater than either 50 lots or five acres shall include data showing the base flood elevation. (Ord. 253 § 3 (Exh. C), 2012; Ord. 18 § 3.170(9), 2003)

18.84.100 Additional mobile home land development standards.

(1) A site for a mobile home that is in a flood hazard area shall comply with the following:

(a) The mobile home stand on the site shall be elevated on compacted fill or on pilings so that the bottom of the chassis of the mobile home will be one foot above the base flood elevation level.

(b) Adequate surface drainage shall be provided.

(c) Access for a hauler shall be provided.

(d) If the mobile home stand is elevated on pilings, the stand shall be large enough to permit steps. Piling foundations shall be placed in stable soil. No more than 10 feet apart and lateral reinforcement shall be provided for pilings extending more than six feet above ground level.

(2) Unless the site on which a mobile home is to be installed is above the base flood level, a mobile home or an addition to a mobile home shall be anchored to resist flotation, collapse, and lateral movement as follows:

(a) Over-the-top ties shall be provided at each of the four corners of the mobile home, with two additional ties per side at intermediate locations except that a mobile home that is less than 50 feet long need have only one additional tie per side.

(b) Frame ties shall be provided at each corner of the home with five additional ties per side at intermediate points except that a mobile home less than 50 feet long need have only four additional ties per side.

(c) All components of the anchoring system, including ties, shall be capable of carrying a force of 4,800 pounds.

(3) The placement of a mobile home in the regulatory floodway is prohibited. However, a site existing within a mobile home park may be used; provided, that prior to the effective date of the ordinance codified in this section, the site has had the improvements described in subsection (2) of this section, or prior to the date the regulatory floodway hazard area was designated, the site has had such improvements and has been otherwise approved as complying with the standards of subsection (1) of this section. A mobile home installed on such a site shall be a singlewide unit with wheels and tongue in place. (Ord. 253 § 3 (Exh. C), 2012; Ord. 18 § 3.170(10), 2003)

18.84.110 Facility standards in a flood hazard area.

(1) A public utility or facility associated with a subdivision or other new land development within a flood hazard area shall be designed, located and constructed to minimize or eliminate flood damage and shall be designed to not increase the height of the regulatory floodway.

(2) A new or replacement water supply system shall be designed, located and constructed to minimize or eliminate infiltration of floodwaters into the system.

(3) A new or replacement sanitary sewage system shall be designed, located and constructed to minimize or eliminate infiltration of floodwaters into the system and discharge from the system into the flood waters.

(4) An on-site septic tank system or other individual waste disposal system shall be located to avoid impairment or contamination during flooding. (Ord. 253 § 3 (Exh. C), 2012; Ord. 18 § 3.170(11), 2003)

18.84.120 Land grading standards in a flood hazard area.

(1) When required by the building official, the application for a grading or excavation permit shall be accompanied by two sets of plans or specifications and other supporting data considered necessary to act on the application.

(2) After review of a grading or excavation permit application, the application shall be denied if it is determined that the proposed excavation, filling or other grading will raise the water elevation in the subject floodway. (Ord. 18 § 3.170(12), 2003)

18.84.130 Regulations not a guarantee.

The degree of flood protection afforded by the provisions of this title is considered reasonable for regulatory purposes and is based upon engineering and scientific methods of study. Larger floods than those anticipated by these provisions may occur on occasion or the flood height may be increased by human or natural causes, such as log jams or bridge openings restricted by debris. The identification of areas subject to flooding pursuant to the provisions of this title does not imply that lands outside such areas will be free from flooding or flood damage. This title shall not create liability on the part of the county or any officer or employee thereof for any flood damages that result from reliance on the provisions or designations of this title or any administrative decisions lawfully made thereunder. (Ord. 18 § 3.170(13), 2003)

18.84.140 Technical variances.

A technical variance for hardship relief from the requirements of this chapter may be granted by the commission for new construction and for improvements to existing structures which could not otherwise be authorized, provided the construction or improvements are to be erected or installed on a parcel of land of one-half acre or less in size, contiguous to and more or less surrounded by lots with existing structures constructed below the minimum floor elevation established for flood protection purposes. A parcel of land in excess of the one-half acre that is in one ownership on the effective date of the ordinance codified in this title is not excluded from the granting of a technical variance, but the justification required for issuing the variance increases as the size of the property under one ownership increases and shall be granted only if required to equalize circumstances, considering previously developed land adjacent to the parcel for which a variance could be sought. (Ord. 18 § 3.170(14), 2003)

18.84.150 Historic variance.

A variance for historic preservation may be granted for the reconstruction, rehabilitation or restoration of a structure listed on the National Register of Historic Places or the State Inventory of Historic Places. (Ord. 18 § 3.170(15), 2003)

18.84.160 Hardship variance.

A hardship variance as described in CCC 18.84.140 or as necessary to protect an owner's constitutional right to use property shall be granted upon finding all of the following:

(1) There is a good and sufficient cause due to no fault of the applicant.

(2) Failure to grant the variance would result in exceptional hardship to the applicant.

(3) The variance is the minimum necessary, considering the flood hazard, to afford relief. (Ord. 18 § 3.170(16), 2003)

18.84.170 Evaluation of variance applications.

In reviewing an application for a variance, the commission shall consider technical evaluations, standards specified in other chapters of this title, other relevant factors and each of the following:

(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 on 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, not subject to flooding or erosion damage, for the proposed use.

(7) The relationship of the proposed use to the area flood plain management program.

(8) The safety of access to the property in times of flood for ordinary and emergency vehicles.

(9) The expected height, velocity, duration, rate of rise and sediment transport of the floodwaters and the effect of wave action, if applicable, expected at the site.

(10) The costs of providing governmental and utility services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, streets and bridges. (Ord. 18 § 3.170(17), 2003)

18.84.180 Granting of variances.

(1) If the findings warrant, the commission may grant a variance providing the variance shall not result in increased flood heights, additional threats to public safety or extraordinary public expense.

(2) An applicant to whom a variance is granted shall be given written notice that the structure is permitted, and the file will be permanently available for inspection in the planning department. The notice shall designate the elevation of the lowest floor compared to the base flood elevation and shall advise the applicant that the cost of flood insurance will be commensurate with the increased risk resulting from any reduced floor elevation authorized by the variance. (Ord. 253 § 3 (Exh. C), 2012; Ord. 18 § 3.170(18), 2003)

Chapter 18.85 Flood Damage Prevention

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*Oregon Model Flood Ordinance Regulatory Crosswalk

see Appendix A attached to the ordinance codified in this chapter

18.85.010 Statutory Authorization

The State of Oregon has, in ORS 203.035 delegated the responsibility to local governmental units to adopt floodplain management regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, Crook County does ordain as follows:

18.85.020 Findings of Fact

(1) The flood hazard areas of Crook County are subject to periodic inundation which may result 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.

(2) These flood losses may be caused by the cumulative effect of obstructions in special flood hazard areas which increase flood heights and velocities, and when inadequately anchored, cause damage in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to flood loss.

(3) Crook County has the primary responsibility for planning, adoption and enforcement of land use regulations to accomplish proper management of special flood hazard areas.

18.85.030 Statement of Purpose

It is the purpose of this chapter to promote public health, safety, and general welfare, and to minimize public and private losses due to flooding in flood hazard areas by provisions designed to:

(1) Protect human life and health.

(2) Minimize expenditure of public money for costly flood control projects.

(3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.

(4) Minimize prolonged business interruptions.

(5) Minimize damage to public facilities and utilities such as water and gas mains; electric, telephone and sewer lines; and streets and bridges located in special flood hazard areas.

(6) Help maintain a stable tax base by providing for the sound use and development of flood hazard areas to minimize blight areas caused by flooding.

(7) Notify potential buyers that the property is in a special flood hazard area.

(8) Notify those who occupy special flood hazard areas that they assume responsibility for their actions.

(9) Participate in and maintain eligibility for flood insurance and disaster relief.

(10) Manage the alteration of areas of special flood hazard, stream channels and shorelines to minimize the impact of development on the natural and beneficial functions.

18.85.040 Methods of Reducing Flood Losses

In order to accomplish its purposes, this chapter includes methods and provisions for:

(1) Restricting or prohibiting development which is 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 development 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;

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

(6) Coordinate with and supplement provisions of State of Oregon Specialty Codes enforced by the State of Oregon Building Codes Division.

18.85.050 Definitions

Unless specifically defined below or in this chapter, words or phrases used in this chapter shall be interpreted to give them the meaning they have in common usage and only for the purposes of this chapter.

Accessory Structure: A structure on the same lot or parcel as a principal structure, the use of which is incidental and subordinate to the principal structure.

Appeal: A request for a review of the interpretation of any provision of this chapter or a request for a variance.

Area of shallow flooding: A designated Zone AO, AH, AR/AO or AR/AH on a community's Flood Insurance Rate Map (FIRM) with a one percent or greater annual chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Area of special flood hazard (ASFH): The land in the floodplain within a community subject to a 1 percent or greater chance of flooding in any given year. It is shown on the Flood Insurance Rate Map (FIRM) as Zone A, AO, AH, A1-30, AE, A99, AR. "Special flood hazard area" is synonymous in meaning and definition with the phrase "area of special flood hazard".

Base flood: The flood having a one percent chance of being equaled or exceeded in any given year.

Base flood elevation (BFE): The elevation to which floodwater is anticipated to rise during the base flood.

Basement: Any area of the building having its floor subgrade (below ground level) on all sides.

Below-grade crawl space: An enclosed area below the base flood elevation in which the interior grade is not more than two feet below the lowest adjacent exterior grade and the height, measured from the interior grade of the crawlspace to the top of the crawlspace foundation, does not exceed 4 feet at any point.

Building: See "Structure."

Critical facility: Means a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to schools, nursing homes, hospitals, police, fire and emergency response installations, installations which produce, use, or store hazardous materials or hazardous waste.

Datum: The vertical datum is a base measurement point (or set of points) from which all elevations are determined. Historically, that common set of points has been the National Geodetic Vertical Datum of 1929 (NAVD29). The vertical datum currently adopted by the federal government as a basis for measuring heights is the North American Vertical Datum of 1988 (NAVD88).

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.

Digital FIRM (DFIRM): Digital Flood Insurance Rate Maps, depict flood risk and zones and flood risk information the DFIRM presents the information in a format suitable for electronic mapping applications.

Elevated building: Means, for insurance purposes, a non-basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.

Encroachment: The advancement or infringement of uses, fill, excavation, buildings, permanent structures or other development into a regulatory Floodway which may impede or alter the flow capacity of a floodplain.

Flood or Flooding:

(1) A general and temporary condition of partial or complete inundation of normally dry land areas from:

(a) The overflow of inland or tidal waters.

(b) The unusual and rapid accumulation or runoff of surface waters from any source.

(c) Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (1)(b) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.

(2) The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (1)(a) of this definition.

Flood Elevation Study: See “Flood Insurance Study”.

Flood Insurance Rate Map (FIRM): The official map of a community, on which the Federal Insurance Administrator has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).

Flood Insurance Study (FIS): An examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

Flood proofing: Any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate risk of flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents.

Floodplain or flood prone area: Any land area susceptible to being inundated by water from any source. See "Flood or flooding."

Floodplain administrator: The community official designated by title to administer and enforce the floodplain management regulations.

Floodplain management: The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works, and floodplain management regulations.

Floodplain management regulations: Zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as floodplain ordinance, grading ordinance and erosion control ordinance) and other application of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

Floodway: 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 foot. Also referred to as "Regulatory Floodway."

Freeboard: An additional amount of height above the Base Flood Elevation used as a factor of safety (e.g., 1 foot above the Base Flood) in determining the level at which a structure's lowest floor must be elevated or floodproofed to be in accordance with state or community floodplain management regulations.

Functionally dependent use: A use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, and does not include long term storage or related manufacturing facilities.

Hazardous material: The Oregon Department of Environmental Quality defines hazardous materials to include any of the following:

(a) Hazardous waste as defined in ORS 466.005.

(b) Radioactive waste as defined in ORS 469.300, radioactive material identified by the Energy Facility Siting Council under ORS 469.605 and radioactive substances defined in ORS 453.005

(c) Communicable disease agents as regulated by the Health Division under ORS Chapter 431 and 433.010 to 433.045 and 433.106 to 433.990.

(d) Hazardous substances designated by the United States Environmental Protection Agency (EPA) under section 311 of the Federal Water Pollution Control Act, P.L. 92-500, as amended.

(e) Substances listed by the United States EPA in section 40 of the Code of Federal Regulations, Part 302 – Table 302.4 (list of Hazardous Substances and Reportable Quantities) and amendments.

(f) Material regulated as a Chemical Agent under ORS 465.550.

(g) Material used as a weapon of mass destruction, or biological weapon.

(h) Pesticide residue.

(i) Dry cleaning solvent as defined by ORS 465.200(9).

Highest adjacent grade: The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic structure: Any structure that is:

(1) Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register.

(2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or to a district preliminarily determined by the Secretary to qualify as a registered historic district.

(3) Individually listed on a state inventory of historic places and determined as eligible by states with historic preservation programs which have been approved by the Secretary of the Interior, or;

(4) Individually listed on a local inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either:

(a) By an approved state program as determined by the Secretary of the Interior, or;

(b) Directly by the Secretary of the Interior in states without approved programs.

Letter of Map Change (LOMC): Means an official FEMA determination, by letter, to amend or revise effective Flood Insurance Rate Maps and Flood Insurance Studies.

The following are categories of LOMCs:

(a) Conditional Letter of Map Amendment (CLOMA): A CLOMA is FEMA's comment on a proposed structure or group of structures that would, upon construction, be located on existing natural ground above the base (1-percent-cannual-chane) flood elevation on a portion of a legally defined parcel of land that is partially inundated by the base flood.

(b) Conditional Letter of Map Revision (CLOMR): A CLOMR is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective base flood elevations, or the special flood hazard area.

(c) Conditional Letter of Map Revision based on Fill (CLOMR-F): A CLOMR-F is FEMA's comment on a proposed project that would, upon construction, result in a modification of the special flood hazard area through the placement of fill outside the existing regulatory floodway.

(d) Letter of Map Amendment (LOMA): An official amendment, by letter, to the Flood Insurance Rate Maps (FIRMs) based on technical data showing that an existing structure, parcel of land or portion of a parcel

of land that is naturally high ground, (i.e., has not been elevated by fill) above the base flood, that was inadvertently included in the special flood hazard area.

(e) Letter of Map Revision (LOMR): A LOMR is FEMA's modification to an effective Flood Insurance Rate Map (FIRM), or Flood Boundary and Floodway Map (FBFM), or both. LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective base flood elevations, or the SFHA. The LMOR officially revises the FIRM or FBFM, and sometimes the Flood Insurance Study (FIS) report, and, when appropriate, includes a description of the modifications. The LOMR is generally accompanied by an annotated copy of the affected portions of the FIRM, FBFM, or FIS report.

(f) Letter of Map Revision based on Fill (LOMR-F): A LOMR-F is FEMA's modification of the special flood hazard area shown on the Flood Insurance Rate Map (FIRM) based on the placement of fill outside the existing regulatory floodway.

(g) PMR: A PMR is FEMA's physical revision and republication of an effective Flood Insurance Rate Map (FIRM) or Flood Insurance Study (FIS) report. PMRs are generally based on physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective baes flood elevations, or the special flood hazard area.

Lowest floor: The lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this chapter.

Manufactured dwelling: 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 attached to the required utilities. The term "manufactured dwelling" does not include a "recreational vehicle" and is synonymous with "manufactured home".

Manufactured dwelling park or subdivision: A parcel (or contiguous parcels) of land divided into two or more manufactured dwelling lots for rent or sale.

Mean Sea Level: For purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum of 1988 (NGVD 88) or other datum, to which Base Flood Elevations shown on a community's FIRM are referenced.

New construction: For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by Crook County and includes any subsequent improvements to such structures.

Oregon Specialty Codes: The Building Codes Division of the State adopts, amends, and interprets specialty codes that make up the Oregon State Building Code. The combined specialty codes are often referred to as building codes or "Specialty Codes".

Reconstruction: The repair of a structure damaged by any cause (not just flooding) without increasing the floor area of the structure.

Recreational vehicle: A vehicle which is:

(A) Built on a single chassis.

(B) Four-hundred (400) square feet or less when measured at the largest horizontal projection.

(C) Designed to be self-propelled or permanently towed by a light duty truck, and;

(D) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Regulatory floodway: See “Floodway”.

Rehabilitation: Any improvement and repairs that are made to the interior and exterior of an existing structure that do not result in any increase in the ground floor area of the structure. This is perhaps the most common category and includes activities like remodeling a kitchen, gutting the building and redoing the interior, and adding a second story.

Riverine: Relating to or situated on a river or riverbank. Riverine flood zone means riverine flood hazard zones A, AO, AH, A1-30, AE, A99, or AR.

Sheet flow area: See "Area of shallow flooding".

Special flood hazard area (SFHA): See “Area of special flood hazard” for this definition.

Start of construction: Includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days from the date of the permit. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured dwelling on a foundation. 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 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 part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure: For floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured dwelling.

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

Substantial improvement: Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage," regardless of the actual repair work performed. The term does not, however, include either:

(a) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official, and which are the minimum necessary to assure safe living conditions; or

(b) Any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as a "historic structure."

Variance: A grant of relief approved by Crook County from the terms of a flood plain management regulation.

Violation: The failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this chapter is presumed to be in violation until such time as that documentation is provided.

Watercourse: The channel and banks of an identifiable watercourse, and not the adjoining floodplain areas. The flood carrying capacity of a watercourse refers to the flood carrying capacity of the channel (except in the case of alluvial fans, where a channel is not typically defined).

Water dependent: Means a structure for commerce or industry which cannot exist in any other location and is dependent on the water by reason of intrinsic nature of its operations.

Water surface elevation: The height, in relation to the National Geodetic Vertical Datum of 1988 (NGVD 88), or other datum, of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

18.85.060 General Provisions

(1) Lands to Which This Chapter Applies

This chapter shall apply to all Areas of Special Flood Hazard within the jurisdiction of Crook County. Nothing in this Chapter intended to allow uses or structures that are otherwise prohibited by the zoning code or Specialty Codes.

(2) Basis for Establishing the Special Flood Hazard Areas

The special flood hazard areas identified by the Federal Insurance Administrator in a scientific and engineering report entitled "The Flood Insurance Study (FIS) for Crook County, Oregon and incorporated areas", dated February 2nd, 2012, and as amended, with accompanying Flood Insurance Rate Maps (FIRMs) or Digital Flood Insurance Rate Maps are adopted by reference and declared a part of this chapter. The FIS and the FIRM are on file at the County Planning Department, 300 NE 3rd St., Prineville, Oregon.

(3) Coordination with State of Oregon Specialty Codes

Pursuant to the requirement established in ORS 455, Crook County enforces the State of Oregon Specialty Codes. Crook County does hereby acknowledge that the Oregon Specialty Codes contain certain provisions that apply to the design and construction of buildings and structures located in special flood hazard areas. Therefore, this chapter is intended to be administered and enforced in conjunction with the Oregon Specialty Codes.

(4) Compliance and Penalties for Noncompliance

(a) Compliance: All development within special flood hazard areas is subject to the terms of this chapter and required to comply with its provisions and all other applicable regulations.

(b) Penalties for Noncompliance: 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. Failure to comply with all of the provisions of this chapter and its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a violation and be subject to enforcement as described in CCC 18.85.120. Nothing contained herein shall prevent Crook County from taking such other lawful action as is necessary to prevent or remedy any violation.

(5) Abrogation and Severability

(a) Abrogation: This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another chapter, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(b) Severability: This chapter and the various parts thereof are hereby declared to be severable. If any section clause, sentence, or phrase of the Chapter is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of this Chapter.

(6) Interpretation

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

(a) Considered as minimum requirements;

(b) Liberally construed in favor of the governing body; and

(c) Deemed neither to limit nor repeal any other powers granted under state statutes, including State Specialty Codes.

(7) Warning and Disclaimer of Liability

(a) **Warning:** 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 will be free from flooding or flood damages.

(b) **Disclaimer of Liability:** This chapter shall not create liability on the part of Crook County, any officer or employee thereof, or the Federal Insurance Administrator for any flood damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.

18.85.070 Administration

(1) Designation of Floodplain Administrator

The Community Development Director or designee is hereby appointed to administer, implement, and enforce this chapter by granting or denying development permits in accordance with its provisions. The Floodplain Administrator may delegate authority to implement these provisions.

(2) Duties and Responsibilities of the Floodplain Administrator

Duties of the floodplain administrator, or their designee, shall include, but not be limited to:

(a) **Permit Review**: Review all development permits to determine that:

(i.) The permit requirements of this chapter have been satisfied.

(ii.) All other required local, state, and federal permits have been obtained and approved.

(iii.) Review all development permits to determine if the proposed development is located in a floodway. If located in the floodway assure that the floodway provisions of this chapter in CCC 18.85.110(10) *(Floodways)* are met.

(iv.) Review all development permits to determine if the proposed development is located in an area of special flood hazard, where Base Flood Elevation (BFE) data is available either through the Flood Insurance Study (FIS) or from another authoritative source. If BFE data is not available, then ensure compliance with the provisions of CCC 18.85.100(1)(g) *(Use of Other Base Flood Data)*.

(v.) Provide to building officials the Base Flood Elevation (BFE) and freeboard applicable to any building requiring a development permit.

(vi.) Review all development permit applications to determine if the proposed development qualifies as a substantial improvement as defined in CCC 18.85.050*(Definitions)*.

(vii.) Review all development permits to determine if the proposed development activity is a watercourse alteration. If a watercourse alteration is proposed, ensure compliance with the provisions in CCC 18.85.100(1)(a) *(Alterations of Watercourses)***.**

(viii.) Review all development permits to determine if the proposed development activity includes the placement of fill or excavation.

(ix.) Where a determination is needed of the location of boundaries of the Areas of Special Flood Hazard (including for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Floodplain Administrator shall make a determination. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the determination.

(b) **Information to Be Obtained and Maintained:** The following information shall be obtained and maintained and shall be made available for public inspection as needed:

(i.) Obtain, record, and maintain the actual elevation (in relation to mean sea level) of the lowest floor (including basements) and all attendant utilities of all new or substantially improved structures where Base Flood Elevation (BFE) data is provided through the Flood Insurance Study (FIS), Flood Insurance Rate Map (FIRM), or obtained in accordance with CCC 18.85.100(1)(g) *(Use Of Other Base Flood Data).*

(ii.) Obtain and record the elevation (in relation to mean sea level) of the natural grade of the building site for a structure prior to the start of construction and the placement of any fill

and ensure that the requirements of CCC 18.85.110.(2) (Garages) and CCC 18.85.070(2)(b).

(iii.) Upon placement of the lowest floor of a structure (including basement), but prior to further vertical construction, obtain documentation, prepared and sealed by a professional licensed surveyor or engineer, certifying the elevation (in relation to mean sea level) of the lowest floor (including basement).

(iv.) Where base flood elevation data are utilized, obtain As-built certification of the elevation (in relation to mean sea level) of the lowest floor (including basement) prepared and sealed by a professional licensed surveyor or engineer, prior to the final inspection.

(v.) Maintain all Elevation Certificates (EC) submitted to Crook County.

(vi.) Obtain, record, and maintain the elevation (in relation to mean sea level) to which the structure and all attendant utilities were floodproofed for all new or substantially improved floodproofed structures where allowed under this chapter and where Base Flood Elevation (BFE) data is provided through the FIS, FIRM, or obtained in accordance with CCC 18.85.100(1)(g) (Use of Other Base Flood Data).

(vii.) Maintain all floodproofing certificates required under this chapter.

(viii.) Record and maintain all variance actions, including justification for their issuance.

(ix.) Obtain and maintain all hydrologic and hydraulic analyses performed as required under CCC 18.85.110(10) (Floodways).

(x.) Record and maintain all Substantial Improvement and Substantial Damage calculations and determinations as required under CCC 18.85.070(2)(e) (Substantial Improvement).

(xi.) Maintain for public inspection all records pertaining to the provisions of this chapter.

(c) Requirement to Notify Other Entities and Submit New Technical Data

(a) **Community Boundary Alterations:** The Floodplain Administrator shall notify the Federal Insurance Administrator in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed authority or no longer has authority to adopt and enforce floodplain management regulations for a particular area, to ensure that all Flood Hazard Boundary Maps (FHBM) and Flood Insurance Rate Maps (FIRM) accurately represent the community's boundaries. Include within such notification a copy of a map of the community suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished floodplain management regulatory authority.

(b) **Watercourse Alterations**: The applicant shall notify adjacent communities, the Department of Land Conservation and Development, and other appropriate state and federal agencies, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration. This notification shall be provided by the applicant to the Federal Insurance Administration as a Letter of Map Revision (LOMR) along with either:

(i.) A proposed maintenance plan to assure the existing flood carrying capacity within the altered or relocated portion of the watercourse is maintained; or

(ii.) Certification by a registered professional engineer that the project has been designed to retain its flood carrying capacity without periodic maintenance.

(iii.) The applicant shall be required to submit a Conditional Letter of Map Revision (CLOMR) when required under CCC 18.85.070)(2)(c) *(Requirement to Submit New Technical Data)*. Ensure compliance with all applicable requirements in CCC 18.85.070)(2)(c) *(Requirement to Submit New Technical Data)* and CCC 18.85.100(1)(a) *(Alteration of Watercourses).*

(c) **Requirement to Submit New Technical Data**: A community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, a community shall notify the Federal Insurance Administrator of the changes by submitting technical or scientific data in accordance with Title 44 of the Code of Federal Regulations (CFR), Section 65.3. The community may require the applicant to submit such data and review fees required for compliance with this section through the applicable FEMA Letter of Map Change (LOMC) process.

The Floodplain Administrator shall require a Conditional Letter of Map Revision prior to the issuance of a floodplain development permit for:

(i.) Proposed floodway encroachments that increase the base flood elevation; and

(ii.) Proposed development which increases the base flood elevation by more than one foot in areas where FEMA has provided base flood elevations but no floodway.

An applicant shall notify FEMA within six (6) months of project completion when an applicant has obtained a Conditional Letter of Map Revision (CLOMR) from FEMA. This notification to FEMA shall be provided as a Letter of Map Revision (LOMR).

The applicant shall be responsible for preparing all technical data to support CLOMR/LOMR applications and paying any processing or application fees associated with the CLOMR/LOMR. The Floodplain Administrator shall be under no obligation to sign the Community Acknowledgement Form, which is part of the CLOMR/LOMR application, until the applicant demonstrates that the project will or has met the requirements of this code and all applicable state and federal permits.

(d) **Substantial Improvement and Substantial Damage Assessments and Determinations:**

Conduct Substantial Improvement (SI) (as defined in CCC 18.85.050) reviews for all structural development proposal applications and maintain a record of SI calculations within permit files in accordance with CCC 18.85.070(2)(b *(Information to Be Obtained and Maintained).* Conduct Substantial Damage (SD) [as defined in CCC 18.85.050 (*Definitions*)] assessments when structures are damaged due to a natural hazard event or other causes. Make SD determinations whenever structures within the special flood hazard area [as established in CCC 18.85.060(2) *(Basis for Establishing the Special Flood Hazard Areas)]* are damaged to the extent that the cost of restoring the structure to its before damaged condition would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred.

18.85.080 Establishment of Development Permit

(1) Floodplain Development Permit Required

A development permit shall be obtained before construction, or development begins within any area horizontally within the special flood hazard area established in CCC 18.85.060(2) *(Basis for Establishing the Special Flood Hazard Areas)*. The development permit shall be required for all structures, including manufactured dwellings, and for all other development, as defined in CCC 18.85.050(*Definitions*), including fill and other development activities.

(2) Application for Development Permit

Application for a development permit may be made on forms furnished by the Floodplain Administrator and may include, but not be limited to, plans 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, with labeled locations. Specifically, the following information is required:

(a) Application Stage:

(i.) The site plan shall include any proposed or required fill within Crook County. The reviewing authority may require the floodway to be delineated by a professional surveyor if developing near the floodway boundary on the DFIRM.

(ii.) An Elevation Certificate is required with submittal of any development within the special flood hazard area to ensure proper development of the structure. Certificate shall include proposed elevation (in relation to mean sea level), of the lowest floor (including basement) and all attendant utilities of all new and substantially improved structures; in accordance with the requirements of CCC 18.85.070(2)(b) (Information to Be Obtained and Maintained)

(iii.) Site plan shall include proposed elevation in relation to mean sea level to which any non-residential structure will be floodproofed.

(iv.) Certification by a registered professional engineer or architect licensed in the State of Oregon that the floodproofing methods proposed for any non-residential structure meet the floodproofing criteria for non-residential structures in CCC 18.85.110((5) (Non-Residential Construction)

(v.) Description of the extent to which any watercourse will be altered or relocated.

(vi.) Base Flood Elevation data for subdivision proposals or other development when required per CCC 18.85.070(2)(a) (Permit Review) and 18.85.100(1)(f) (Subdivision Proposals and Other Proposed Developments)

(vii.) Applicant shall provide substantial improvement calculation for any improvement, addition, reconstruction, renovation, or rehabilitation of an existing structure.

(viii.) Site plan shall include the amount and location of any fill or excavation activities proposed.

(b) Construction Stage:

(i.) Copies of all necessary permits from other governmental agencies from which approval is required by Federal or state law must be provided prior to start of construction.

(ii.) Development activities shall not begin without an approved Development Permit.

(iii.) For all new construction and substantial improvements, the permit holder shall provide to the Floodplain Administrator and Building Department official an as-built certification of the floor elevation or flood-proofing level immediately after the lowest floor or flood-proofing is placed and prior to further vertical construction;

(iv.) Any deficiencies identified by the Floodplain Administrator or Building Department official shall be corrected by the permit holder immediately and prior to work proceeding. Failure to submit certification or failure to make the corrections shall be cause for the Floodplain Administrator or Building Department official to issue a stop-work order for the project.

(c) Certificate of Occupancy:

(i.) In addition to the requirements of the Specialty Codes pertaining to certificate of occupancy, and prior to the final inspection, the owner or authorized agent shall submit the following documentation for finished construction that has been signed and sealed by a registered surveyor or engineer. Failure to submit certification or failure to correct violations shall be cause for the Floodplain Administrator or Building Department official to withhold a certificate of occupancy until such deficiencies are corrected.

(ii.) For elevated buildings and structures in non-coastal Areas of Special Flood Hazard (all A zones), a completed Flood Elevation Certificate with the elevation of the lowest floor, including basement, or where no Base Flood Elevation is available, the height above highest adjacent grade of the lowest floor.

(iii.) For non-residential buildings and structures that have been floodproofed, the elevation to which the building or structure was floodproofed.

18.85.090 Variance Procedure

The issuance of a variance is for floodplain management purposes only. Flood insurance premium rates are determined by federal statute according to actuarial risk and will not be modified by the granting of a variance.

(1) 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, in conformance with the provisions of CCC 18.85.090(1)(c) *(Conditions For Variances: Variances shall not be issued within any floodway if any increase in flood levels during the base flood discharge would result)* and 18.85.090(1)(d) , and 18.85.090(2) *(Variance Notification).* As the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases.

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

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

(d) Variances shall only be issued upon:

(i.) A showing of good and sufficient cause;

(ii.) A determination that failure to grant the variance would result in exceptional hardship to the applicant;

(iii.) 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, or conflict with existing laws or ordinances.

(e) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the criteria of CCC 18.85.090(A)(1)(b) through (d) are met, and the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

(2) Variance Notification: Any applicant to whom a variance is granted shall be given written notice that the issuance of a variance to construct a structure below the Base Flood Elevation will result in increased premium rates for flood insurance and that such construction below the base flood elevation increases risks to life and property. Such notification and a record of all variance actions, including justification for their issuance shall be maintained in accordance with CCC 18.85.070(2)(b) *(Information to Be Obtained and Maintained).*

18.85.100 Provisions for Flood Hazard Reduction

(1) General Standards

In all special flood hazard areas, the following standards shall be adhered to:

(a) **Alteration of Watercourses:** Require that the flood carrying capacity within the altered or relocated portion of said watercourse is maintained. Require that maintenance is provided within the altered or relocated portion of said watercourse to ensure that the flood carrying capacity is not diminished. Require compliance with CCC **CCC** 18.85.070(2)(c)(ii) *(Watercourse Alterations)* and CCC 18.85.070(2)(d) *(Requirement to Submit New Technical Data)***.**

(b) **Anchoring**

(i.) All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

(ii.) All manufactured dwellings shall be anchored per CCC 18.85.110(6) *(Manufactured Dwellings)*.

(c) **Construction Materials and Methods**

(iii.) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

(iv.) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

(d) **Utilities and Equipment**

(i.) Water Supply, Sanitary Sewer, And On-Site Waste Disposal Systems

(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 consistent with the Oregon Department of Environmental Quality.

(ii.) Electrical, Mechanical, Plumbing, And Other Equipment: Electrical, heating, ventilating, air-conditioning, plumbing, duct systems, and other equipment and service facilities shall be elevated at or above the base flood level or shall be designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during conditions of flooding. In addition, electrical, heating, ventilating, air-conditioning, plumbing, duct systems, and other equipment and service facilities shall, if replaced as part of a substantial improvement, meet all the requirements of this CCC.

(e) **Tanks**

(i.) Underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood.

(ii.) Above-ground tanks shall be installed at or above the base flood level or shall be anchored to prevent flotation, collapse, and lateral movement under conditions of the base flood. New and replacement tank inlets, fill openings, outlets and vents shall be placed a minimum of two (2) feet above Base Flood Elevation or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tank during conditions of the design flood.

(f) **Subdivision Proposals and Other Proposed Developments:** All plans and permits for proposed new site improvements, subdivisions, and manufactured home parks shall be consistent with the need to minimize flood damage and ensure that building sites will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes historical data, high water

marks, photographs of past flooding, and any other information deemed relevant by the Floodplain Administrator.

(i.) All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) greater than fifty (50) lots or five (5) acres, whichever is the lesser, shall include within such proposals, Base Flood Elevation data.

(ii.) All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) shall:

(A) Be consistent with the need to minimize flood damage.

(B) Have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage.

(C) Have adequate drainage provided to reduce exposure to flood hazards.

(g) **Use of Other Base Flood Elevation Data:**

(i.) When Areas of Special Flood Hazard Have Been Provided but Base Flood Elevation or floodway data has not been provided in accordance with CCC 18.85.060(2) *(Basis for Establishing the Special Flood Hazard Areas)* the Floodplain Administrator shall obtain, review, and reasonably utilize any Base Flood Elevation data available from a federal, state, or other source, in order to administer CCC 18.85.100(1)(*(General Standards)* and 18.85.110*(Specific Standards (Including all Non-Coastal) SFHAs).* All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) must meet the requirements of CCC 18.85.100(1)(f) *(Subdivision Proposals and Other Proposed Developments).*

(ii.) Base Flood Elevations shall be determined for development proposals that are five (5) acres or more in size or are fifty (50) lots or more, whichever is lesser in any A zone that does not have an established base flood elevation. Development proposals located within an unnumbered A Zone shall be reasonably safe from flooding; the test of reasonableness includes use of historical data, high water marks, FEMA provided Base Level Engineering data, and photographs of past flooding, where available. When no base flood elevation data is available, the elevation requirement for development proposals within an unnumbered A zone is a minimum of three (3) feet above the highest adjacent grade, to be reasonably safe from flooding.

(h) **Structures Located in Multiple or Partial Flood Zones**: In coordination with the State of Oregon Specialty Codes:

(i.) When a structure is located in multiple flood zones on the community's Flood Insurance Rate Maps (FIRM) the provisions for the more restrictive flood zone shall apply.

(ii.) When a structure is partially located in a special flood hazard area, the entire structure shall meet the requirements for new construction and substantial improvements.

(i) **Critical Facilities**

(i.) Construction of new critical facilities shall be, to the extent possible, located outside the limits of the special flood hazard area ("SFHA"). Construction of new critical facilities shall be permissible within the SFHA only if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three (3) feet above the Base Flood Elevation ("BFE") or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility shall also be protected to the height utilized above. Flood proofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters.

18.85.110 Specific Standards for RIVERINE (SFHA)

These specific standards shall apply to all new construction and substantial improvements in addition to the General Standards contained in CCC 18.85.100(1) *(General Standards)* of this chapter.

(1) Flood Openings

All new construction and substantial improvements with fully enclosed areas below the lowest floor (excluding basements) are subject to the following requirements. Enclosed areas below the Base Flood Elevation, including crawl spaces shall:

(a) Be designed to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters;

(b) Be used solely for parking, storage, or building access;

(c) Be certified by a registered professional engineer or architect or meet or exceed all of the following minimum criteria:

(i.) A minimum of two openings.

(ii.) The total net area of non-engineered openings shall be not less than one (1) square inch for each square foot of enclosed area, where the enclosed area is measured on the exterior of the enclosure walls.

(iii.) The bottom of all openings shall be no higher than one foot above grade.

(i.) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they shall allow the automatic flow of floodwater into and out of the enclosed areas and shall be accounted for in the determination of the net open area.

(i.) All additional higher standards for flood openings in the State of Oregon Residential Specialty Codes Section R322.2.2 shall be complied with when applicable.

(2) Garages

(a) Attached garages may be constructed with the garage floor slab below the Base Flood Elevation (BFE) in Special Flood Hazard Areas, if the following requirements are met:

(i.) If located within a floodway the proposed garage must comply with the requirements of CCC 18.85.110(10) (Floodways).

(ii.) The floors are at or above grade on not less than one side;

(iii.) The garage is used solely for parking, building access, and/or storage;

(iv.) The garage is constructed with flood openings in compliance with CCC *18.85.110(1)* (Flood Openings) to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater.

(v.) The portions of the garage constructed below the BFE are constructed with materials resistant to flood damage;

(vi.) The garage is constructed in compliance with the standards in CCC 18.85.100(1) (General Standards); and

(vii.) The garage is constructed with electrical, and other service facilities located and installed so as to prevent water from entering or accumulating within the components during conditions of the base flood.

(b) Detached garages must be constructed in compliance with the standards for appurtenant structures in CCC 18.85.110(8) *(Appurtenant [Accessory] Structures)* or non-residential structures in CCC 18.85.110(5) *(Non- Residential Construction)* depending on the square footage of the garage.

(3) No Regulatory Floodway: In areas where a regulatory floodway has not been designated, no new construction, substantial improvement, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's Flood Insurance Rate Map (FIRM), unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

(4) Residential Construction

(a) New construction, conversion to, and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated at one (1) foot or more above the Base Flood Elevation (BFE), and elevated three (3) feet or more above highest adjacent grade where no BFE is defined.

(b) 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. Enclosed areas below the lowest floor shall comply with the flood opening requirements in CCC *18.85.110(1) (Flood Openings).*

(5) Non- Residential Construction

(a) New construction, conversion to, and substantial improvement of any commercial, industrial, or other non-residential structure shall:

(i) Have the lowest floor, including basement elevated to one (1) foot or more above the Base Flood Elevation (BFE), and elevated three (3) feet or more above highest adjacent grade where no BFE is defined; Or, together with attendant utility and sanitary facilities:

(A) Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water; and

(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 design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this section based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the Floodplain Administrator as set forth CCC 18.85.070(2)(b) (*Information to Be Obtained and Maintained).*

(b) Non-residential structures that are elevated, not floodproofed, shall comply with the standards for enclosed areas below the lowest floor in CCC 18.85.110(1) (Flood Openings).

(c) Applicants floodproofing non-residential buildings shall be notified that flood insurance premiums will be based on rates that are one (1) foot below the floodproofed level (e.g. a building floodproofed to the base flood level will be rated as one (1) foot below.

(6) Manufactured Dwellings

(a) Manufactured dwellings to be placed (new or replacement) or substantially improved that are supported on solid foundation walls shall be constructed with flood openings that comply with CCC 18.85.110(1) *(Flood Openings).*

(b) The bottom of the longitudinal chassis frame beam shall be at or above Base Flood Elevation.

(c) Manufactured dwellings to be placed (new or replacement) or substantially improved shall be anchored to prevent flotation, collapse, and lateral movement during the base flood. 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), and;

(d) Electrical crossover connections shall be a minimum of one foot above Base Flood Elevation (BFE).

(7) Recreational Vehicles: Recreational vehicles placed on sites are required to:

(a) Be on the site for fewer than 180 consecutive days, and

(b) 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

(c) Meet the requirements of CCC 18.85.110(6) (Manufactured Dwellings), including the anchoring and elevation requirements for manufactured dwellings.

(8) Appurtenant (Accessory) Structures: Relief from elevation or floodproofing requirements for residential and non-residential structures in SFHAs may be granted for appurtenant structures that meet the following requirements:

(a) Appurtenant structures located partially or entirely within the floodway must comply with requirements for development within a floodway found in CCC 18.85.110(10) (Floodways).

(b) Appurtenant structures must only be used for parking, access, and/or storage and shall not be used for human habitation.

(c) Appurtenant structures are limited to one-story structures less than 600 square feet.

(d) The portions of the appurtenant structure located below the Base Flood Elevation must be built using flood resistant materials.

(e) The appurtenant structure must be adequately anchored to prevent flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood.

(f) The appurtenant structure must be designed and constructed to equalize hydrostatic flood forces on exterior walls and comply with the requirements for flood openings in CCC 18.85.110(1) (Flood Openings).

(g) Appurtenant structures shall be located and constructed to have low damage potential.

(h) Appurtenant structures shall not be used to store toxic material, oil, or gasoline, or any priority persistent pollutant identified by the Oregon Department of Environmental Quality unless confined in a tank installed incompliance with CCC 18.85.100(e) (Tanks).

(i) Appurtenant structures shall be constructed with electrical, mechanical, and other service facilities located and installed so as to prevent water from entering or accumulating within the components during conditions of the base flood.

(9) Below-Grade Crawl Spaces

(a) The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Hydrostatic loads and the effects of buoyancy can usually be addressed through the required flood openings stated in 18.85.110(1) (Flood Openings). Because of hydrodynamic loads, crawlspace construction is not allowed in areas with flood velocities greater than five (5) feet per second unless the design is reviewed by a qualified design professional, such as a registered architect or professional engineer. Other types of foundations are recommended for these areas.

(b) The crawlspace is an enclosed area below the Base Flood Elevation (BFE) and, as such, must have openings that equalize hydrostatic pressures by allowing the automatic entry and exit of

floodwaters. The bottom of each flood vent opening can be no more than one (1) foot above the lowest adjacent exterior grade.

(c) Portions of the building below the BFE must be constructed with materials resistant to flood damage. This includes not only the foundation walls of the crawlspace used to elevate the building, but also any joists, insulation, or other materials that extend below the BFE. The recommended construction practice is to elevate the bottom of joists and all insulation above BFE.

(d) Any building utility systems within the crawlspace must be elevated above BFE or designed so that floodwaters cannot enter or accumulate within the system components during flood conditions. Ductwork must either be placed above the BFE or sealed from floodwaters.

(e) The interior grade of a crawlspace below the BFE must not be more than two (2) feet below the lowest adjacent exterior grade.

(f) The height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall must not exceed four (4) feet at any point. The height limitation is the maximum allowable unsupported wall height according to the engineering analyses and building code requirements for flood hazard areas.

(g) There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event. The type of drainage system will vary because of the site gradient and other drainage characteristics, such as soil types. Possible options include natural drainage through porous, well-drained soils and drainage systems such as perforated pipes, drainage tiles or gravel or crushed stone drainage by gravity or mechanical means.

(h) The velocity of floodwaters at the site shall not exceed five (5) feet per second for any crawlspace. For velocities in excess of five (5) feet per second, other foundation types should be used.

(10) Floodways: Located within the special flood hazard areas established in CCC 18.85.060)(2) (*Basis for Establishing the Special Flood Hazard Areas*) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of the floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

(a) Prohibit encroachments, including fill, new construction, substantial improvements, fences, and other development within the adopted regulatory floodway unless:

(i.) Certification by a registered professional civil engineer is provided, demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment, water course alteration, or habitat restoration project shall not result in any increase in flood levels within the community during the occurrence of the base flood discharge; or

(ii.) Crook County may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that a Conditional Letter of Map Revision (CLOMR) is applied for and approved by the Federal Insurance Administrator, and the requirements for such revision as established under Volume 44 of the Code of Federal Regulations, section 65.12 are fulfilled.

(b) If the requirements of CCC 18.85.110(10)(a) *(Floodways: Encroachments Prohibited in Floodways)* are satisfied, all new construction, substantial improvements, and other development shall comply with all other applicable flood hazard reduction provisions of CCC 18.85.100(1) and CCC 18.85.110 *(Provisions* **f***or Flood Hazard Reduction).*

(11) Standards for Shallow Flooding Areas: Shallow flooding areas appear on FIRMs as AO zones with depth designations or as AH zones with Base Flood Elevations. For AO zones the base flood depths range from one (1) to three (3) feet above ground where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. For both AO and AH zones, adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures.

(a) **Standards for AH Zones:** Development within AH Zones must comply with the standards in CCC 18.85.100(1) *(General Standards)*, CCC 18.85.110 *(Specific SFHA Standards)*, and CCC 18.85.110(11) *(Standards for Shallow Flooding Areas)***.**

(b) **Standards for AO Zones:** In AO zones, the following provisions apply in addition to the requirements in CCC 18.85.100(1) *(General Standards)* and CCC 18.85.110(11) *(Standards for Shallow Flooding Areas*):

(i.) New construction, conversion to, and substantial improvement of residential structures and manufactured dwellings within AO zones shall have the lowest floor, including basement, elevated above the highest grade adjacent to the building, at minimum one (1) foot above the depth number specified on the Flood Insurance Rate Maps (FIRM) (at least three (3) feet if no depth number is specified). For manufactured dwellings the lowest floor is considered to be the bottom of the longitudinal chassis frame beam.

(ii.) New construction, conversion to, and substantial improvements of non-residential structures within AO zones shall either:

(A) Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, at minimum one (1) foot above the depth number specified on the Flood Insurance Rate Maps (FIRMS) (at least three (3) feet if no depth number is specified); or

(B) Together with attendant utility and sanitary facilities, be completely floodproofed to or above the depth number specified on the FIRM or a minimum of three (3) feet above the highest adjacent grade if no depth number is specified, so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of

buoyancy. If this method is used, compliance shall be certified by a registered professional engineer or architect as stated in CCC 18.85.110(5)(a)(i)(C).

(c) Recreational vehicles placed on sites within AO Zones on the community's Flood Insurance Rate Maps (FIRM) shall 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 elevation requirements of CCC 18.85.110(11)(b), and the anchoring and other requirements for manufactured dwellings of CCC 18.85.110(6)

(d) In AO zones, new and substantially improved appurtenant structures must comply with the standards in CCC 18.85.110(11)(b).

(e) In AO zones, enclosed areas beneath elevated structures shall comply with the requirements in CCC 18.85.110(1) (*Flood Openings*).

18.85.120 Enforcement

(1) In addition to any other remedy available by law, the county may establish a violation of this chapter or of any condition imposed on a permit issued under this chapter. Penalties for violations shall follow CCC 1.12 (Enforcement).

Appendix A – Oregon Model Flood Ordinance Regulatory Crosswalk

Section	Code of Federal Regulations (CFR) and Technical Bulletin Citation(s)	State of Oregon Citation(s) (Goal 7, Specialty Codes*, ORS)
18.85.010 Statutory Authorization	59.22(a)(2)	Goal 7; ORS 197.175
18.85.020 Findings of Fact	59.22(a)(1)	Goal 7
18.85.030 Statement of Purpose	59.2; 59.22(a)(1) and (8); 60.22	Goal 7
18.85.040 Methods of Reducing Flood Losses	60.22	Goal 7
18.85.050 Definitions	59.1	Goal 7
18.85.060(1) Lands to Which this Ordinance Applies	59.22(a)	Goal 7
18.85.060(2) Basis for Establishing the Special Flood Hazard Areas	59.22(a)(6); 60.2(h)	Goal 7
18.85.060(3) Coordination with Specialty Codes Adopted by the State of Oregon Building Codes Division		ORS 455
18.85.060(4) Compliance	60.1(b) – (d)	Goal 7
18.85.060(4) Penalties for Noncompliance	60.1(b) – (d)	Goal 7
18.85.060(5) Abrogation	60.1(b) – (d)	Goal 7
18.85.060(5) Severability		
18.85.060(6) Interpretation	60.1(b) – (d)	Goal 7
18.85.060(7) Warning		
18.85.060(7) Disclaimer of Liability		
18.85.070(1) Designation of the Floodplain Administrator	59.22(b)(1)	Goal 7
18.85.070(2)(a) Permit Review	60.3(a)(1) – (3); 60.3(c)(10)	Goal 7
18.85.070(2)(b) Information to be Obtained and Maintained	59.22(a)(9)(iii); 60.3(b)(5)(i) and (iii);	Goal 7; 105.9; 110.33; R106.1.4; R109.1.3;

	60.3(c)(4); 60.3(b)(3); 60.6(a)(6)	R109.1.6.1; R322.1.10; R322.3.6
18.85.070(2)(c)(i) Community Boundary Alterations	59.22(a)(9)(v)	Goal 7
18.85.070(2)(c)(ii) Watercourse Alterations	60.3(b)(6) – (7), 65.6(12 -13)	Goal 7
18.85.070(2)(d) Requirement to Submit New Technical Data	65.3, 65.6, 65.7, 65.12	Goal 7
18.85.070(2)(e) Substantial Improvement and Substantial Damage Assessments and Determinations	59.1;60.3(a)(3); 60.3(b)(2); 60.3(b)(5)(i); 60.3(c)(1),(2),(3),(5) – (8),(10), (12); 60.3(d)(3); 60.3(e)(4),(5),(8)	Goal 7
18.85.080(1) Floodplain Development Permit Required	60.3(a)(1)	Goal 7
18.85.080(2) Application for Development Permit	60.3(a)(1); 60.3(b)(3); 60.3(c)(4)	Goal 7; R106.1.4; R322.3.6, R109.1.3
18.85.090 Variance Procedure	60.6(a)	Goal 7
18.85.090(1) Conditions for Variances	60.6(a)	Goal 7
18.85.090(2) Variance Notification	60.6(a)(5)	Goal 7
18.85.100(1)(a) Alteration of Watercourses	60.3(b)(6) and (7)	Goal 7
18.85.100(1)(b) Anchoring	60.3(a)(3); 60.3(b)(1),(2), and (8)	Goal 7; R322.1.2
18.85.100(1)(c) Construction Materials and Methods	60.3(a)(3), TB 2; TB 11	Goal 7; R322.1.3; R322.1.3
18.85.100(1)(d)(i) Water Supply, Sanitary Sewer, and On-Site Waste Disposal Systems	60.3(a)(5) and (6)	Goal 7; R322.1.7
18.85.100(1)(d)(ii) Electrical, Mechanical, Plumbing, and Other Equipment	60.3(a)(3)	Goal 7; R322.1.6;
18.85.100(1)(e) Tanks		R322.2.4; R322.3.7

18.85.100(1)(f) Subdivision Proposals	60.3(a)(4)(i) – (iii); 60.3(b)(3)	Goal 7
18.85.100(1)(g) Use of Other Base Flood Data	60.3(a)(3); 60.3(b)(4); 60.3(b)(3); TB 10-01	Goal 7; R322.3.2
18.85.100(1)(h) Structures Located in Multiple or Partial Flood Zones		R322.1
18.85.110(1) Flood Openings	60.3(c)(5); TB 1; TB 11	Goal 7; R322.2.2; R322.2.2.1
18.85.110(2) Garages	TB 7-93	R309
18.85.110(3) Before Regulatory Floodway	60.3(c)(10)	Goal 7
18.85.110(4) Residential Construction	60.3(c)(2)	Goal 7
18.85.110(5) Non-residential Construction	60.3(c)(3) – (5); TB 3	Goal 7; R322.2.2; R322.2.2.1
18.85.110(6) Manufactured Dwellings	60.3(b)(8); 60.3(c)(6)(iv); 60.3(c)(12)(ii)	Goal 7; State of OR Manufactured Dwelling Installation Specialty Code (MDISC) and associated statewide Code Interpretation dated 1/1/2011
18.85.110(7) Recreational Vehicles	60.3(c)(14)(i) – (iii)	Goal 7
18.85.110(8) Appurtenant (Accessory) Structures	60.3(c)(5); TB 1; TB 7-93	S105.2; R105.2
18.85.110(10) Floodways	60.3(d); FEMA Region X Fish Enhancement Memo (Mark Riebau)	Goal 7
18.85.110(11) Standards for Shallow Flooding Areas	60.3(c)(7),(8),(11), and (14)	Goal 7

**Link to Oregon Specialty Codes*