

Chapter 83

Floodplain Management Overlay (/FP)

83.005 Purpose. The Floodplain Management Overlay Zone shall implement the provisions of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973, as well as the Benton County Comprehensive Plan.

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

- (1) Protect human life, health, and property;
- (2) Minimize expenditure of public money and costly flood control projects;
- (3) Minimize the need for rescue, emergency services, and relief associated with flooding and generally undertaken at the expense of the general public;
- (4) Minimize prolonged business interruptions and unnecessary disruption of commerce, access and public service during times of flood;
- (5) Minimize damage to public facilities and utilities such as water purification and sewage treatment plants; water and gas mains; electric, telephone, and sewer lines; streets; and bridges located in special flood hazard areas;
- (6) Decrease the cost of flood insurance;
- (7) Help maintain a stable tax base by providing for the sound use and development of special flood hazard areas;
- (8) Ensure that potential buyers are notified that property is in an area of special flood hazard;
- (9) Ensure that those who occupy the special flood hazard areas assume responsibility for their actions;
- (10) Recognize and preserve the natural flood mitigation functions of floodplains; and
- (11) Preserve the ecosystem functions of floodplains.

[Ord 26, Ord 90-0069, Ord 2009-0233 eff. 6/2/2011]

83.010 Application.

(1) The Floodplain Management Overlay Zone shall apply to all areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in its "Flood Insurance Study for Benton County, Oregon and Incorporated Areas," dated June 2, 1011, with accompanying Flood Insurance Rate Maps (FIRM) and Digital Flood Insurance Rate Maps (DFIRM), except as otherwise provided by this code, adopted effective June 2, 2011. The Flood Insurance Study and accompanying maps are hereby incorporated by reference into the Development Code and are on file at the Benton County Community Development Department, 360 SW Avery Avenue, Corvallis, Oregon.

(2) The Floodplain Management Overlay Zone is divided into two subzones: the floodway and the floodway fringe. The boundaries of the floodway and the floodway fringe shall be those delineated on the Flood Insurance Rate Maps except as otherwise provided by BCC 83.010(3).

(3) **Corvallis Urban Fringe.** Floodplain and floodway boundaries within the Corvallis Urban Fringe (the unincorporated portion of the Corvallis Urban Growth Boundary) shall be determined pursuant to the following subsections. Furthermore, within the Corvallis Urban Fringe, restrictions and use limitations in addition to those outlined in BCC 83.015 through 83.300 and BCC 83.405 are outlined in the provisions of BCC 83.310 and 83.505 below. In the case of any conflicts between the additional provisions in BCC 83.310 and 83.505 and the standard provisions of BCC 83.015 through 83.300 and BCC 83.405, the more restrictive shall apply.

- (a) **Floodway.**

- (A) **General Determination.** The floodway within the unincorporated portion of the Corvallis Urban Fringe shall be based upon a 0.2-foot rise standard for an increase in the base flood elevation rather than a one foot rise standard utilized by FEMA. The floodway boundary of streams within the unincorporated portion of the Corvallis Urban Growth Boundary shall be based upon maps prepared by the City of Corvallis which apply the 0.2-foot rise standard.
 - (B) **Map Refinements.** For precise determinations when development activities are proposed near a mapped floodway, the applicant shall submit information prepared by an Oregon-registered Professional Land Surveyor or Oregon-licensed Civil Engineer, demonstrating the area that must be kept free from encroachments in order to discharge the base flood (100-year flood) without cumulatively increasing the water surface elevation more than 0.2 feet and demonstrating that the proposed activities will not impact the floodway.
- (b) **Floodplain (Floodway Fringe).**
- (A) **General Determination.** The floodplain boundaries shall be determined pursuant to BCC 83.010(1).
 - (B) **Map Refinement.** For the purposes of BCC 83.505(1) and 83.605, floodplain location and extent may be determined using FEMA-provided base flood elevation data combined with topographic mapping (2-foot or less contour interval) produced from a survey by an Oregon-registered Professional Land Surveyor or Oregon-licensed Civil Engineer. Alternatively, the official topographic mapping maintained by the City of Corvallis or Benton County and prepared at a 2-foot (or less) contour interval may be used. However, for purposes of siting structures, floodplain location shall be determined through an elevation survey performed by an Oregon-registered Professional Land Surveyor or Oregon-licensed Civil Engineer.
 - (C) **Map Correction.** Map corrections to the floodplain location shall be approved by the Planning Official to reflect a Letter of Map Amendment (LOMA) approved by the Federal Emergency Management Agency (FEMA).

[Ord 26, Ord 90-0069, Ord 92-0092, Ord 2005-0209, Ord 2009-0233 eff. 6/2/2011]

83.015 Definitions. For the purposes of this chapter, the following definitions apply:

- (1) “1% Chance Floodplain” has the same meaning as “Special Flood Hazard Area.” It means the land in the floodplain within a community subject to a one percent (1%) or greater chance of flooding in any given year. The 1% Chance Floodplain is also referred to as the “100-Year Floodplain.”
- (2) “100-Year Floodplain” has the same meaning as “Special Flood Hazard Area”. Note: Because the term “100-year floodplain” implies that a flood occurs only once every one hundred years, rather than the true meaning of the term. The Federal Emergency Management Agency (FEMA) discourages the use of this term.
- (3) “Agricultural Structure” means a nonresidential structure customarily provided in conjunction with farm use for which all improvements contained within and attached to said structures are otherwise exempt from building code requirements in accordance with the Oregon State Specialty Code.
- (5) “Base Flood” – see definition listed in BCC 51.020.
- (6) “Base Flood Elevation (BFE)” – see definition listed in BCC 51.020.
- (7) “Basement” means any area of a building having its floor subgrade (below ground level) on all sides.
- (8) “Below-Grade Crawlspace” means an enclosed area below the base flood elevation and with an interior grade below the lowest adjacent exterior grade of the structure in which:
 - (a) The interior grade is not more than two feet below the lowest adjacent exterior grade; and

- (b) The height, measured from the interior grade of the crawlspace to the top of the crawlspace foundation, does not exceed four (4) feet at any point.
- (9) “Critical Facility” means a facility which, if impacted by flooding, could have significant negative impact on the greater community. Consequently, even a slight chance of such a facility flooding carries a high risk to the community. Critical facilities include, but are not limited to schools; nursing homes; hospitals; police, fire, and emergency response installations; and installations which produce, use, or store hazardous substance as defined in ORS 453.005 or hazardous waste as defined by the Oregon Department of Environmental Quality.
- (10) “Development” means any man-made change to improved or unimproved real estate, including but not limited to buildings, fences, or other structures; mining, dredging, filling, grading, paving, excavation or drilling operations; or storage of equipment or materials located within the special flood hazard area.
- (11) “Elevated Building” means a non-basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.
- (12) “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 water; and/or
 - (b) The unusual and rapid accumulation of runoff of surface waters from any source.
- (13) “Flood Hazard” see definition listed in BCC 51.020.
- (14) “Flood Insurance Rate Map (FIRM)” means the official map, issued by the Federal Insurance Administration, delineating the areas of special flood hazard and/or the risk premium zones applicable to the community.
- (15) “Flood Insurance Study” means the official report provided by the Federal Insurance Administration evaluating flood hazards and containing flood profiles, regulatory Floodway boundaries, and water surface elevations of the base flood.
- (16) “Floodplain” see definition listed in BCC 51.020.
- (17) “Flood Proofing” see definition listed in BCC 51.020.
- (18) “Floodway” see definition listed in BCC 51.020.
- (19) “Floodway Fringe” see definition listed in BCC 51.020.
- (20) “Flow-Through Design” means a structure that does not hinder or obstruct the movement of or displace surface floodwater. The typical underfloor venting required by BCC 83.220 does not constitute “flow-through design”.
- (21) “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 structure’s lowest floor, provided that the enclosed area is built and maintained in accordance with the applicable design requirements of this chapter, as specified in BCC 83.220.
- (22) “New Construction” means structures for which the “start of construction” commenced on or after July 31, 1987 (the effective date of this chapter).
- (23) “Nonresidential structure” means any structure other than:
- (a) A dwelling; or
 - (b) A structure accessory to a dwelling.
- (24) “Recreational Vehicle” means a vehicle which is:
- (a) Built on a single chassis;

- (b) 400 square feet or less when measured at the largest horizontal projection;
- (c) Designed to be self-propelled or permanently towable 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.

(25) “Shallow Flooding Area” 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.

(26) “Special Flood Hazard Area (SFHA)” means the land in the floodplain within a community subject to a one percent (1%) or greater chance of flooding in any given year. This area includes both the floodway fringe and the floodway and is commonly referred to as the “100-year floodplain”. Designation of this area on Flood Insurance Rate Maps always includes the letter A.

(27) “Start of Construction” includes substantial improvement, 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 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 home 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. 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 a building.

(28) “Structure” means a building with a roof and two (2) or more rigid exterior walls, manufactured dwelling, or a gas or liquid storage tank that is principally above ground.

(29) “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 fifty percent (50%) of the market value of the structure before the damage occurred.

(30) “Substantial Improvement” means any combination of repairs, reconstruction, rehabilitation, addition, or other improvements of a structure, the cost of which equals or exceeds fifty percent (50%) of its current market value 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.

In determining “substantial improvement,” the Planning Official may refer to the most recent version of the FEMA Desk Reference for Local Officials (FEMA-480).

“Substantial improvement” 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 structure listed on the National Register of Historic Places or the County Register of Historic Resources, provided that the alteration will not preclude the structure’s continued designation as an Historic Structure.

(31) “Variance” means a grant of relief from the requirements of this ordinance which permits construction in a manner that would otherwise be prohibited by this ordinance.

[Ord 26, Ord 90-0069, Ord 2000-0157, Ord 2005-0209, Ord 2009-0233 eff. 6/2/2011]

83.100 Information to be Obtained and Maintained. The Planning Official shall perform the following duties relating to obtaining and maintaining flood-related information:

(1) **Elevated Structures.** Where base flood elevation data are provided through the Flood Insurance Study, Flood Insurance Rate Maps, or required as in BCC 83.300(2), obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basements and below-grade crawlspaces) of all new or substantially improved structures, and whether or not the structure contains a basement.

(2) **Floodproofed Structures.** For all new or substantially improved floodproofed structures where base flood elevation data are provided through the Flood Insurance Study, Flood Insurance Rate Maps, or as required in BCC 83.300(2):

- (a) Verify and record the actual elevation (in relation to mean sea level), and
- (b) Maintain the floodproofing certifications required in BCC 83.405.

(3) Maintain for public inspection all records pertaining to the provisions of this chapter. [Ord 2009-0233 eff. 6/2/2011]

83.105 Interpretation of Floodplain Boundaries; Use of Other Data.

(1) If it is uncertain whether any proposed development described in BCC 83.110(1) is located in the floodplain (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), it shall be clearly demonstrated to the satisfaction of the County Engineer that the site in question is not subject to flood hazard.

(2) Where base flood elevation data have not been provided by FEMA, the applicant shall be responsible for providing to the County Engineer sufficient information either to determine the base flood elevation and floodway, if applicable, or to demonstrate the elevation of the development site will render it above the floodplain through comparison with nearby locations mapped as outside the floodplain.

(3) Any person contesting the location of the floodplain boundary shall be given a reasonable opportunity to appeal the interpretation by submission of a Letter of Map Amendment for the site in question approved by the Federal Emergency Management Agency.

[Ord 26, Ord 90-0069, Ord 2009-0233 eff. 6/2/2011]

83.110 Floodplain Development Permit Required.

(1) A floodplain development permit shall be obtained prior to construction of a new structure, substantial improvement to any structure, the placement of a manufactured dwelling, or the initiation of other land development activities including, but not limited to, fencing, mining, dredging, filling, grading, paving, excavation or drilling operations within the Special Flood Hazard Area established in BCC 83.010. Outside of the Corvallis Urban Growth Boundary, standard agricultural practices of a recurring character are exempt from the provisions of this chapter.

(2) An application for a permit shall be submitted on a form provided by the Planning Official with plans, engineering calculations, and other information determined to be necessary for the review of the application by the Planning Official and County Engineer.

(3) An application shall be reviewed by the Planning Official and County Engineer to determine:

- (a) The applicability of provisions of this chapter.
- (b) Compliance with provisions of this chapter.
- (c) That the proposed development will not cause a significant negative effect on surrounding properties by changing the flow of flood waters or increasing flood elevations in the immediate vicinity.

(4) The County Engineer may require the design and installation of mitigative measures necessary to comply with BCC 83.110(3)(c).

(5) A permit shall not be issued until all necessary permits required by Federal or State law or County Ordinance have been secured. Alternatively, a permit may be issued with the condition that all necessary permits required by Federal or State law or County Ordinance will be secured prior to initiation of development activities approved by the permit.

(6) Issuance or denial of a floodplain development permit that requires the exercise of discretion shall include notification of the decision pursuant to 51.625.

[Ord 26, Ord 90-0069, Ord 92-0092, Ord 2005-0209, Ord 2009-0233 eff. 6/2/2011]

83.205 Floodway Determination; Restrictions.

(1) Except as provided for in subsection (4) of this section, the County Engineer shall determine whether any proposed development described in BCC 83.110(1) is located in a designated floodway as provided by BCC 83.010.

(a) If the proposed development is located in a designated floodway, the applicant shall clearly demonstrate that all encroachments, including fill, new construction, substantial improvements, and other development within the floodway would not result in any increase in flood levels during the occurrence of the base flood discharge.

(b) If the proposed development is located in a Special Flood Hazard Area where a floodway has not been designated as shown on the Flood Insurance Rate Maps, the applicant shall clearly demonstrate that the cumulative effect of the proposed development shall not increase the water surface elevation of the base flood more than one (1) foot at any point.

(2) The applicant shall derive base flood elevation data using the same or similar engineering methods used for "The Flood Insurance Study of Unincorporated Areas of Benton County, Oregon". The County Engineer and the Federal Emergency Management Agency may provide technical assistance. The applicant shall provide for certification by a licensed professional engineer or architect that the proposed development complies with provisions of this section.

(3) Within a floodway in the Corvallis Urban Growth Boundary as described in BCC 83.010(3), structural improvements and the placement of fill, other than in a public benefit such as a public improvement project, shall not be permitted. For the purposes of this section, public improvement projects include, but are not limited to, the construction of bridges, roads, storm water detention facilities, and water dependent uses. Public improvement projects are allowed if the applicant demonstrates, through hydrologic and hydraulic analyses prepared by a registered professional engineer, that the permitted development will not result in any increase in flood levels during the occurrence of the base flood discharge.

(4) Projects for stream habitat restoration may be permitted in the floodway provided:

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

(b) 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,

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

(d) An agreement to monitor the project, correct problems, and ensure that flood carrying capacity remains unchanged is included as part of the local approval.

[Ord 26, Ord 90-0069, Ord 92-0092, Ord 2005-0209, Ord 2009-0233 eff. 6/2/2011]

83.210 General Development Standards. Where allowed, all development in the Floodplain Management Overlay Zone shall comply with the following standards:

(1) A Pre-Construction Elevation Certificate shall be required for all new construction, substantial improvements, and non-substantial improvements prior to issuance of a building permit in the Special Flood Hazard Area (SFHA). A Post-Construction Elevation Certificate shall be required prior to final inspection approval for all building permits where the Pre-Construction Elevation Certificate shows the building site to be within a SFHA and the lowest adjacent grade (LAG) to be at or below the base flood elevation (BFE).

(2) All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

(3) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage. Methods and practices that minimize flood damage shall be used.

(4) Except as in subsection (a) below, electrical, heating, ventilation, plumbing, air-conditioning equipment and other service facilities shall be elevated a minimum of one (1) foot above the base flood elevation, or shall be designed to prevent water from entering or accumulating within the components during conditions of flooding.

- (a) Facilities serving a structure constructed prior to August 5, 1986, and not substantially improved since that date, may be installed at the same elevation as the top of the first habitable floor, or shall be designed to prevent water from entering or accumulating within the components during conditions of flooding. A basement shall not be considered a habitable floor.

Note: It is still strongly recommended that all electrical, heating, ventilation, plumbing, air-conditioning equipment and other service facilities be elevated a minimum of one (1) foot above the base flood elevation whenever possible.

(5) All new and replacement water supply and sanitary sewer systems shall be designed to minimize or eliminate infiltration of flood waters and discharge into floodwaters.

(6) On-site wastewater treatment systems shall be located outside of floodplain on properties where land outside the floodplain is comparable to or better than land located within the floodplain with regard to soil conditions, topography, and unencumbered area in accordance with the Oregon Department of Environmental Quality rules.

(7) Storage or processing of materials in a manner that would be hazardous in a flood shall be prohibited.

(8) Fences and Walls. New and replacement fencing shall be designed to automatically collapse under conditions of the base flood or to automatically allow the passage of water by having flaps or openings in the areas at or below the Base Flood Elevation sufficient to allow flood water and associated debris to pass through freely.

Fences within the floodplain are encouraged to be wire-strand construction rather than woven-wire, welded-wire, or solid construction. Wire-strand construction reduces the potential for the fence to collect debris during a flood, redirect floodwaters, and/or be washed downstream.

(9) AH Zone Drainage. Adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures.

(10) Below-grade crawlspaces are allowed subject to the following standards as found in FEMA Technical Bulletin 11-01, *Crawlspace Construction for Buildings Located in Special Flood Hazard Areas*, or successor document. (For more detailed information refer to FEMA Technical Bulletin 11-01.):

- (a) The building shall 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 (b) below. 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 an Oregon

registered professional engineer or architect. 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, shall have openings compliant with BCC 83.220 that equalize hydrostatic pressures by allowing the automatic, unrestricted 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 shall 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 shall 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.
- (e) The interior grade of a crawlspace below the BFE shall 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 shall 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) If the velocity of floodwaters at the site will exceed five (5) feet per second, other foundation types shall be used.

[Ord 26, Ord 90-0069, Ord 2005-0209, Ord 2009-0233 eff. 6/2/2011]

83.215 Special Siting Standards for Dwellings, Manufactured Dwellings, and Recreational Vehicles. Where allowed, new and substantially improved dwellings and recreational vehicles in the Floodplain Management Overlay Zone shall comply with the general development standards set forth in subsections (1) through (4) below.

(1) New dwellings, expansion of existing dwellings, and placement of manufactured dwellings are prohibited within the floodplain, with the following exceptions:

- (a) If through an Administrative Review the Planning Official determines that there is insufficient buildable land outside the floodplain to allow reasonable development of the property, then a building site partially or fully within the floodplain may be allowed.
 - (A) In approving such a site preference shall be given to sites that:
 - (i) Result in less fill and development within the floodplain;
 - (ii) Are of higher elevation;
 - (iii) Are farther from the top of bank of the adjacent water course
 - (iv) Minimize the risk of structural damage from flooding; and
 - (v) Preserve natural floodplain functions.

(B) In addition to the construction standards of this chapter, further conditions may be applied as deemed necessary by the Planning Official to minimize potential risks to the structure and potential impacts to other properties and the functioning of the floodplain.

(b) Replacement of an existing structure may be allowed, either:

(A) Within the building footprint of the structure being replaced;

(B) Up to a 10% expansion or shift of the building footprint of the structure being replaced;
or

(C) Within the same square footage area elsewhere on the site, if through an Administrative Review the Planning Official determines that the relocation of the structure enhances stormwater and floodplain functions. The relocation shall be considered to enhance stormwater and floodplain functions if it furthers any of the following goals without worsening any other goal:

(i) Replaces standard construction with flow-through construction;

(ii) Moves the structure to a higher elevation;

(iii) Moves the structure further from the top of bank of the adjacent water course;

(iv) Reduces the amount of impervious surface area in the floodway fringe;

(v) Does not negatively impact non-noxious riparian vegetation. Noxious vegetation is identified in the Oregon Department of Agriculture's Oregon Weed Policy and Classification System (Appendix 1) or successor document, including weeds designated as "A," "B," and/or "T".

(c) Additions to existing structures may be allowed if the addition either:

(A) Falls below the threshold of "substantial improvement"; or

(B) Will not result in the filling of additional floodway fringe area (such as a second story addition or flow-through construction).

(2) The lowest floor, including basement, of any new dwelling, or substantial improvement of a dwelling, or placement of a manufactured dwelling shall be elevated a minimum of 18 inches above the base flood elevation. In areas where a base flood elevation has not been established, applications for building permits shall be reviewed by the County Engineer to assure that proposed construction will be reasonably safe from flooding when considering historical data, high water marks, photographs of past flooding, etc., where available.

(3) A manufactured dwelling shall be securely anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques).

(4) A recreational vehicle placed within the A, A1-30, AH, and AE Flood Zones shall either:

(a) Be on the site for fewer than 180 consecutive days; or

(b) Be fully licensed and ready for highway use, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached addition; or

(c) Meet the requirements for manufactured dwellings under subsections (1) through (3) of this section.

[Ord 26, Ord 90-0069, Ord 2000-0157, Ord 2005-0209, Ord 2009-0233 eff. 6/2/2011]

83.220 Enclosed Areas Below Dwellings and Manufactured Dwellings. Fully enclosed areas below the lowest floor of a dwelling or a manufactured dwelling in the Floodplain Management Overlay Zone

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 shall either be certified by an Oregon registered professional engineer or architect or shall meet or exceed the following minimum standards:

- (1) A minimum of two flood-specific openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. Only that portion of an opening that is below the base flood elevation shall be included in the calculation. Underfloor vents as required to satisfy ventilation of crawlspace areas per applicable building code do not satisfy this standard;
- (2) The bottom of all openings shall be no higher than one (1) foot above grade; and
- (3) Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

[Ord 26, Ord 90-0069, Ord 2009-0233 eff. 6/2/2011]

83.225 Special Siting Standards for Structures Accessory to a Dwelling, and Agricultural, Commercial, Industrial, and other Nonresidential Structures.

(1) New or expanded commercial, industrial, and other nonresidential structures other than agricultural structures, are prohibited within the floodplain. If there is insufficient buildable land outside the floodplain to allow reasonable development of the property, a new or expanded primary structure may be authorized through the procedure specified in BCC 83.215(1)(a) through (c).

(2) Agricultural structures and structures accessory to a dwelling shall be:

- (a) Prohibited within the floodway; and
- (b) Allowed within the floodway fringe provided they comply with subsection (3).

(3) Where allowed, new construction and substantial improvement of structures accessory to a dwelling and agricultural, commercial, industrial, and other nonresidential structures shall comply with BCC 83.210 and one of the following sets of standards, as applicable:

- (a) For any such structure:
 - (A) The lowest floor, including basement, shall be elevated a minimum of 18 inches above the base flood elevation. In areas where a base flood elevation has not been established, applications for building permits shall be reviewed by the County Engineer to assure that proposed construction will be reasonably safe from flooding when considering historical data, high water marks, photographs of past flooding, etc., where available.
 - (B) Enclosed areas below such structures that are elevated shall comply with the requirements described in BCC 83.220.
- (b) For any such structure, the structure:
 - (A) Complies with BCC 83.210;
 - (B) Is floodproofed so that the portion of the structure below the base flood elevation is watertight with walls substantially impermeable to the passage of water;
 - (C) Has structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
 - (D) Is certified by an Oregon 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.
- (c) For any structure exempt from building permit requirements, the structure:

- (A) Shall not be used for human habitation and may be used solely for parking of vehicles or storage of items having low damage potential when submerged;
- (B) Shall not contain toxic material, oil or gasoline, or any priority persistent pollutant identified by the Oregon Department of Environmental Quality stored below BFE, unless confined in a tank installed in compliance with this ordinance;
- (C) Complies with BCC 83.210;
- (D) Has structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy as certified by an Oregon registered professional engineer; and
- (E) Is designed to automatically equalize hydrostatic flood forces on exterior walls by allowing the entry and exit of floodwaters as provided by BCC 83.220.
- (F) As a condition of approval, the owner shall sign the following declaratory statement to be recorded, along with a plot plan identifying the structure, in the County Deed Records for the parcel or lot upon which the building is constructed:

This property is situated within a flood hazard zone as shown on the Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency. The construction of a garage or other residential accessory structure to be used only for parking, access, or limited storage has been permitted by Benton County at an elevation below the base flood elevation for the site. Storage of hazardous chemicals, as defined in BCC 83.225(3)(c)(B), at an elevation below the base flood elevation within such structure is prohibited.

In consideration for not constructing the first floor of the structure above the base flood elevation, the owner agrees that the structure will be used exclusively for the purpose declared on the building permit, and that the structure will not be used for any other occupancy without obtaining the necessary building permits from Benton County to convert the occupancy. This agreement further serves as notice to the owner and successors in interest that contents of the structure are not insurable against flood loss except as provided by the insurer.

[Ord 26, Ord 90-0069, Ord 92-0092, Ord 96-0118, Ord 2009-0233 eff. 6/2/2011]

83.240 Notice of Floodproofing Implications. An applicant choosing to floodproof a nonresidential building pursuant to BCC 83.225(3)(b) shall be notified in writing 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 that level). [Ord 26, Ord 90-0069]

83.300 Major Development Proposals.

(1) Where the primary zone permits a subdivision, mobile home or manufactured dwelling park, or mobile home or manufactured dwelling subdivision, such use may be allowed in the Floodplain Management Overlay Zone if:

- (a) Such use is consistent with the need to minimize flood damage;
- (b) The applicant demonstrates that public utilities and facilities such as water supply, sewage disposal, natural gas and electrical systems are located and constructed to minimize flood damage; and
- (c) The applicant demonstrates that adequate drainage has been provided to reduce exposure to flood damage.

(2) Where base flood elevation data have not been provided by FEMA or are not available from another authoritative source, the applicant shall provide such data if the proposed subdivision or park equals or exceeds fifty (50) lots or parcels, or five (5) acres. Such data shall be derived using the same or similar engineering methods used in "The Flood Insurance Study for Benton County, Oregon and Incorporated Areas".

(3) Subdivisions shall also be subject to the provisions of BCC 83.605.

[Ord 26, Ord 90-0069, Ord 2009-0233 eff. 6/2/2011]

83.310 Alteration or Relocation of a Watercourse.

(1) The Planning Official shall notify adjacent communities and the Department of Land Conservation and Development of permit applications for alteration or relocation of a watercourse. The Planning Official shall submit evidence of such notification to FEMA. The County shall stipulate maintenance requirements for the altered or relocated portion of any watercourse so that flood carrying capacity is not diminished as a condition of permit approval pursuant to BCC 83.110.

(2) Within the Corvallis Urban Fringe, the following shall also apply. Water course alteration by artificial means is prohibited, with exceptions only for: emergency management purposes, or as mandated by State or Federal actions that supercede local authority, or to restore to its natural channel a stream whose course has been altered through human action. Prior to the alteration or relocation of a watercourse, the applicant for such authorization must notify the Oregon Department of State Lands (DSL) and submit copies of such notification to the Planning Official. The applicant shall submit certification provided by an Oregon-registered professional engineer, assuring that the flood carrying capacity of an altered or relocated watercourse can and will be maintained.

[Ord 26, Ord 90-0069, Ord 2000-0157, Ord 2005-0209]

83.405 Records of Compliance. The County Building Official shall certify compliance with the provisions of this chapter.

(1) The County Building Official shall obtain and record the actual elevation of the lowest habitable floor (including basement) of all new and substantially improved structures subject to this section and indicate whether the building contains a basement.

(2) The County Building Official shall verify and record the actual elevation of all new and substantially improved floodproofed structures and obtain and maintain certifications required by BCC 83.220 and BCC 83.235(1).

(3) The County Building Official shall maintain for public inspection all records pertaining to compliance with the provisions of this chapter.

[Ord 26, Ord 90-0069, Ord 2009-0233 eff. 6/2/2011]

83.505 Additional Standards in Corvallis Urban Fringe. In the Floodplain Management Overlay Zone within the Corvallis Urban Fringe, the following standards shall apply in addition to other applicable provisions of this chapter. In the case of conflict, the more restrictive standard shall apply. Developers of floodplain property are strongly encouraged to schedule a pre-application conference with the Community Development Department to review floodplain considerations.

(1) In areas identified on the Benton County Zoning Map as Partial-Protection Floodplain, the following shall apply:

- (a) Fill or construction in the floodplain shall be compensated for by removal of an equal amount of material from the floodplain on the same property. The purpose is to ensure that the available flood volume of the Special Flood Hazard Area (100-year floodplain) is not reduced. Volumetric exchange will not be required of buildings constructed with flow-through design. Areas of fill and excavation shall be designed to accommodate floodwater flows and shall not create barriers to the flow of floodwater. Proposals to alter topography in the floodplain must demonstrate that they will not result in alteration of hydrology or flow regimes that would cause erosion, unwanted ponding, or other problems.

(2) In areas identified on the Benton County Zoning Map as High-Protection Floodplain, the following shall apply:

- (a) Removal of vegetation from the floodplain is prohibited, except for the following purposes:
 - (A) Removal of a hazard tree which poses an immediate threat to life or property. Tree removal shall comply with the following standards:

- (i) The stump and root wad of any altered tree shall remain undisturbed in place;
 - (ii) Any tree removed is required to be replaced by like native species or alternate approved native species.
- (B) Maintenance of lawns, planted vegetation, and landscaping, to the extent existing on October 6, 2005.
 - (C) Stream restoration and enhancement programs approved by the Oregon Department of Fish and Wildlife as improving riparian function, and wetland restoration and enhancement programs approved by Oregon Department of State Lands or the Oregon Department of Fish and Wildlife.
 - (D) Removal of non-native, invasive, and/or noxious vegetation, as identified in the Oregon Department of Agriculture's Oregon Weed Policy and Classification System (Appendix 1) or successor document, including weeds designated as "A", "B", and/or "T". As necessary to control erosion, areas of vegetation removal shall be re-vegetated with native species. If necessary to prevent erosion prior to new vegetation becoming established, short-term, non-structural erosion control measures shall be employed;
 - (E) Substitution of native plant species for non-native plants. Additionally, native plants may be planted without accompanying removal of non-native plants. All new plantings shall be species listed on the City of Corvallis Native Plant List as appropriate for the proposed location. Plantings being substituted for non-native plants shall be species identified on the Corvallis Native Plant List as being in the same ecological-function category as the replaced plants. Plantings shall be maintained to ensure they become established.
 - (F) For the development of water-related or water-dependent uses, provided they are designed and constructed to minimize impact on the floodplain;
 - (G) Removal of emergent in-channel vegetation likely to cause flooding events that result in structural damage;
 - (H) The minimum vegetation removal necessary to establish and maintain a fire fuel-break safety zone, as defined in BCC 88.010(2), surrounding a structure. Benton County encourages property owners to consult with the Oregon Department of Fish and Wildlife on ways to minimize the impact of this vegetation removal and to mitigate the impacts that do occur.
 - (I) Continuation of agricultural activities, limited to areas that have been converted to farm use prior to October 6, 2005. The property owner shall have the burden of proof in demonstrating that an area was converted prior to this date.
 - (J) The minimum vegetation removal necessary to establish a pedestrian trail located at least 10 feet inland from the top of bank.
 - (K) Vegetation removal in conjunction with a development activity allowed under BCC 83.505(2).
 - (L) Commercial forestry operations authorized by the Oregon Department of Forestry.
 - (M) Vegetation removal within the area authorized under the provisions for a Modification to Natural Features Standards (BCC 88.800).
- (b) Building, Paving, and Grading Activities:
 - (A) In the 0.2-ft. Floodway portion of the Floodplain Management Overlay Zone within the Corvallis Urban Fringe, no encroachments, including fill, new construction, substantial improvements, and other development are allowed, with the exception of bridges, infrastructure, utilities, or water dependent uses for which it may be demonstrated, through hydrologic and hydraulic analyses performed in accordance with standard

engineering practices, that the proposed encroachment would not result in any increase in flood levels within the community during the base flood discharge. Such exceptions shall also be designed and constructed to minimize adverse impacts to stormwater and floodplain functions within the floodway fringe, and comply with the mandatory construction standards in BCC 83.210. Development within the 0.2-ft. Floodway shall comply with all applicable State and Federal requirements.

- (B) In the Floodway Fringe portion of the Floodplain Management Overlay Zone within the Corvallis Urban Fringe, the placement of structures or impervious surfaces, as well as grading, excavation, and the placement of fill, is prohibited except as provided below. Such exceptions shall be designed and constructed to minimize adverse impacts to stormwater and floodplain functions within the floodway fringe, and comply with the mandatory construction standards in BCC 83.210.
- (i) Replacement of an existing structure may be allowed pursuant to BCC 83.215(1)(b).
 - (ii) Additions to an existing structure may be allowed pursuant to BCC 83.215(1)(c).
 - (iii) Accessory structures and agricultural structures, provided they are of flow-through design and construction.
 - (iv) Grading and excavation that are standard agricultural practices of a reoccurring character, limited to areas that have been converted to farm use prior to October 6, 2005. The property owner shall have the burden of proof in demonstrating that an area was converted prior to this date.
 - (v) The following types of infrastructure, provided they are designed to minimize impacts to floodplain hydrologic and ecologic function:
 - (a) Construction of streets, roads, public utilities, bridges, and bicycle and pedestrian ways that are included in the City of Corvallis Transportation Plan, or in other adopted City infrastructure/utility plans.
 - (b) Construction of streets, roads, bridges and bicycle and pedestrian ways necessary in order to maintain an acceptable functional classification of roadways adjacent to the property.
 - (c) Driveways necessary to provide access to an approved building site, provided the minimum floodplain area is disturbed.
 - (vi) Development of water-related and water-dependent uses;
 - (vii) Erosion control or flood control measures that have been approved by the Oregon Department of State Lands (DSL) and/or the U.S. Army Corps of Engineers, and that utilize bio-engineering methods. Streambank hardening (installation of hard-surfaced erosion- or flood-protection structures such as rip-rap) is prohibited except where necessary to address an imminent hazard to a structure built prior to October 6, 2005. Where allowed, hard-surface measures shall be designed by a Professional Engineer licensed by the State of Oregon and shall be approved by the Oregon Department of State Lands or U.S. Army Corps of Engineers, and shall at a minimum, require backfilling with soil and planting with native vegetation;
 - (viii) Development authorized under the provisions for Modification to Natural Features Standards (BCC 88.800).

[Ord 2005-0209, Ord 2009-0233 eff. 6/2/2011]

83.605 Parcels and Lots. Parcels or lots resulting from subdivisions, partitions and property line adjustments of land in the Floodplain Management Overlay Zone shall comply with the requirements of this section.

(1) Parcels and lots shall be designed such that existing and future uses and development activities allowed by the underlying zone can be carried out in conformance with the regulations contained in this chapter. Creation of lots or parcels that do not meet this requirement is prohibited, with the exception of lots or parcels created for public park or open space purposes.

(2) For each lot or parcel, other than those designated for non-residential use, open space use or designated as otherwise unbuildable, the applicant shall demonstrate that:

- (a) Suitable and adequate land exists outside the floodplain for siting of the primary structure; and
- (b) Access by standard emergency vehicles such as fire apparatus and ambulance from the public road to the building site will not be prevented by flood waters during the base flood. This determination shall be based upon input from the fire protection district serving the site. A floodplain development permit is required for demonstrating that an elevated access road will comply with the provisions of this chapter.

(3) Site feasibility approval areas for on-site wastewater treatment systems shall be located outside of the floodplain if land outside the floodplain on the proposed lot or parcel is comparable to or better than land located within the floodplain with regard to soil conditions, topography, and unencumbered area in accordance with the Oregon Department of Environmental Quality rules.

[Ord 2005-0209, Ord 2009-0233 eff. 6/2/2011]

83.700 Critical Facilities. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the Special Flood Hazard Area (SFHA) (100-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

[Ord 2009-0233 eff. 6/2/2011]

83.800 Variance Procedure.

(1) Procedure. A variance to the requirements of this chapter may be granted pursuant to the standard variance procedure specified Chapter 53 and the provisions of this section.

(2) Variances may be issued for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places or the Statewide Inventory of Historic Properties, without regard to the procedures set forth in this section, provided that the alteration will not preclude the structure's continued designation as an Historic Structure.

(3) Criteria. A variance may be approved only upon the applicant demonstrating that the following criteria in addition to the standard variance criteria of BCC 53.410 are met.

- (a) Granting of the variance shall 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 local laws or ordinances.
- (b) In considering a variance application, the Planning Official shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and:
 - (A) The danger that materials may be swept onto other lands to the injury of others;
 - (B) The danger to life and property due to flooding or erosion damage;
 - (C) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - (D) The importance of the services provided by the proposed facility to the community;

- (E) The necessity to the facility of a waterfront location, where applicable;
- (F) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
- (G) The compatibility of the proposed use with existing and anticipated development;
- (H) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
- (I) The safety of access to the property in times of flood for ordinary and emergency vehicles;
- (J) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and,
- (K) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

(4) Conditions of Approval.

- (a) Upon consideration of the factors of subsections (2) and (3) of this section and the purposes of this chapter, the Planning Official may attach such conditions to the granting of a variance as deemed necessary to further the purposes of this ordinance.
- (b) Any applicant to whom a variance from the elevation standard is granted shall be given written notice that:
 - (A) The structure will be permitted to be built with a lowest floor elevation below the base flood elevation;
 - (B) The cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation
 - (C) Increased premium rates for flood insurance can be as high as \$25 for \$100 of insurance coverage; and
 - (D) Construction below the base flood level increases risks to life and property.

(5) Records. The Community Development Department shall maintain the records of all variance requests and report any variance approvals to the Federal Insurance Administration upon request.

[Ord 2009-0233 eff. 6/2/2011]



