

Chapter 83

Floodplain Management Overlay (/FP)

Note: For legislative history, refer to Ordinance 2021-0304, effective 10/7/2021.

The legislative history is documented in the following ordinance exhibits:

- *Exhibit 2 – Former code with references to the 2021 adopted code section numbers*
- *Exhibit 3 – 2021 adopted code with references to former code section numbers*
- *Exhibit 4 – Additional quick-reference in the form of a table that identifies 2021 adopted code section numbers and former code section numbers*

STATUTORY AUTHORITY, FINDINGS OF FACT, PURPOSE, AND METHODS

83.005 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, Benton County does ordain as follows:

(1) Findings of Fact

- (a) The flood hazard areas of Benton 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.
- (b) 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.

(2) Statement of Purpose

- (a) 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.
- (b) It is the purpose of this ordinance to promote public health, safety, and general welfare, and to minimize public and private losses due to flooding in special flood hazard areas by provisions designed to:
 - (A) Protect human life, health, and property;
 - (B) Minimize expenditure of public money for costly flood control projects;
 - (C) Minimize the need for rescue, emergency services, and relief efforts associated with flooding and generally undertaken at the expense of the general public;
 - (D) Minimize prolonged business interruptions and unnecessary disruption of commerce, access and public service during times of flood;
 - (E) 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;
 - (F) Decrease the cost of flood insurance;

- (G) Help maintain a stable tax base by providing for the sound use and development of special flood hazard areas;
 - (H) Ensure that potential buyers are notified that property is in a special flood hazard area;
 - (I) Ensure that those who occupy the special flood hazard areas assume responsibility for their actions;
 - (J) Recognize and preserve the natural flood mitigation functions of floodplains;
 - (K) Preserve the ecosystem functions of floodplains; and
 - (L) Participate in and maintain eligibility for flood insurance and disaster relief.
- (3) Methods of Reducing Flood Losses. In order to accomplish its purposes, this ordinance includes methods and provisions for:
- (a) 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
 - (b) Requiring that development vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
 - (c) Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
 - (d) Controlling filling, grading, dredging, and other development which may increase flood damage;
 - (e) Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or may increase flood hazards in other areas.

83.020 Definitions. For the purposes of this chapter, the following definitions apply. Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage.

- (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: The Federal Emergency Management Agency (FEMA) discourages the use of the term “100-year floodplain” because it implies that a flood occurs only once every one hundred years, rather than the true statistical meaning of the term.
- (3) “Agricultural Structure” means a nonresidential structure customarily provided in conjunction with farm use for which, except for the fact that the structure is located within the special flood hazard area, would be exempt from building code requirements pursuant to ORS 455.315. Any such structure located in a special flood hazard area is not eligible for exemption from building code requirements and must obtain approval for a structural permit.

Note: The term “agricultural structure” has an alternate meaning when used in BCC 83.410; the alternate meaning is defined in that section and is specific to granting a minor variance for structures associated with agricultural use.

- (4) “Appeal” means a request for a review of the interpretation of any provision of this ordinance or a request for a variance.
- (5) “Area of Shallow Flooding” See definition for “Shallow Flooding Area” below.
- (6) “Area of Special Flood Hazard” See definition for “Special Flood Hazard Area” below.

- (7) “Base Flood” See definition listed in BCC 51.020.
- (8) “Base Flood Elevation (BFE)” See definition listed in BCC 51.020.
- (9) “Basement” means any area of a building having its floor subgrade (below ground level) on all sides.
- (10) “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;
 - (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; and
 - (c) The height, measured from the interior grade of the crawlspace to the lowest habitable floor does not exceed five (5) feet at any point.
- (11) “Building” See definition for “Structure” below.
- (12) “Conditional Letter of Map Amendment (CLOMA)” means FEMA’s comment on a proposed structure or group of structures that would, upon construction, be located on existing natural ground above the base flood elevation on a portion of a legally defined parcel of land that is partially inundated by the base flood.
- (13) “Conditional Letter of Map Revision (CLOMR)” means 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.
- (14) “Conditional Letter of Map Revision - Based on Fill (CLOMR-F)” means 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.
- (15) “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 materials or hazardous waste.
- (16) “Development” means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures; fences; bridges and culverts; mining, dredging, filling, grading, paving, excavation or drilling operations; or storage of equipment or materials located within the special flood hazard area.
- (17) “Elevated Structure” means a non-basement structure which has a lowest habitable floor that is elevated above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.
- (18) “Flood” or “Flooding” means:
 - (a) A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - (A) The overflow of inland water;
 - (B) The unusual and rapid accumulation or runoff of surface waters from any source; and/or
 - (C) Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in subsection (a)(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.

- (b) 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 subsection (a)(A) of this definition.
- (19) “Flood Elevation Study” See definition for “Flood Insurance Study” below.
- (20) “Flood Hazard” See definition listed in BCC 51.020.
- (21) “Flood Insurance Rate Map (FIRM)” means 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).
- (22) “Flood Insurance Study (FIS)” means 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.
- (23) “Flood Proofing” See definition listed in BCC 51.020.
- (24) “Floodplain” See definition listed in BCC 51.020.
- (25) “Floodplain Administrator” means the community official designated by title to administer and enforce the floodplain management regulations.
- (26) “Flood-specific Venting” means two or more openings in the walls of an enclosed space below an elevated structure or the walls of a non-elevated structure. Such openings shall qualify as flood-specific venting if they meet the standards of either (a) or (b), or a combination of (a) and (b) such that the total vent area provided by the combination of prescriptive and pre-fabricated vents meets the venting required by (a)(B) and (b)(A):
 - (a) Prescriptive flood-specific venting requirements:
 - (A) Underfloor vents as required to satisfy ventilation of crawlspace areas per applicable building code do not satisfy the standards for flood-specific venting;
 - (B) A minimum of two flood-specific openings having a total net area of not less than one (1) square inch for each square foot of enclosed area (measured on the exterior of the enclosure walls) subject to flooding shall be provided. Only the portion of a flood-specific opening that is below the base flood elevation shall be included in the calculation;
 - (C) Flood-specific openings shall be installed on at least two exterior walls of each enclosed space;
 - (D) The bottom of all flood-specific openings shall be no higher than one (1) foot above adjacent grade; and
 - (E) Flood-specific openings may be equipped with screens, louvers, or other coverings or devices provided that they:
 - (i) Permit the automatic entry and exit of floodwaters into and out of the enclosed areas, and
 - (ii) Are accounted for in the determination of the net open area.
 - (b) Pre-fabricated flood vents certified by the Federal Emergency Management Agency (FEMA):
 - (A) A minimum of two flood-specific openings having a total net area certified by FEMA as sufficient for the enclosed area subject to flooding shall be provided. Only the

portion of an opening that is below the base flood elevation shall be included in the calculation;

- (B) Flood-specific openings shall be installed on at least two exterior walls of each enclosed space; and
 - (C) The bottom of all flood-specific openings shall be no higher than one (1) foot above adjacent grade.
- (27) “Floodway” See definition listed in BCC 51.020.
- (28) “Floodway Fringe” See definition listed in BCC 51.020.
- (29) “Flow-through Construction” means a structure that does not hinder or obstruct the movement of, or displace, surface floodwaters. An example of “flow-through construction” would be elevation of a structure on posts, piers, or piles. Neither flood-specific venting nor underfloor vents required to satisfy air ventilation requirements constitute “flow-through construction”.
- (30) “Functionally Dependent Use” means 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.
- (31) “Hazardous Material” and “Hazardous Waste” mean substances defined by the Oregon Department of Environmental Quality as including 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; or
 - (i) Dry cleaning solvent as defined by ORS 465.200(9).
- (32) “Highest Adjacent Grade” means the highest natural elevation of the ground surface prior to, during, and after construction next to the proposed walls of a structure.
- (33) “Historic Structure” means any structure that is:
- (a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
 - (b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary of the Interior to qualify as a registered historic district;

- (c) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior; or
- (d) Individually listed on a local inventory of historic places in 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.
- (34) “Letter of Map Amendment (LOMA)” means FEMA’s official amendment, by letter, of the Flood Insurance Rate Map (FIRM) based on technical data showing that an existing structure is located on naturally high ground (i.e. it has not been elevated by fill), or that an area of land consists of naturally high ground, this is equal to or higher than the base flood and was inadvertently included in the special flood hazard area.
- (35) “Letter of Map Change (LOMC)” means an official Federal Emergency Management Agency (FEMA) determination, by letter, to amend or revise effective Flood Insurance Rate Maps and Flood Insurance Studies. The following are categories of LOMCs: Conditional Letter of Map Amendment (CLOMA), Conditional Letter of Map Revision (CLOMR), Conditional Letter of Map Revision – Based on Fill (CLOMR-F), Letter of Map Amendment (LOMA), Letter of Map Revision (LOMR), Letter of Map Revision – Based on Fill (LOMR-F), and Physical Map Revision (PMR).
- (36) “Letter of Map Revision (LOMR)” means 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 special flood hazard area. An approved LOMR officially revises the FIRM or FBFM, and sometimes the Flood Insurance Study (FIS) report and, when appropriate, includes a description of the modifications. A LOMR approval is generally accompanied by an annotated copy of the affected portions of the FIRM, FBFM, or FIS report.
- (37) “Letter of Map Revision - Based on Fill (LOMR-F)” means 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.
- (38) “Lowest Adjacent Grade” means the lowest natural elevation of the ground surface prior to, during, and after construction next to the proposed walls of a structure.
- (39) “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 non-elevation design requirements of this ordinance.
- (40) “Lowest Habitable Floor” See definition for “Lowest Floor” above.
- (41) “Manufactured Dwelling” means 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 the term “manufactured home”.
- (42) “Manufactured Dwelling Park or Subdivision” means a parcel (or contiguous parcels) of land divided into two or more manufactured dwelling lots for rent or sale.
- (43) “Mean Sea Level” means, for purposes of the National Flood Insurance Program, the North American Vertical Datum (NAVD) of 1988 or other datum, to which Base Flood Elevations shown on a community's Flood Insurance Rate Map are referenced.

- (44) “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 Benton County and includes any subsequent improvements to such structures.
- (45) “Non-residential Structure” means any structure other than:
- (a) A dwelling; or
 - (b) A structure accessory to a dwelling.
- (46) “Physical Map Revision (PMR)” means FEMA’s physical revision and republication of an effective Flood Insurance Rate Map (FIRM), or a portion of an effective FIRM, or a 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 base flood elevations, or the special flood hazard area.
- (47) “Residential Structure” means a dwelling (including an accessory dwelling unit), manufactured dwelling, or accessory living area in a separate structure on same property.
- (48) “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.
- (49) “Shallow Flooding Area” means a designated Zone AH on a community’s Flood Insurance Rate Map (FIRM) with a one percent (1%) or greater annual chance of flooding to an average depth of one (1) to three (3) 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.
- (50) “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. It is shown on the Flood Insurance Rate Map (FIRM) as Zone A, AE, AH, or A1-A30. This area includes both the floodway fringe and the floodway and is commonly referred to as the “100-year floodplain”. “Special flood hazard area” is synonymous in meaning and definition with the phrase “area of special flood hazard”.
- (51) “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.
- (a) 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.
 - (b) Permanent construction does not include:
 - (A) Land preparation, such as clearing, grading, and filling;
 - (B) Installation of streets and/or walkways;
 - (C) Excavation for a basement, footings, piers, or foundations or the erection of temporary forms; or
 - (D) Installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

- (c) 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.
- (52) “Structure” means a building with a roof and two (2) or more rigid exterior walls, including a dwelling, a manufactured dwelling, or a gas or liquid storage tank that is principally above ground.
- (53) “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.
- (54) “Substantial Improvement” means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty percent (50%) 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.”

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

- (55) “Vacant Land” means a parcel or lot on which:
 - (a) No dwelling is located; or
 - (b) A dwelling was previously located but the dwelling was removed more than one year prior to submission of a complete construction or placement permit application for a replacement dwelling.
- (56) “Variance” means a grant of relief by Benton County from the terms of a floodplain management regulation.
- (57) “Violation” means 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 ordinance is presumed to be in violation until such time as that documentation is provided.

GENERAL PROVISIONS

83.100 Lands to Which this Ordinance Applies.

This ordinance shall apply to all special flood hazard areas within the jurisdiction of Benton County.

83.110 Basis for Establishing the Special Flood Hazard Areas.

- (1) The Floodplain Management Overlay Zone shall apply to all special flood hazard areas identified by the Federal Insurance Administrator in the scientific and engineering report entitled “Flood Insurance Study for Benton County, Oregon and Incorporated Areas,” revised December 8, 2016, with accompanying Flood Insurance Rate Maps (FIRM), except as otherwise provided by this code, adopted effective June 2, 2011 and as revised by:
 - (a) Physical Map Revision (PMR) of Panels 41003 0094G, 41003C 0111G, 41003C 0112G, 41003C 0113G, and 41003C 0114G, effective December 8, 2016;
 - (b) Letter of Map Revision (LOMR) Case No. 13-10-0260P, effective November 29, 2013;

- (c) LOMR Case No. 14-10-0472P, effective July 14, 2014;
- (d) LOMR Case No. 17-10-1169P, effective June 29, 2018;
- (e) LOMR Case No. 17-10-1546P, effective March 29, 2018; and
- (f) LOMR Case No. 18-10-0715P, effective March 28, 2019.

The Flood Insurance Study (FIS) and accompanying maps are hereby incorporated by reference into the Development Code and declared to be a part of this ordinance. The FIS and FIRM panels are on file at the Benton County Community Development Department office.

- (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.
- (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, in addition to the provisions of this chapter that apply to unincorporated Benton County in general, the restrictions and use limitations specified in BCC 83.230(2)(d) and 83.700. In the case of any conflicts between the additional provisions in BCC 83.230(2)(d) and 83.700 and the provisions of this chapter that apply to unincorporated Benton County in general, 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 as shown on the Flood Insurance Rate Maps identified in BCC 83.110(1) rather than a one 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 83.110(1).
 - (B) Map Refinement. For the purposes of BCC 83.700(2), 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 Revision (LOMR) or Letter of Map Amendment (LOMA) approved by the Federal Emergency Management Agency (FEMA).

83.120 Coordination with Benton County Building Codes.

Benton County Building Code, as contained in Chapter 11 of the Benton County Code, aligns with State of Oregon Specialty Codes and contains certain provisions that apply to the design and construction of buildings and structures located in special flood hazard areas. Therefore, this ordinance is intended to be administered and enforced in conjunction with the Benton County Building Code.

83.130 Compliance and Penalties for Noncompliance.

- (1) COMPLIANCE. All development within special flood hazard areas is subject to the terms of this ordinance and required to comply with its provisions and all other applicable regulations.
- (2) PENALTIES FOR NONCOMPLIANCE. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this ordinance and other applicable regulations. Violations of the provisions of this ordinance by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall be enforced subject to the provisions of Chapter 31 of the Benton County Code. Nothing contained herein shall prevent Benton County from taking such other lawful action as is necessary to prevent or remedy any violation.

83.140 Abrogation and Severability.

- (1) ABROGATION. This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
- (2) SEVERABILITY. This ordinance and the various parts thereof are hereby declared to be severable. If any section clause, sentence, or phrase of the ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way affect the validity of the remaining portions of this ordinance.

83.150 Interpretation.

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

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

83.160 Warning and Disclaimer of Liability.

- (1) WARNING. The degree of flood protection required by this ordinance 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 ordinance does not imply that land outside the special flood hazard areas or uses permitted within such areas will be free from flooding or flood damages.
- (2) DISCLAIMER OF LIABILITY. This ordinance shall not create liability on the part of Benton County, any officer or employee thereof, or the Federal Insurance Administrator for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

ADMINISTRATION

83.200 Floodplain Administrator.

- (1) DESIGNATION. The Planning Official, the Floodplain Administrator, and their designee, are hereby appointed to administer, implement, and enforce this ordinance 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.** Duties of the Floodplain Administrator, or their designee, shall include, but not be limited to the provisions of BCC 83.210 through BCC 83.240.

83.210 Information to Be Obtained and Maintained.

The Floodplain Administrator shall obtain, maintain, and make available for public inspection the following information specified in section BCC 83.260.

83.220 Permit Review.

- (1) An application shall be reviewed by the Floodplain Administrator and County Engineer to determine the following:
 - (a) The applicability of the provision of this chapter;
 - (b) Compliance with the applicable provisions of this chapter;
 - (c) All other required local, state, and federal permits have been obtained and approved. 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;
 - (d) The location of the proposed development in relation to a floodway. If any portion of the proposed development is located within the floodway, compliance with the floodway provisions of this ordinance in section BCC 83.800 is required;
 - (e) The proposed development is located in an area 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 section BCC 83.310; and
 - (f) Provide to building officials the Base Flood Elevation (BFE) and applicable freeboard elevation requirements for any structure requiring a floodplain development permit and required to be elevated.
 - (g) Whether or not the proposed development qualifies as a substantial improvement as defined in section 83.020. If a proposed development is a substantial improvement, compliance with the provisions of section BCC 83.240 is required.
 - (h) Whether or not the proposed development activity is a watercourse alteration. If a watercourse alteration is proposed, compliance with the provisions of BCC 83.230(2) is required.
 - (i) Whether or not the proposed development activity includes the placement of fill or excavation. Any placement of fill or excavation shall comply with applicable standards.
 - (j) The proposed development will not cause an increase of the flood risk to surrounding properties, by changing the flow of floodwaters in a way that increases risk to existing structures or by increasing flood elevations in the immediate vicinity;
- (2) The County Engineer may require the design and installation of mitigative measures necessary to comply with BCC 83.220(1)(j).
- (3) Issuance or denial of a floodplain development permit that requires the exercise of discretion shall include notification of the decision pursuant to BCC 51.625.

83.230 Requirement to Notify Other Entities and Submit New Technical Data.

- (1) **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.

(2) WATERCOURSE ALTERATIONS.

- (a) The Planning Official 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.
- (b) The applicant shall notify the Federal Insurance Administration through submission of a Letter of Map Revision (LOMR) along with either:
 - (A) A proposed maintenance plan to assure the flood carrying capacity within the altered or relocated portion of the watercourse is maintained; or
 - (B) Certification by a registered professional engineer that the project has been designed to retain its flood carrying capacity without periodic maintenance.
- (c) The applicant shall submit when required a Conditional Letter of Map Revision (CLOMR) and a Letter of Map Revision (LOMR) pursuant to BCC 83.230(3). As a condition of permit approval, the applicant shall be required to ensure compliance with all applicable requirements of BCC 83.230(3).
- (d) Within the Corvallis Urban Fringe, the following shall also apply:
 - (A) Water course alteration by artificial means is prohibited, with exceptions only for:
 - (i) Emergency management purposes;
 - (ii) As mandated by State or Federal actions that supersede local authority; or
 - (iii) To restore to its natural channel a stream whose course has been altered through human action.
 - (B) 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.
 - (C) 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.

(3) REQUIREMENT TO SUBMIT NEW TECHNICAL DATA.

- (a) 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 (6) 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.
- (b) The Floodplain Administrator shall require a Conditional Letter of Map Revision prior to the issuance of a floodplain development permit for:
 - (A) Proposed floodway encroachments that increase the base flood elevation; and

- (B) 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.
- (c) The Floodplain Administrator shall require a Letter of Map Revision (LOMR) to be completed within six (6) months of project completion for the following circumstances:
 - (A) For projects that will expand the boundaries of the special flood hazard area regardless of their effect on the base flood elevation; or
 - (B) For bridge and large culvert installation or replacement projects regardless of their effect on the base flood elevation; or
 - (C) When an applicant has obtained a CLOMR, except as specified in subsections (i) and (ii) below:
 - (i) If a CLOMR is obtained for the purposes of documenting compliance with the Endangered Species Act and the project will not cause a rise as specified in BCC 83.230(3)(b), then a LOMR is not required; or
 - (ii) If a CLOMR is obtained and the applicant subsequently alters the project in such a way that it no longer causes a rise as specified in BCC 83.230(3)(b), then a LOMR is not required.

Note: The exceptions listed in subsections (i) and (ii) above do not apply to projects that meet the criteria in BCC 83.230(c)(A) or (B).

- (d) 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.
- (e) 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.

83.240 Substantial Improvement and Substantial Damage Assessments and Determinations.

- (1) The Floodplain Administrator shall conduct Substantial Improvement (SI) reviews for all structural development proposal applications and maintain a record of SI calculations within permit files in accordance with section BCC 83.260(2).
- (2) Substantial Damage (SD) assessments shall be conducted by the Floodplain Administrator, other qualified county staff, or their designee when structures are damaged due to a natural hazard event or other causes. The Floodplain Administrator shall make SD determinations whenever structures within the special flood hazard area are damaged to the extent that 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.

ESTABLISHMENT OF DEVELOPMENT PERMIT

83.250 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 any area horizontally within the special flood hazard area established in section BCC 83.110.
- (2) **APPLICATION FOR FLOODPLAIN DEVELOPMENT PERMIT.** An application for a permit shall be submitted on a form provided by the Floodplain Administrator. Documentation to be provided with the application form may include, but is not limited to, plans drawn to scale showing the nature,

location, dimensions, and elevations of the area in question; locations of existing and/or proposed structures, fill, storage of materials drainage facilities; engineering calculations; and other information determined to be necessary for the review of the application by the Floodplain Administrator and County Engineer.

83.260 Information Required to Be Obtained, Maintained, and Submitted.

- (1) The following information is required to be submitted with a floodplain development permit application if applicable to the proposed project:
 - (a) Proposed project cost (used for determination of substantial improvement calculation) shall be submitted by the applicant for any improvement, addition, reconstruction, renovation, or rehabilitation of an existing structure.
 - (b) Elevation data for structural construction and alterations shall be submitted by the applicant and maintained by the Floodplain Administrator. This data shall be submitted in the form of Elevation Certificates and/or Letters of Map Change as follows:
 - (A) A Pre-Construction Elevation Certificate approved for inclusion in the permit record prior to start of construction and prior to issuance of a building permit for all new construction, substantial improvements, and non-substantial improvements within the Special Flood Hazard Area (SFHA) or within 50 feet of the SFHA.
 - (B) For all building permits where a Pre-Construction Elevation Certificate shows the building site to be (a) within the SFHA, regardless of the lowest adjacent grade (LAG) shown on the Pre-Construction Elevation Certificate or (b) at or below the Base Flood Elevation if the site is within 50 feet of the SFHA:
 - (i) A Mid-Construction Elevation Certificate approved for inclusion in the permit record after placement of the lowest habitable floor but prior to further vertical construction and prior to approval of underfloor inspection (for site-built structures), setup inspection (for manufactured dwellings), or slab inspection (for pole barn construction if a slab is poured); and
 - (ii) A Post-Construction Elevation Certificate approved for inclusion in the permit record upon completion of all construction activities (including utility installations and final grading) and prior to approval of final inspection.
 - (C) All Elevation Certificates shall:
 - (i) Be prepared and sealed by an Oregon-registered Professional Land Surveyor or an Oregon-licensed Civil Engineer.
 - (ii) Document the elevation (in relation to mean sea level) of the Base Flood Elevation, the natural grade of the building site for a structure prior to start of construction, the finished grade of the building site after completion of all construction, the placement of any fill, the lowest habitable floor (including basement) of the structure, the interior grade of any enclosure below the lowest habitable floor, all attendant utilities, and all other elevation information applicable to the project.
 - (iii) Be submitted to, and approved by, the Floodplain Administrator.
 - (iv) Be maintained by the Floodplain Administrator and made available for public inspection.
 - (D) Alternatives to submission of one or more Elevation Certificates:
 - (i) Letter of Map Amendment (LOMA)

1. May be submitted in place of a Pre-, Mid-, or Post-Construction Elevation certificate.
 2. If the LOMA was issued specific to an existing structure footprint and is submitted for a lateral addition to that structure, then submission of either Mid- and Post-Construction Elevation Certificates or a new LOMA approved for the expanded footprint area is required to document that the finished grade at the addition site remains higher than the Base Flood Elevation.
- (ii) Conditional Letter of Map Revision – Based on Fill (CLOMR-F) and Letter of Map Revision – Based on Fill (LOMR-F)
1. May be submitted in place of a Pre-Construction Elevation certificate for a building site proposed to be elevated through placement of fill.
 2. If a CLOMR-F is approved, then submission of either a LOMR-F (for a building site fully elevated in compliance with the CLOMR-F approval) or submission of Mid- and Post-Construction Elevation Certificates (for a building site not fully elevated as proposed in the CLOMR-F approval) is required.
- (E) All Letters of Map Change (i.e. LOMA, CLOMR-F, and LOMR-F) shall be:
- (i) Approved by the Federal Insurance Administrator.
 - (ii) Submitted to, and approved for inclusion in the permit records by, the Floodplain Administrator.
 - (iii) Maintained by the Floodplain Administrator and made available for public inspection.
- (c) Proposed elevation (in relation to mean sea level) to which any non-residential structure will be floodproofed.
- (d) Certification by an Oregon-licensed Civil Engineer that the floodproofing methods proposed for any non-residential structure meet the floodproofing criteria for non-residential structures in section BCC 83.610.
- (e) Description of the extent to which any watercourse will be altered or relocated.
- (f) Base Flood Elevation data for subdivision proposals or other development when required per sections BCC 83.220 and BCC 83.520(1).
- (g) The amount and location of any fill or excavation activities proposed.
- (2) The Floodplain Administrator shall obtain, maintain, and make available for public inspection the following information:
- (a) All submitted and approved Elevation Certificates;
 - (b) All floodproofing certificates required under this ordinance;
 - (c) All variance actions, including justification for their issuance;
 - (d) All hydrologic and hydraulic analyses performed as required under section BCC 83.800;
 - (e) All substantial improvement and substantial damage calculations and determinations as required under section BCC 83.240; and
 - (f) All records pertaining to the provisions of this ordinance.

83.270 Floodplain Development Permit Exemptions.

- (1) The following development activities in the flood fringe require application for a floodplain development permit, but may be deemed exempt from floodplain development regulations upon submission of the application form and appropriate supporting documentation. These exemptions do not apply to development in the floodway. (Note: Federal and State laws and regulations, including Oregon Drainage Law, may still apply to exempted development activities.)
 - (a) Agricultural activities (not including structures; placement of fill or excavation that impounds, relocates, or redirects the flow of floodwaters; or creation of berms or dikes) of a recurring character on land located outside of the Corvallis Urban Growth Boundary that are considered accepted farming practices (as that term is defined in BCC 51.020).
 - (b) Placement of fill within the floodway fringe, provided all of the following are met:
 - (A) The fill is used solely for purposes such as construction of a sandbox, raised gardening bed, or similar landscaping feature;
 - (B) The fill does not occupy an area that is greater than 500 square feet or 10 percent of the area of the subject parcel that is within the floodway fringe, whichever is less; and
 - (C) The average depth of the fill does not exceed six inches over the area described in subsection (B) above.
 - (c) Maintenance, repair, and/or replacement of existing electrical, heating, ventilation, plumbing, air-conditioning equipment, and other service facilities provided the facilities:
 - (A) Are in-kind maintenance, repair, and/or replacement;
 - (B) Do not constitute a substantial improvement or repair of substantial damage, as defined in BCC 83.020; and
 - (d) Maintenance, minor repair, and/or improvement of existing structures, provided these activities do not:
 - (A) Result in an increase in size or intensity of use; or
 - (B) Constitute substantial improvement or repair of substantial damage, as defined in BCC 83.020.
 - (e) Short-term storage of equipment or materials. Short-term storage means storage occurring outside of flood season or for a period of not more than 180 days during any portion of flood season. Equipment or materials stored during flood season shall be able to be either be easily removed from the area, or shall be items that would not cause harm to property, humans, animals or the environment by becoming buoyant or hazardous.
 - (f) Public agency placement of signs, markers, aids, etc.; and
 - (g) Customary dredging associated with routine ditch maintenance to maintain existing ditch capacity, provided it is consistent with State and Federal laws and permits.
 - (h) Replacement of utility facilities that are necessary to serve established and permitted uses, and that are of equal or lesser size and impact.
 - (i) Transportation facility rehabilitation and maintenance projects that will not result in modifications to existing topography.
 - (j) Subsurface public utility projects that will not ultimately result in modification to existing topography.

INTERPRETATION OF FLOODPLAIN BOUNDARIES & USE OF OTHER BASE FLOOD ELEVATION DATA

83.300 Interpretation of Floodplain Boundaries.

- (1) If it is uncertain whether any proposed development described in BCC 83.250(1) is located in the floodplain (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), the Floodplain Administrator shall determine the applicability of floodplain regulations to the site in question based on the adopted Flood Insurance Rate Maps and any additional relevant data.
- (2) 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 or Letter of Map Revision approved by the Federal Insurance Administrator for the site in question.

83.310 Use of Other Base Flood Elevation Data.

- (1) For special flood hazard areas (such as Zone A) where base flood elevations have not been provided in accordance with section BCC 83.110:
 - (a) 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 the provisions of this chapter.
 - (b) Development proposals 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, etc. where available.
 - (c) The applicant shall be responsible for providing sufficient information to the Floodplain Administrator to document:
 - (A) The base flood elevation and, if applicable, the floodway for the proposed project site; or
 - (B) That the entire proposed project site has been removed from the special flood hazard area through submission of an approved Letter of Map Amendment or Letter of Map Revision.
 - (d) All authorized structural development occurring in special flood hazard areas where base flood elevations have not been developed shall be elevated consistent with the elevation standards for such structures in Zone AE special flood hazard areas. It is the applicant's responsibility to submit elevation documentation in accordance with section BCC 83.260 that accurately identifies the base flood elevation for the proposed site.
 - (e) All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) must meet the requirements of section BCC 83.520(1).
 - (f) The applicant shall derive base flood elevation data in accordance with standard engineering and FEMA practices for floodplain mapping and modeling to ensure alignment with "The Flood Insurance Study for Benton County, Oregon and Incorporated Areas". The County Engineer and the Federal Emergency Management Agency may provide technical assistance. The applicant shall provide for certification by an Oregon-licensed professional engineer or architect that the proposed development complies with provisions of this section.

VARIANCES

83.400 Variance Procedure. The issuance of a variance to the requirements of this chapter is for floodplain management purposes only and may be granted pursuant to either BCC 83.410 or BCC 83.420, and subject to the notification requirement of BCC 83.430. Flood insurance premium rates are determined by federal statute according to actuarial risk and will not be modified by the granting of a variance.

83.410 Minor Variance for Agricultural Structures. A minor variance from elevation and floodproofing standards may be granted in limited circumstances for agricultural structures by means of a ministerial review, pursuant to subsections (1) through (5) below. In this section only, an “agricultural structure” is determined not by the definition in BCC 83.020 but instead by the provisions of subsection (3) below.

- (1) Establishment of new agricultural structures within a floodway is prohibited per section BCC 83.810(2); therefore, a variance shall not be issued for siting a new agricultural structure within any mapped regulatory floodway.
- (2) A variance shall not be issued for replacement or substantial improvement of an agricultural structure within any floodway if any increase in flood levels during the base flood discharge would result.
- (3) A variance for siting a new or replacement agricultural structure, or for substantial improvement of an existing agricultural structure, may be authorized pursuant to the following standards:
 - (a) The structure shall be a structure that requires a building permit.
 - (b) The structure will be a free-standing, detached structure.
 - (c) The structure will be used exclusively for agricultural purposes or uses in connection with the production, harvesting, storage, raising, or drying of agricultural commodities and livestock. For clarification:
 - (A) Structures that house tools or equipment used in connection with these purposes or uses are also considered to have agricultural purposes or uses.
 - (B) Because agriculture is an industry and therefore farms are places of work, it is understood that entry into agricultural structures is necessary. The limitation that an agricultural structure be “used exclusively for agricultural purposes or uses” is satisfied when the principal use of an agricultural structure does not include occupation by people over extended periods of time (e.g., office or communal area for farm workers).
 - (C) For the purposes of this standard, the term “agricultural commodities” means agricultural goods, products, commodities, and livestock. Examples of agricultural commodities include, but are not limited to, harvested crops, aquaculture products, livestock, and animal products.
 - (d) No portion of the structure will be used for human habitation and or as a place of employment or entertainment. For clarification:
 - (A) Agricultural structures with multiple or mixed purposes, are not considered to be used exclusively for agricultural purposes and are, therefore, not agricultural structures for the purposes of this standard.
 - (B) Human habitation, such as a permanent or temporary residence or seasonal living quarters for workers, is not considered an agricultural purpose or use.
 - (C) Processing and production of agricultural commodities (outside of harvesting, storage, raising, or drying) are not considered agricultural purposes or uses.
 - (D) Examples of activities not considered to be exclusively for agricultural purposes or uses include activities such as distilling, brewing or fermenting beverages, baking or cooking, leather tanning, packaging, and similar production processes. Structures used for these types of processes are considered places of employment and are not eligible for a minor variance for an agricultural structure.
- (4) The applicant shall submit the following items along with an application form and fee:
 - (a) Although Benton County cannot require flood insurance, the applicant shall submit a signature from a licensed insurance professional verifying the applicant has discussed flood insurance

options and potential requirements for the proposed agricultural structure if a flood insurance policy were to be purchased for the structure;

- (b) Acknowledgement by the property owner that structure will be built with the lowest floor below the Base Flood Elevation, the structure will be wet flood-proofed, and that the contents of the structure might not be insurable against flood loss;
 - (c) Building plans showing:
 - (A) Flood-specific venting designed to equalize hydrostatic flood forces on exterior walls and comply with the requirements for flood-specific venting in BCC 83.660;
 - (B) Flood damage-resistant construction materials for all portions of the structure that are below the Base Flood Elevation. Standards for flood damage-resistant construction materials are found in FEMA Technical Bulletin 2, Flood Damage- Resistant Materials Requirements for Buildings Located in special flood hazard areas in accordance with the National Flood Insurance Program (or successor document); and
 - (C) All electrical, heating, ventilation, plumbing, air-conditioning equipment and other service facilities shall be elevated in accordance with BCC 83.500(6);
 - (d) A pre-construction elevation certificate specific to proposed building site; and
 - (e) A site plan of the property clearly identifying the proposed building location.
- (5) Upon satisfactory completion of the items listed in subsections (3) and (4) above, the minor variance will be granted ministerially in conjunction with the issuance of the building permit and the owner shall sign the following declaratory statement to be recorded, along with a plot plan identifying the structure location and the dimensions of 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. Construction of an agricultural structure to be used only for agricultural use 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 83.020, 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, which may require elevation of the structure, from Benton County to convert the occupancy.

This statement further serves as notice to the owner and successors in interest that this structure, regardless of size, may be required to be insured against flood loss and that contents of the structure may not be insurable against flood loss except as provided by the insurer.

83.420 Discretionary Variance. In cases other than those listed in BCC 83.410, a variance may be granted pursuant to the standard variance procedure and criteria specified in Chapter 53 and the provisions of this section.

- (1) 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 elevation, in conformance with the provisions of sections BCC 83.420(3) and (5), and BCC 83.430. As the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases.
- (2) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

- (3) Variances shall not be issued within any floodway if any increase in flood levels during the base flood discharge would result.
- (4) Variances shall only be issued upon:
 - (a) A showing of good and sufficient cause;
 - (b) A determination that failure to grant the variance would result in exceptional hardship to the applicant;
 - (c) 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.
- (5) 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 section BCC 83.420(2) through (4) 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.
- (6) Upon consideration of the factors of subsections (1) through (5) above 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. Conditions of approval may be imposed to reduce or mitigate flood hazard conditions or to otherwise ensure compliance with the purpose and provisions of this chapter and may address, but are not limited to:
 - (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 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.

83.430 Variance Notification.

- (1) Any applicant to whom a variance from the elevation standard is granted shall be given written notice that:
 - (a) The issuance of a variance to construct a structure with the lowest floor below the Base Flood Elevation will result in increased premium rates for flood insurance; and
 - (b) Such construction below the base flood elevation increases risks to life and property.

- (2) Such notification and a record of all variance actions, including justification for their issuance shall be maintained in accordance with BCC 83.260.

PROVISIONS FOR FLOOD HAZARD REDUCTION

83.500 General Floodplain Development Standards.

The following standards shall apply in all special flood hazard areas:

- (1) Alteration of Watercourses. The flood carrying capacity within the altered or relocated portion of a watercourse shall be maintained pursuant to the standards identified in section BCC 83.230(2).
- (2) Structures Located In Multiple Or Partial Flood Zones. In coordination with the State of Oregon Specialty Codes:
 - (a) 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.
 - (b) 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.
- (3) CRITICAL FACILITIES. Construction of new critical facilities shall be, to the extent possible, 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. 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 the extent possible, to or above the level of the BFE shall be provided to all critical facilities.
- (4) ANCHORING
 - (a) 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.
 - (b) All manufactured dwellings shall be anchored per BCC 83.620(4).
- (5) CONSTRUCTION MATERIALS AND METHODS. All new construction and substantial improvements shall be constructed:
 - (a) With materials and utility equipment resistant to flood damage; and
 - (b) Using methods and practices that minimize flood damage.
- (6) UTILITIES AND EQUIPMENT
 - (a) Electrical, Mechanical, Plumbing, And Other Equipment shall comply with the following:
 - (A) All new electrical, heating, ventilation, air-conditioning, plumbing, duct systems, and other equipment and service facilities shall be elevated a minimum of one (1) foot above the Base Flood Elevation (BFE).
 - (B) All electrical, heating, ventilation, air-conditioning, plumbing, duct systems, and other equipment and service facilities that are installed or replaced as part of a substantial improvement shall be elevated a minimum of one (1) foot above the Base Flood Elevation (BFE).
 - (b) Exceptions are allowed for the following situations:
 - (A) Electrical, heating, ventilation, air-conditioning, plumbing, duct systems, and other equipment and service facilities serving a structure constructed prior to August 5,

1986, and not substantially improved since that date, and not part of a current substantial improvement, may be installed at the same elevation as the top of the lowest habitable floor. (A basement shall not be considered a habitable floor for this purposes of this exception.)

Note: It is still strongly recommended that all such items be elevated a minimum of one (1) foot above the BFE whenever possible.

- (B) Electrical systems, equipment and components; heating, ventilation, and air-conditioning; plumbing appliances and plumbing fixtures; duct systems; and other service equipment that are specially 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 the occurrence of flooding to an elevation that is at least one (1) foot above the BFE.
- (7) Water supply, sanitary sewer, and on-site waste disposal systems shall comply with the following:
- (a) All new and replacement water supply and sanitary sewer systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the systems into floodwaters.
 - (b) On-site wastewater treatment systems shall be located outside of the special flood hazard area (SFHA) on properties where land outside the SFHA is comparable to or better than land located within the SFHA with regard to soil conditions, topography, and unencumbered area in accordance with the Oregon Department of Environmental Quality rules
 - (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.
- (8) TANKS
- (a) Underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood.
 - (b) Above-ground tanks shall be installed a minimum of one (1) foot above the Base Flood Elevation (BFE) or shall be anchored to prevent flotation, collapse, and lateral movement under conditions of the base flood.

83.520 Land Division and Property Line Adjustments.

- (1) MAJOR DEVELOPMENT PROPOSALS
- (a) 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.
 - (b) 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 if it exceeds five (5) acres. Such data shall be derived in accordance with standard engineering and FEMA practices for floodplain

mapping and modeling to ensure alignment with "The Flood Insurance Study for Benton County, Oregon and Incorporated Areas".

(c) Subdivisions shall also be subject to the provisions of BCC 83.520(2).

(2) **PARCEL AND LOT DESIGN STANDARDS.** 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.

(a) 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.

(b) For each lot or parcel, other than those designated for non-residential use (such as a parcel in a resource zone and containing no dwelling right), open space use, or designated as otherwise unbuildable, the applicant shall:

(A) Demonstrate a proposed building site for the primary structure that is:

(i) Located entirely outside the floodplain;

(ii) At least 10,000 square feet in size; and

(iii) No less than 50 feet in any dimension.

(B) Sign for recording a deed restriction acknowledging that the primary structure must be sited outside the floodplain.

(c) For each parcel or lot designated for non-residential use (such as a parcel in a resource zone and containing no dwelling right), open space use, or designated as otherwise unbuildable, the applicant shall either:

(A) Comply with the standards of subsection (b); or

(B) Sign for recording a deed restriction acknowledging that any primary structure established on the parcel or lot must be sited on land that is outside the floodplain.

(d) Site feasibility approval areas for on-site wastewater treatment systems shall be located outside of the floodplain to the extent possible and in accordance with the Oregon Department of Environmental Quality rules. In no instance shall a site feasibility approval area for initial and repair systems reduce the area identified for compliance with subsection (b) or subsection (c) to less than 5,000 square feet and 40 feet in any dimension; in such case a different location for on-site wastewater disposal shall gain approval or the area designated for the building site shall be modified to meet these minimums.

(e) The applicant shall submit a profile identifying the existing natural grade and the Base Flood Elevations (BFE) along the entire length of the proposed access route(s), from the right-of-way to the proposed building site identified for subsection (b) or subsection (c), for each resultant parcel or lot. The profile shall be prepared by an Oregon-registered Professional Land Surveyor or an Oregon-licensed Civil Engineer and submitted with the application for land division.

(A) If any portion of the existing natural grade of the proposed access route(s) is lower than the BFE:

(i) The property owner shall sign for recording a deed restriction acknowledging that during a flood event the ability to evacuate the property or for emergency vehicles to obtain access to the property to provide emergency services may be prevented or made hazardous.

(ii) The property owner is encouraged to provide a copy of the profile to the local

fire district and discuss the potential for impaired access and emergency services during flood conditions.

- (f) If more than one covenant is required for compliance with the subsections above or if a covenant is required for more than one resultant parcel or lot, each covenant shall be recorded as a separate document.

CONSTRUCTION STANDARDS

83.600 Specific Construction Standards for Flood Zones.

The specific standards in BCC 83.610 through BCC 83.680 shall apply to all new construction and substantial improvements in Zones A, AE, AH, and A1-A30, in addition to the General Standards contained in BCC 83.500 through BCC 83.520 of this ordinance.

83.610 Non-residential Construction.

- (1) New or expanded primary commercial, industrial, and other non-residential 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 83.620(3).
- (2) Where allowed, new construction, conversion to, and substantial improvement of any commercial, industrial, or other non-residential structure, other than agricultural structures, shall either:
 - (a) Have the lowest floor, including basement, elevated a minimum of 18 inches above the Base Flood Elevation (BFE); or,
 - (b) Together with attendant utility and sanitary facilities:
 - (A) Be floodproofed so that below the base flood elevation the structure is watertight with walls substantially impermeable to the passage of water;
 - (B) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
 - (C) Be certified by a registered professional engineer or architect that the 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 BCC 83.260.
 - (c) Non-residential structures that are elevated, not floodproofed, and have an enclosed area below the lowest floor shall comply with the standards for enclosed areas in section BCC 83.660.
 - (d) An applicant choosing to floodproof a non-residential structure pursuant to the standards of this section shall be notified in writing that flood insurance premiums may be based on rates that are one (1) foot below the floodproofed level (e.g. a building floodproofed to the base flood elevation will be rated as one (1) foot below that level).

83.620 Residential Construction.

- (1) Where allowed, new construction, conversion to, and substantial improvement of any residential structure (as defined in BCC 83.020) shall have the lowest floor, including basement, elevated a minimum of 18 inches above the Base Flood Elevation (BFE).
- (2) Where allowed, enclosed areas below the lowest floor shall be constructed with flood-specific venting (as defined in BCC 83.020) that complies with BCC 83.660.
- (3) New dwellings, expansion of existing dwellings, and placement of manufactured dwellings are prohibited within the floodplain, with the following exceptions:

- (a) New dwellings on vacant land (as defined in BCC 83.020) may be allowed 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. The Planning Official may then allow a building site located partially or fully within the floodplain.
 - (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) Additions to existing dwellings 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 a lateral addition elevated on flow-through construction).
- (c) Replacement of an existing dwelling may be allowed:
 - (A) Within the building footprint of the dwelling being replaced;
 - (B) With a maximum 10% expansion or shift of the building footprint of the dwelling being replaced;
 - (C) With a maximum 10% expansion located elsewhere on the site, if through an Administrative Review the Planning Official determines that the relocation of the dwelling 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 as defined in BCC 83.020;
 - (ii) Moves the dwelling to a higher ground elevation;
 - (iii) Moves the dwelling 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” ; or
 - (D) With a greater than 10% expansion or shift of the building footprint of the dwelling being replaced if:
 - (i) The dwelling will be constructed with flow-through construction as defined in BCC 83.020;
 - (ii) The dwelling will be no closer to the top of bank of the adjacent water course than the existing structure; and

- (iii) The expansion or shift of the building footprint 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".

(4) **MANUFACTURED DWELLINGS.** In addition to the standards of subsections (1) through (3) above, the following shall apply to all new and replacement manufactured dwellings, as well as substantially improved manufactured dwellings:

- (a) The bottom of the longitudinal chassis frame beam shall be elevated to or above the Base Flood Elevation (BFE);
- (b) Such dwelling 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
- (c) Electrical crossover connections shall be elevated a minimum of one (1) foot above the Base Flood Elevation (BFE).

83.630 Recreational Vehicles.

- (1) A recreational vehicle placed within the A, AE, AH, and A1-30 Flood Zones shall:
 - (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, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached addition; or
 - (c) Meet the requirements of BCC 83.620, including requirements for anchoring and elevation, for manufactured dwellings.

83.640 Garages.

- (1) 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:
 - (a) Garages located partially or entirely within the floodway must comply with the requirements of BCC 83.810;
 - (b) The garage is used solely for parking, building access, and/or storage;
 - (c) The garage floor elevation is at or above grade along the length of at least one side;
 - (d) The garage is constructed with flood-specific venting (as defined in section BCC 83.020) in compliance with BCC 83.660 to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters;
 - (e) The portions of the garage constructed below the BFE are constructed with materials resistant to flood damage as defined in FEMA technical guidance documentation;
 - (f) The garage is constructed in compliance with the provisions of BCC 83.500(4) and (5); and
 - (g) The garage is constructed with electrical, mechanical, and other service facilities located and installed consistent with the provisions of BCC 83.500(6).
- (2) Detached garages shall be constructed in compliance with the standards for accessory structures in BCC 83.650 or non-residential structures in BCC 83.610, depending on the square footage of the garage.

83.650 Accessory Structures.

- (1) Accessory structures located partially or entirely within the floodway must comply with the requirements of BCC 83.810.
- (2) Where allowed, new construction, conversion to, and substantial improvement of any accessory structure shall have the lowest floor, including basement, elevated a minimum of 18 inches above the Base Flood Elevation (BFE).
- (3) Where allowed, enclosed areas below the lowest floor shall be constructed with flood-specific venting (as defined in section BCC 83.020) that complies with section BCC 83.660.
- (4) Relief from elevation requirements of subsection (2) above may be granted for accessory structures that meet all of the following requirements:
 - (a) Shall be located on the same parcel or lot as a principal structure;
 - (b) Shall only be used for parking, access, and/or storage and shall not have any portion of the structure used for human habitation;
 - (c) Shall be limited to one-story with a maximum building footprint of 600 square feet;
 - (d) The portions of the accessory structure located below the Base Flood Elevation shall be built using flood resistant materials;
 - (e) Shall 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) Shall be designed and constructed to equalize hydrostatic flood forces on exterior walls and comply with the requirements for flood-specific venting in BCC 83.660;
 - (g) Shall be located and constructed to have low damage potential;
 - (h) 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 in compliance with BCC 83.500(8); and
 - (i) Shall be constructed with electrical, mechanical, and other service facilities located and installed consistent with the provisions of BCC 83.500(8).
- (5) For any accessory structure relief granted under subsection (4) above, 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. Construction of the _____ [specify type of accessory structure, i.e. detached garage, storage shed] to be used only for _____ [specify type of use, i.e. parking, access, 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 83.020, 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, which may require elevation of the structure, from Benton County to convert the occupancy.

This statement further serves as notice to the owner and successors in interest that this structure, regardless of size, may be required to be insured against flood loss and that contents of the structure may not be insurable against flood loss except as provided by the insurer.

83.660 Enclosed Areas Below a Structure.

- (1) Fully enclosed areas below the lowest floor (excluding basements) of new and substantially improved structures in the Floodplain Management Overlay Zone are prohibited, or shall be designed to comply with the following requirements:
 - (a) Designed to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters;
 - (b) Used solely for parking, storage, or building access;
 - (c) Contain openings that meet or exceed the definition of flood-specific venting identified in section BCC 83.020, or are certified by an Oregon-registered professional engineer or architect; and
 - (d) Comply with 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.

83.670 Below-grade Crawlspace.

- (1) 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 flood 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 flood-specific venting (as that term is defined in BCC 83.020) that are compliant with BCC 83.660 that equalize hydrostatic pressures by allowing the automatic entry and exit of floodwaters. The bottom of each flood-specific 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. Additionally, the height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the lowest habitable floor shall not exceed five (5) feet at any point.

- (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.

83.680 Standards for Shallow Flooding Areas.

- (1) Shallow flooding areas appear on FIRMs as AH zones with Base Flood Elevations. For AH zones, adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures.
- (2) Development within AH Zones must comply with the standards in sections 5.1, 5.2, and 5.2.5.

CORVALLIS URBAN FRINGE

83.700 Additional Standards in the 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) Any proposed alteration or relocation of a watercourse within the Corvallis Urban Fringe shall comply with the standards identified in BCC 83.230(2).
- (2) 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 floodwaters flows and shall not create barriers to the flow of floodwaters. 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.
- (3) 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 83.700(3)(b).
 - (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 all applicable mandatory construction standards. 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 all applicable mandatory construction standards.

- (i) Replacement of an existing structure may be allowed pursuant to BCC 83.620(3).
- (ii) Additions to an existing structure may be allowed pursuant to BCC 83.620(3).
- (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).

FLOODWAYS

83.800 Regulatory Floodway Not Mapped.

- (1) 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 AE and A1-30 on the Benton County Flood Insurance Rate Map (FIRM), unless it is demonstrated by the applicant 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.

- (2) Encroachments that would result in an increase of more than one (1) foot in base flood elevations for projects in areas that do not have a mapped floodway may be authorized provided that the applicant:
 - (a) Receives approval for a Conditional Letter of Map Revision (CLOMR) from the Federal Insurance Administrator for the proposed encroachment which ensures that the requirements for such revision, as established under Volume 44 of the Code of Federal Regulations, section 65.12, are fulfilled; and
 - (b) Submits the approved CLOMR to the Floodplain Administrator.

83.810 Mapped Regulatory Floodway. Floodways are extremely hazardous areas due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential; therefore, if any portion of the proposed development is located in a designated floodway, the following provisions apply.

- (1) Encroachments which include fill, new construction, substantial improvements and other development within the adopted regulatory floodway are prohibited unless certification by an Oregon-licensed Civil Engineer is provided demonstrating, through hydrologic and hydraulic analyses performed in accordance with standard engineering practice, that the proposed encroachment will not result in any increase in flood levels within the community during the occurrence of the base flood discharge.
- (2) Agricultural structures and structures accessory to a dwelling are prohibited within the adopted regulatory floodway.
- (3) Within a floodway in the Corvallis Urban Growth Boundary as described in BCC 83.110(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 an Oregon-licensed professional engineer, that the permitted development will not result in any increase in flood levels during the occurrence of the base flood discharge.
- (4) Encroachments (for development of land outside of the Corvallis Urban Growth Boundary) within the adopted regulatory floodway that would result in an increase in base flood elevations for projects in a mapped floodway may be authorized provided that the applicant:
 - (a) Receives approval for a Conditional Letter of Map Revision (CLOMR) from the Federal Insurance Administrator for the proposed encroachment which ensures that the requirements for such revision, as established under Volume 44 of the Code of Federal Regulations, section 65.12, are fulfilled; and
 - (b) Submits the approved CLOMR to the Floodplain Administrator.
- (5) If all of the above applicable requirements are satisfied, all new construction, substantial improvements, and other development shall also comply with all other applicable provisions of this chapter.
- (6) New and replacement fences and free-standing walls (as identified in the table below) may be allowed within the adopted regulatory floodway as follows:
 - (a) Construction Types A and B may be allowed without a no-rise analysis.
 - (b) Construction Type C may be allowed without a no-rise analysis and upon submission of engineering calculations demonstrating that it will collapse under anticipated base flood conditions.
 - (c) Construction Types D through H may be allowed upon submission of a no-rise analysis, prepared using FEMA-approved engineering and modeling standards, documenting that the

proposed fence or free-standing wall will not create an increase to the Base Flood Elevation.

Fencing Construction Types	
Construction Type	Description
A	Open barb or barb less wire. Open means no more than one horizontal strand per foot of height.
B	Open pipe or rail fencing (e.g. corrals). Open means rails occupy less than 10% of the fence area and posts are spaced no closer than 8 feet apart.
C	Collapsible fencing that will collapse under anticipated base flood conditions. Debris impact must be considered.
D	Other wire, pipe, or mil fencing (e.g. field fence, chicken wire, etc.) which does not meet open requirements above.
E	Chain link fencing
F	Continuous wood fencing
G	Masonry walls
H	Retaining walls, bulkheads

Note: Wire fences within the floodway 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.

