

**PART 5: OVERLAYS****5.A – FLOOD HAZARD OVERLAY (FH)****§ 39.5000- PURPOSES.**

The purposes of the Flood Hazard Overlay, MCC 39.5000 through MCC 39.5055 (FH), are to promote the public health, safety and general welfare, ~~and~~ to minimize public and private losses due to flood conditions in specific areas, ~~and~~ to allow property owners within unincorporated Multnomah County to participate in the National Flood Insurance Program, and to comply with Metro Title 3 Requirements.

**§ 39.5005 DEFINITIONS.**

For purposes of MCC 39.5000 through MCC 39.5055, the following terms and their derivations shall have the meanings provided below:

**Alteration** – To modify, change or make different.

**Areas of Special Flood Hazard** – ~~All rural and urban unincorporated lands contained within the 100-year flood boundary as identified on the Flood Boundary and Floodway Maps and the Flood Insurance Rate Maps (FIRM) as published by the Federal Emergency Management Agency (FEMA), and the area of inundation for the February, 1996 flood when located outside of the flood areas identified on the Flood Insurance Rate Maps within the Metro Jurisdictional Boundary.~~

The land in the floodplain within a community subject to a 1 percent or greater chance of flooding in any given year, and the area of inundation for the February, 1996 flood when located outside of the flood areas identified on the Flood Insurance Rate Maps within the Metro Jurisdictional Boundary. The area may be designated as Zone A on the flood Hazard Boundary Map (FHBM). After detailed ratemaking has been completed in preparation for publication of the Flood Insurance Rate Map, Zone A usually is refined into Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE,

AR/AO, AR/AH, AR/A, VO, or V1-30, VE, or V. For purposes of these regulations, the term "special flood hazard area" is synonymous in meaning with the phrase "area of special flood hazard".

The Areas of Special Flood Hazard identified by the Federal Insurance Administration in the scientific and engineering report entitled "Flood Insurance Study Multnomah County Oregon and Incorporated Areas", dated February 1, 2019 with accompanying Flood Insurance Rate Maps (FIRM) ~~effective December 18th, 2009~~ identified in Table 1 below, are hereby adopted by reference for the ~~rural and~~ unincorporated portions of Multnomah County. Maps produced by the Metro Data Regional Center that identify the area of inundation for the February 1996 flood are also adopted by reference. The Flood Insurance Study is on file at the Multnomah County Planning Office. The best available information for flood hazard area identification as outlined in MCC 39.5040 shall be the basis for regulation until a new FIRM is issued.

These maps may be periodically revised or modified by FEMA in accordance with prescribed procedures pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 92-234). In order to employ the best available information and maintain compliance with Federal Flood Insurance Program regulations, Multnomah County shall adopt any such revisions or modifications. Watercourses and areas of Special Flood Hazard located within the Columbia River Gorge National Scenic Area are subject to the standards in this subpart.

(TABLE 1 – FLOOD INSURANCE RATE MAPS MULTNOMAH COUNTY OREGON)

<u><b>FIRM Map Panel</b></u>	<u><b>Effective Date of Latest Map Revision</b></u>
<u>41051C1ND0A (map index)</u>	<u>December 18, 2009</u>
<u>41051C0030H (panel 30 of 550)</u>	<u>December 18, 2009</u>
<u>41051C0035H (panel 35 of 550)</u>	<u>December 18, 2009</u>
<u>41051C0040H</u>	<u>December 18, 2009</u>

<u>FIRM Map Panel</u>	<u>Effective Date of Latest Map Revision</u>
(panel 40 of 550)	
<u>41051C0045H</u> (panel 45 of 550)	<u>December 18, 2009</u>
<u>41051C0065H</u> (panel 65 of 550)	<u>December 18, 2009</u>
<u>41051C0100H</u> (panel 100 of 550)	<u>December 18, 2009</u>
<u>41051C0130H</u> (panel 130 of 550)	<u>December 18, 2009</u>
<u>41051C0135H</u> (panel 135 of 550)	<u>December 18, 2009</u>
<u>41051C0155H</u> (panel 155 of 550)	<u>December 18, 2009</u>
<u>41051C0180H</u> (panel 180 of 550)	<u>December 18, 2009</u>
<u>41051C0185H</u> (panel 185 of 550)	<u>December 18, 2009</u>
<u>41051C0205H</u> (panel 205 of 550)	<u>December 18, 2009</u>
<u>41051C0210J</u> (panel 210 of 550)	<u>February 1, 2019</u>
<u>41051C0211H</u> (panel 211 of 550)	<u>December 18, 2009</u>
<u>41051C0212H</u> (panel 212 of 550)	<u>December 18, 2009</u>
<u>41051C0214J</u> (panel 214 of 550)	<u>February 1, 2019</u>
<u>41051C0216J</u> (panel 216 of 550)	<u>February 1, 2019</u>
<u>41051C0217J</u> (panel 217 of 550)	<u>February 1, 2019</u>
<u>41051C0218J</u> (panel 218 of 550)	<u>February 1, 2019</u>
<u>41051C0219J</u> (panel 219 of 550)	<u>February 1, 2019</u>
<u>41051C0228J</u> (panel 228 of 550)	<u>February 1, 2019</u>
<u>41051C0238J</u> (panel 238 of 550)	<u>February 1, 2019</u>
<u>41051C0240J</u> (panel 240 of 550)	<u>February 1, 2019</u>
<u>41051C0245J</u> (panel 245 of 550)	<u>February 1, 2019</u>
<u>41051C0275H</u> (panel 275 of 550)	<u>December 18, 2009</u>
<u>41051C0300H</u> (panel 300 of 550)	<u>December 18, 2009</u>

<u>FIRM Map Panel</u>	<u>Effective Date of Latest Map Revision</u>
<u>41051C0325H</u> (panel 325 of 550)	<u>December 18, 2009</u>
<u>41051C0360H</u> (panel 360 of 550)	<u>December 18, 2009</u>
<u>41051C0367H</u> (panel 367 of 550)	<u>December 18, 2009</u>
<u>41051C0401J</u> (panel 401 of 550)	<u>February 1, 2019</u>
<u>41051C0402J</u> (panel 402 of 550)	<u>February 1, 2019</u>
<u>41051C0403J</u> (panel 403 of 550)	<u>February 1, 2019</u>
<u>41051C0404J</u> (panel 404 of 550)	<u>February 1, 2019</u>
<u>41051C0406J</u> (panel 406 of 550)	<u>February 1, 2019</u>
<u>41051C0407J</u> (panel 407 of 550)	<u>February 1, 2019</u>
<u>41051C0408J</u> (panel 408 of 550)	<u>February 1, 2019</u>
<u>41051C0409J</u> (panel 409 of 550)	<u>February 1, 2019</u>
<u>41051C0426J</u> (panel 426 of 550)	<u>February 1, 2019</u>
<u>41051C0427J</u> (panel 427 of 550)	<u>February 1, 2019</u>
<u>41051C0428J</u> (panel 428 of 550)	<u>February 1, 2019</u>
<u>41051C0429H</u> (panel 429 of 550)	<u>December 18, 2009</u>
<u>41051C0435J</u> (panel 435 of 550)	<u>February 1, 2019</u>

**Base Flood** – The flood having a one percent chance of being equaled or exceeded in any given year. Also referred to as the “100-year flood.” Designation on the FIRM maps always includes the letter A to identify a zone of specified risk. (Zone A is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the Flood Insurance Study by approximate methods of analysis).

**Base Flood Elevation** - The computed elevation to which floodwater is anticipated to rise during

the base flood. Base Flood Elevations (BFEs) are shown on Flood Insurance Rate Maps (FIRMs) and on the flood profiles.

The BFE is the regulatory requirement for the elevation or floodproofing of structures. The relationship between the BFE and a structure's elevation determines the flood insurance premium.

**Basement** – Any area of the building having its floor sub grade (below ground level) on all sides.

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

**Community** – Any State or area or political subdivision thereof, or any Indian tribe or authorized tribal organization which has authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction.

**Critical Facility** – A facility for which even a slight chance of flooding ~~might be~~ is too great ~~a~~ threat. 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.

**Design Flood Elevation** – The elevation of the base flood elevation, or in areas without maps, the elevation of the 25-year storm, or the edge of mapped flood prone soils or similar methodologies.

**Digital Flood Insurance Rate Map (DFIRM)** – See FIRM

**Development** – Any human-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving,

excavation or drilling operations or storage of equipment or materials ~~located within the areas shown within 100-year flood boundary as identified on the Flood Boundary and Floodway Maps and the Flood Insurance Rate Maps as published by the Federal Emergency Management Agency (FEMA) or within any water course.~~

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

**Elevation Certificate** – The document used to certify the FIRM Zone and base flood elevation of the development area of a property, and to determine the required elevation or floodproofing requirements of new and substantially improved structures.

**Encroachment** – To fill, construct, improve, or develop beyond the original bank line of the watercourse. Bank stabilization or restoration of a watercourse which does not protrude beyond the original banks line and does not protrude above the topography at the time the Flood Insurance Rate Map was developed is not considered an encroachment.

### **Flood or Flooding -**

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

(1) The overflow of inland or tidal waters.

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

(3) Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (a)(2) 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 paragraph (a)(1) of this definition.

**Flood Hazard Boundary Map (FHBM) – An official map of a community, issued by the Federal Insurance Administrator, where the boundaries of the flood, mudslide (i.e., mudflow) related erosion areas having special hazards have been designated as Zones A, M and/or E.**

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

**Flood Insurance Study (FIS)– The official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Boundary Floodway Map, and the water surface elevation of the base flood. 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.**

**Floodproofing Certificate** – Documentation of certification by an Oregon registered professional engineer or architect that the design and methods of construction of a non-residential building are in accordance with accepted practices for meeting the floodproofing requirements of this subpart subchapter.

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

**Highest Adjacent Grade - The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.**

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

**Manufactured Home** – 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 home” does not include a “recreational vehicle.” A “manufactured home” may also be referred to as a “manufactured dwelling” per State of Oregon Manufactured Dwelling Installation Specialty Code.

**New Construction** – Structures for which the “start of construction” commenced on or after the effective date of this ordinance (Ordinance 1120, effective on September 11, 2008). of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

**Recreational Vehicle** – A vehicle which is built on a single chassis, 400 square feet or less when measured at the largest horizontal projection, self-propelled or permanently towable by a light duty truck and designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

**Special Flood Hazard Area** – See Areas of Special Flood Hazard

**Start of Construction** – Includes substantial improvement to existing structures, and means the ~~The~~ date the building permit was issued, provided the actual start of construction, repair,

reconstruction, placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured dwelling home on a foundation. Permanent construction does not include the land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement to an existing structure, 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. May also be referred to as a manufactured dwelling.

**State Building Code** – ~~Means the~~ The combined Oregon specialty codes.

**Structure** – A walled and/or roofed building including a gas or liquid storage tank that is principally above ground, ~~as well as a~~ manufactured dwelling. A building with only one wall and no roof or a building with no walls and a roof, for example, is considered a structure.

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

**Substantial Improvement** – ~~Any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:~~

~~(1) Before the improvement or repair is started; or~~

~~(2) If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition substantial improvement is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The costs to repair must be calculated for full repair to "before damage" condition, even if the owner elects to do less. The total costs to repair include both structural and finish materials and labor including donated labor and materials.~~

~~(3) The value of these alterations to an existing structure is measured cumulatively to avoid exempting a substantial improvement implemented in phases over time.~~

~~(4) Substantial Improvement does not, however, include either:~~

~~(a) The portion of 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 local building officials and which are the minimum necessary to assure safe living conditions; or~~

~~(b) Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.~~

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



(1) 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

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

**Watercourse** – A channel in which a flow of water occurs, either continuously or intermittently with some degree of regularity. Watercourses may be either natural or artificial. Watercourse includes a river, stream, creek, slough, ditch, canal, or drainageway.

#### **§ 39.5010 AREAS AFFECTED.**

The provisions of MCC 39.5000 through 39.5055 shall apply to all areas of special flood hazard, as defined by MCC 39.5005. The provisions of MCC 39.5045 shall also apply to any relocation, encroachment or alteration of a watercourse.

Multnomah County shall make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards including where there appears to be a conflict between a mapped boundary and actual field conditions.

A person contesting the location of the boundary of the area of special flood hazard may apply for a Type II Administrative Decision by the Planning Director under MCC 39.1225, which can be appealed to a Hearings Officer.

#### **§ 39.5015 PERMITS.**

(A) No structure, dwelling or manufactured ~~dwelling home~~ shall be erected, located, altered, improved, repaired or enlarged and no other new development including but not limited to grading, mining, excavation and filling (see "Development" under MCC 39.5005) shall

occur in areas of special flood hazard unless a Floodplain Development Permit specifically authorizing the proposal has been obtained from Multnomah County. Variances to the Flood Hazard regulations are not allowed.

(1) Improvements to a structure, dwelling or ~~mobile home~~ manufactured dwelling or other development, which do not meet the definition of "Development" under MCC 39.5005, are exempted from obtaining a Floodplain Development Permit.

(B) Alterations, modifications or relocations to any watercourse as defined in MCC 39.5005 are subject to a Floodplain Development permit and the Watercourse Relocation and Alteration standards of MCC 39.5045.

(C) Transportation maintenance activities may be evaluated in an annual floodplain development ~~Flood Hazard~~ permit. This permit will confirm that the typical Best Management Practices used to accomplish routine transportation maintenance projects meet applicable Flood Hazard regulations. Eligible activities include routine cleaning and maintenance of ditches and culverts, replacement culverts, unanticipated emergency response activities and the permitting of new driveway culverts crossing a county maintained ditch. After the fact notification of the location and scope of all transportation maintenance activities is required.

#### **§ 39.5020 EXEMPTION FROM DEVELOPMENT STANDARDS.**

The following are exempt:

(A) Land may be exempted from the requirements of MCC 39.5030 upon review and approval by the Director of an acceptable elevation certificate or survey, certified by a State of Oregon registered land surveyor, which demonstrates that the entire subject parcel is at least one foot above the base flood elevation and only after a Letter of Map Amendment (LOMA) is issued by FEMA. This exemption is only possible when flood elevation data is available. If a critical facility is proposed, the entire parcel

must be at least three feet above the base flood elevation (or above the 500-year flood elevation, whichever is higher) in order to be considered exempt from the requirements of MCC 39.5030 and only after a Letter of Map Amendment (LOMA) is issued by FEMA.

(B) The reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Historic Sites Inventory may be permitted without regard to the requirements of MCC 39.5030(B) through (D).

(C) Forest practices approved under the Forest Practices Act are not regulated by this subpart subchapter. Forest practice buildings exempt from state building code per ORS Chapter 215 are subject to Flood Hazard Regulations of this subpart subchapter in the same manner as agricultural buildings.

~~(D) The following drainage district maintenance activities are not regulated by this subchapter when regulated by an Army Corps of Engineers Nationwide 31 permit—Routine operations, repair, maintenance, alteration, rehabilitation, or replacement of existing drainage, flood control, and related facilities, including any structures, pump stations, water control structures, culverts, irrigation systems, roadways, utilities, accessory uses (such as off-load facilities that facilitate water-based maintenance), erosion control projects, levees, soil and bank stabilization projects, dredging and ditch clearing within the hydraulic cross-section in existing storm water conveyance drainageways, habitat restoration and enhancement projects, or other water quality and flood storage projects required to be undertaken pursuant to ORS chapters 547 or 554 or Titles 33 or 44 of the Code of Federal Regulations, provided that:~~

~~(1) The project is consistent with Division of State Lands, five-year renewable general authorization permit, five-year renewable Army Corps of Engineers Nationwide 31 permit and all other applicable local, regional, county and state laws and regulations. The preconstruction notification and annual~~

~~reporting required by the Army Corp's Nationwide 31 permit must also be submitted to Multnomah County planning by the drainage districts for review and comment.~~

~~(2) The project does not encroach closer to a water feature than existing operations and development; and~~

~~(3) Vegetation native to the metro area is maintained, enhanced and restored, if disturbed; other vegetation is replaced, if disturbed, with non-invasive vegetation; and the planting of native vegetation and the removal of invasive non-native vegetation is encouraged.~~

### § 39.5025 APPLICATION INFORMATION REQUIRED.

An application for development subject to a Floodplain Development Permit shall include the following:

(A) A map showing the property line locations, the surveyed boundaries of the Areas of Special Flood Hazard 100-year floodplain on the parcel, roads, and driveways, existing structures, watercourses and the location of the proposed development(s), topographic elevations for the proposed development and areas of grading or filling required for the project. The FIRM map and panel number shall also be provided on the map.

(B) Detailed construction drawings showing compliance with the development standards specified in MCC 39.5030. A State of Oregon registered professional engineer or architect shall stamp the plans and include a statement that the plans meet the applicable requirements of MCC 39.5030.

(C) An elevation certificate based on construction drawings which have been signed by a State of Oregon registered professional land surveyor, or a floodproofing certificate signed by a State of Oregon registered professional engineer or architect, depending on the type of development proposed. The certificate shall be accompanied by a plan of the property which

shows the location and elevation of a benchmark on the property.

(D) A written narrative specifying building materials and methods that will be utilized to comply with the requirements of the floodplain development permit and this ~~subpart~~ ~~subchapter~~.

(E) Evidence that the applicant has obtained, when necessary, prior approval from those Federal, State and/or local governmental agencies with jurisdiction over the proposed development.

### § 39.5030 DEVELOPMENT STANDARDS.

~~Unless otherwise stated below, the The~~ following development standards shall apply within all portions of unincorporated Multnomah County to all new construction, substantial improvement or other development in areas of special flood hazard, as defined in MCC 39.5005: ~~(The General Development Standards of MCC 39.5030(A) are only applicable in the West of Sandy River Rural Planning area and/or within the Metro Jurisdictional Boundary)~~

(A) ~~This section applies to all development within areas of special flood hazard in unincorporated Multnomah County as defined in MCC 39.5005 General Development Standards—Applicable only in the West of Sandy River Rural Planning Area and/or within the Metro Jurisdictional Boundary.~~

(1) Development, excavation and fill shall be performed in a manner that maintains or increases flood storage and conveyance capacity and does not increase the design flood elevation.

(2) All fill placed at or below the design flood elevation in areas of special flood hazard shall be balanced with at least an equal amount of soil material removal.

(3) Excavation shall not be counted as compensating for fill if such areas will be filled with water in non-storm winter conditions.

(4) Temporary fills permitted during construction shall be removed and not

be allowed in the floodway during the wet weather season.

(5) Uncontained areas of hazardous materials as defined by the Oregon Department of Environmental Quality shall be prohibited in areas of special flood hazard.

(B) ~~Except as provided in subsection (A) above, this~~ This subsection applies to all structures within areas of special flood hazard in unincorporated Multnomah County as defined in MCC 39.5005.

(1) All new construction and substantial improvement shall:

(a) Comply with Oregon State Building Codes.

(b) Have the electrical, heating, ventilation, duct systems, plumbing, and air conditioning equipment and other service facilities located a minimum of one foot above the base flood elevation to prevent water from entering or accumulating within the components during conditions of flooding.

(c) Use materials and utility equipment resistant to flood damage.

(d) ~~Use~~ Using methods and practices that minimize flood damage.

(e) For areas that are fully enclosed below the lowest floor and that are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. ~~(Note: t~~ This requirement is not applicable for floodproofed nonresidential structures).

1. Designs for meeting this requirement must be certified by a State of Oregon registered



professional engineer or architect and must meet or exceed the following minimum criteria:

a. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.

b. The bottom of all openings shall be no higher than one foot above the lowest adjacent exterior grade. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters and the covering device does not reduce the minimum required total net area of the opening.

(2) Adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures. Positive drainage away from a structure's foundation shall also be provided to avoid ponding of water adjacent to the foundation after floodwaters recede.

(3) Below-grade crawlspace construction (see figure 2 below).

In addition to meeting the previous development standards for all structures, all below-grade crawlspaces shall meet the following standards. Below-grade crawlspace construction in accordance with the requirements listed below will not be considered a basement.

Figures 1 and 2.

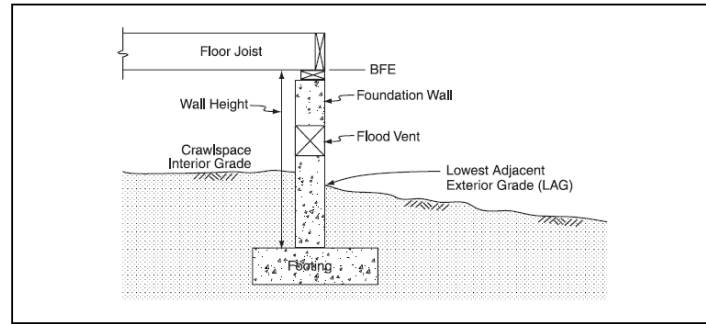


Figure 1 Preferred crawlspace construction.

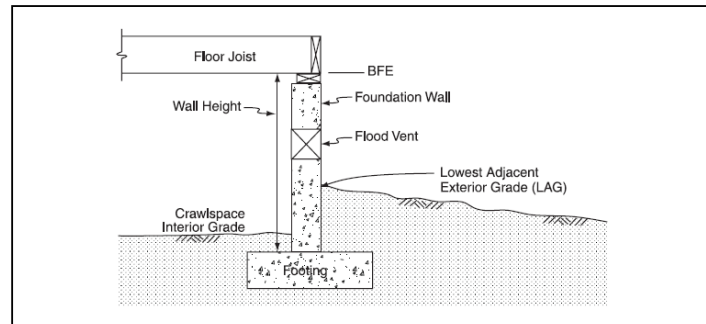


Figure 2 Below-grade crawlspace construction.

(a) The interior grade of a crawlspace below the base flood elevation shall not be more than two-feet below the lowest adjacent exterior grade.

(b) The height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall must not exceed four feet at any point.

(c) There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. Drainage examples include natural drainage through porous well drained soils, perforated pipes, drainage tiles, or gravel/crushed stone drainage by gravity or mechanical means.

(d) The velocity of floodwaters shall not exceed five-feet per second for any proposed below grade crawlspace location. The

Multnomah County Flood Insurance Study contains Floodway Data Tables presenting information on mean floodway velocities at each cross section along the river or stream. Other types of foundations, such as open pile or column foundations, that allow floodwaters to flow freely beneath the building, are recommended for areas exceeding five-feet per second flood velocities.

(e) The below-grade crawlspace area should be designed so that it is easily accessible for physical post-flood clean-up and ventilation. The land owner must record a notice acknowledging below-grade crawlspace construction is not recommended by the Federal Emergency Management Agency and that this type of construction can increase flood insurance premiums for homeowners.

(4) When applicable, the horizontal line of the base flood elevation shall be surveyed and clearly marked and labeled, by a State of Oregon registered professional land surveyor, on an inside wall of any structure or inside foundation wall when a crawlspace is proposed to provide a visual reference for the building inspector. This reference line is not intended to be permanent and can be removed, covered or painted over at the conclusion of all building inspections. This marking is not applicable when the entire structure, including above grade foundation walls, will be elevated above the base flood elevation.

(C) Residential Structures. New construction and substantial improvement of any residential structure, including manufactured ~~dwelling homes~~ not considered a ~~C~~critical ~~F~~acility, shall:

(1) Have the lowest floor, including basement, elevated to at least one foot

above the base flood elevation. All manufactured ~~dwelling homes~~ to be placed or substantially improved shall be elevated on a permanent foundation such that the finished floor of the manufactured ~~dwelling home~~ is elevated to a minimum of 18 inches above the base flood elevation. The ~~bottom of the lowest chassis frame beam top of the dwelling stand~~ for all manufactured ~~dwelling homes~~ subject to this provision shall be at least 12 inches above the base flood elevation (~~see 2002 Oregon Manufactured Dwelling and Parks Specialty Code, Chapter 3~~). Floating dwellings do not need to be elevated but must be able to rise with flood waters to the design flood elevation required by this ~~subsection~~. This will require consideration of the piling heights. The lowest floor, including basement, shall be elevated to at least two feet above the ~~base flood elevation-highest adjacent grade~~ where flood elevation data is not available either through the Flood Insurance Study, FIRM, or from another authoritative federal, state or other source. Where flood elevation data is not available, a State of Oregon registered professional engineer or architect shall also verify that the proposed construction will be reasonably safe from flooding.

(2) A garage attached to a residential structure can be constructed with the garage floor slab below the base flood elevation but must be designed to allow for the automatic entry of flood waters. Openings must meet the requirements of MCC 39.5030(B) and are required in two different exterior walls of the garage (two different walls or one wall and one garage door).

(a) In addition to allowing the automatic entry of flood waters, the areas of the garage below the base flood elevation must be constructed with flood resistant materials.

Garage doors without openings specifically designed to allow for the free flow of floodwaters do not meet these opening requirements. Gaps that may be present between the door segments and between the garage door and the garage door jam do not guarantee the automatic entry and exist of floodwaters. The human intervention necessary to open garage doors is not an acceptable means of meeting the opening requirements.

~~(32)~~ Be placed on a permanent foundation and shall be anchored to prevent flotation, collapse and lateral movement by providing tie downs (anchor bolts, seismic tie-downs) and anchoring as specified in OAR 814-23-005 through 080 and State of Oregon 1 and 2 Family Dwelling Specialty Code, as appropriate to the construction type.

~~(43)~~ Have structural components capable of withstanding hydrostatic and hydrodynamic loads, effects of buoyancy, flood depths, pressures, velocities and other factors associated with the base flood.

~~(54)~~ Conduct a finished construction elevation survey of the lowest floor. This survey shall be completed by a State of Oregon registered land surveyor and must certify that the structure's lowest floor was elevated to at least one foot above the base flood elevation. The lowest floor, including basement, shall be elevated to at least two feet above the ~~base flood elevation~~ highest adjacent grade where flood elevation data is not available either through the Flood Insurance Study, FIRM, or from another authoritative federal, state or other source. Where flood elevation data is not available, a State of Oregon registered professional engineer or architect shall also verify that the proposed construction will be reasonably safe from flooding.

(a) The finished construction elevation certificate and stamped documentation certifying that the structure has been built in compliance with the applicable provisions of MCC 39.5030 shall be submitted to Multnomah County Land Use Planning prior to occupancy of the structure.

(b) Prior to issuance of a building permit or start of development, a performance bond or cash deposit of \$1000.00 shall be required to assure that the finished construction elevation certificate is submitted. The deposit/bond may be used to obtain the elevation certificate, without notice, if it is not completed and submitted prior to occupancy of the dwelling. The performance bond or cash deposit shall be released upon submittal of the finished construction elevation certificate, unless utilized to obtain compliance.

(D) Nonresidential Structures. New construction and substantial improvement of any commercial, industrial or other non-residential structure, including a detached garage, shall meet (1) or (2) and (3):

(1) Have the lowest floor including basement, elevated at least one foot above the base flood elevation and be anchored to prevent flotation, collapse, or lateral movement of the structure. Floating nonresidential structures do not need to be elevated but must be able to rise with flood waters to the design flood elevation required by this subsection. This will require consideration of the piling heights. The lowest floor, including basement, shall be elevated to at least two feet above the ~~base flood elevation~~ highest adjacent grade where flood elevation data is not available either through the Flood Insurance Study, FIRM, or from another authoritative federal, state or other

source. Where flood elevation data is not available, a State of Oregon registered professional engineer or architect shall also verify that the proposed construction will be reasonably safe from flooding;

or, together with attendant utility and sanitary facilities, shall:

(2a) Be floodproofed such that the structure, including the attendant utility and sanitary facilities, shall be substantially impermeable to the passage of water to an elevation at least one foot above the base flood elevation; and

(ab) Have structural components capable of withstanding hydrostatic and hydrodynamic loads, effects of buoyancy, flood depths, pressures, velocities and other factors associated with the base flood; and

(be) Be certified by a State of Oregon registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans.

(32) The applicant shall provide either a finished construction elevation certificate prepared by a State of Oregon land surveyor for an elevated non-residential structure or a floodproofing ~~flood-proofing~~ certificate prepared by a State of Oregon registered professional engineer or architect for a non-elevated, non-residential structure.

(a) The finished construction elevation certificate/floodproofing certificate and stamped documentation certifying the structure has been built in compliance with the applicable

provisions of MCC 39.5030 shall be submitted to Multnomah County Land Use Planning prior to occupancy of the structure.

(b) Prior to issuance of a building permit or start of development, a performance bond or cash deposit of \$1000.00 shall be required to assure that the finished construction elevation certificate and stamped documentation is submitted. The bond/deposit may be used to obtain the elevation certificate or documentation, without notice, if it is not completed and submitted prior to occupancy or use of the structure or development. The performance bond or cash deposit shall be released upon submittal of the finished construction elevation certificate or stamped documentation, unless utilized to obtain compliance.

(E) On Site Waste Disposal Systems, Wells, Water Systems and Sewer Systems.

All new and replacement water and sewer systems, including wells and on-site waste disposal systems, shall be designed to:

- (1) Minimize infiltration of floodwaters into the system;
- (2) Minimize discharge from systems into floodwaters;
- (3) Avoid impairment or contamination during flooding.

(F) Recreational Vehicles

Recreational vehicles utilized on a ~~sites~~ within Zones A1-A30, AH and AE on the community's FIRM shall either:

- (1) Be on the site for fewer than 180 consecutive days, ~~or~~ and
- (2) Be fully licensed and ready for highway uses, on its wheels or jacking system, is attached to the site only by

quick disconnect type utilities and security devices, and has no permanently attached additions; or

(3) Meet the requirements of MCC 39.5030(B) and (C).

(G) Critical Facilities. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the areas of special flood hazard. Construction of new critical facilities shall be permissible within the special flood hazard area if:

- (1) No feasible alternative is available,
- (2) The lowest floor is elevated three feet above the base flood elevation, or to the elevation of the 500-year flood, whichever is higher,
- (3) At least one access route to the critical facility shall be either located or elevated at or above the flood elevation referenced above to assure the route will remain passable during flood events.
- (4) Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced or released into floodwaters,
- (5) The construction meets the requirements of MCC 39.5030(D) except the lowest floor elevation shall meet (G)(2) above.

#### (H) Land Division Proposals

County review of proposed land divisions is subject to separate criteria in the Multnomah County Land Division Ordinance which are designed to minimize flood damage.

### § 39.5035 FLOODWAY REQUIREMENTS.

In areas identified as a floodway on a Flood Insurance Rate Map (FIRM) in MCC 39.5010, the following restrictions, in addition to the requirements of MCC 39.5030, shall apply:

(A) No development shall be permitted that would result in any measurable increase in base flood levels.

(1) Encroachment into the floodway, including fill, new construction, substantial improvements and other development, is prohibited, unless a detailed step backwater analysis and conveyance compensation calculations, certified by a State of Oregon registered professional engineer, are provided which demonstrates that the proposed encroachment will cause no measurable increase in flood levels (water surface elevations) during a base flood discharge.

(2) If subsection (1) above is satisfied, all new construction and substantial improvements shall comply with ~~all applicable flood hazard reduction provisions of~~ MCC 39.5030.

(B) In areas where a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the ~~communities~~ FIRM, unless:

(1) It is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community as identified in the Flood Insurance Study (Multnomah County, Oregon and Incorporated Areas), and

(2) The applicable requirements of MCC 39.5030 are met.

(C) New manufactured dwellings are prohibited in the floodway. An existing, lawfully established manufactured dwelling located in the floodway may be replaced with either a manufactured dwelling, or a dwelling of traditional construction.



(D) A proposed ~~structure~~-accessory structure in the floodway to a manufactured dwelling shall have the finished floor elevated a minimum of 18-inches above the base flood elevation.

**§ 39.5040 PROCEDURE WHEN BASE FLOOD ELEVATION DATA IS NOT AVAILABLE.**

(A) For the purposes of administering MCC 39.5030 in areas where detailed base flood elevation data has not been provided by FEMA, the Land Use Planning Division shall obtain, review and utilize any base flood elevation and floodway data available from federal, state or local sources to assure that the proposed construction will be reasonably safe from flooding and may exercise local judgment based on historical data. The property owner shall be responsible for determining the base flood elevation and floodway data as relevant, in the case where such information is not available from any listed sources.

(B) In areas where detailed base flood elevation data has not been provided by FEMA, all proposals for subdivisions or other new developments greater than 50 lots or five acres, whichever is less, shall provide detailed base flood elevation data and floodway data.

**§ 39.5045 WATERCOURSE RELOCATION AND ALTERATION.**

~~Prior to approving any relocation, encroachment or alteration of a watercourse, the Land Use Planning Division shall provide mailed notice of the proposal to adjoining communities and to the Department of Land Conservation and Development Floodplain Coordinator. Copies of such notice shall also be provided to the Federal Insurance Administration.~~

(A) No relocation, encroachment or alteration of a watercourse shall be permitted unless a detailed hydraulic analysis, certified by a State of Oregon Registered Professional Engineer, is provided which demonstrates that:

- (1) The flood carrying capacity for the altered or relocated portion of the watercourse will be maintained;
- (2) The area subject to inundation by the base flood discharge will not be increased;
- (3) The alteration or relocation will cause no measurable increase in base flood levels.

(B) Prior to approving any relocation, encroachment or alteration of a watercourse, the Land Use Planning Division shall provide mailed notice of the proposal to adjoining communities and to the Department of Land Conservation and Development Floodplain Coordinator. Copies of such notice shall also be provided to the Federal Insurance Administration.

**§ 39.5050 COUNTY RECORDS.**

(A) Multnomah County or its designee shall obtain and maintain on file the final construction elevation (in relation to the National Geodetic Vertical Datum (NGVD) 1929 or NAVD 1988) of the lowest floor, including basement, of all new or substantially improved structures in areas subject to the provisions of this Section.

(B) For all new or substantially improved floodproofed structures in areas subject to the provisions of this Section, Multnomah County shall obtain and maintain on file the actual elevation (in relation to NGVD 1929 or NAVD 1988) to which the structure was floodproofed and shall also maintain the floodproofing certifications required pursuant to MCC 39.5030.

(C) Multnomah County shall notify FEMA within six months of project completion when an applicant had obtained a Conditional Letter of Map Revision (CLOMR) from FEMA, or when development altered a watercourse, modified floodplain boundaries, or modified base flood elevations. This notification shall be provided as a Letter of Map Revision (LOMR).

(D) The property owner shall be responsible for preparing technical data to support the LOMR application and paying any processing or application fees to FEMA.

(E) Multnomah County 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 laws.

#### **§ 39.5055 REVIEW AND APPROVAL FEE.**

A fee for a ~~flood plain~~ floodplain review is imposed and the amount will be set by Board resolution.