

CHAPTER 16 CONTENTS

- SHORELANDS MIXED DEVELOPMENT COMBINING ZONE (/MD-RCP)  
16.241 Shorelands Mixed Development Combining Zone (/MD-RCP).
- DREDGE MATERIAL/MITIGATION SITE COMBINING ZONE (/DMS-RCP)  
16.242 Dredge Material Mitigation Site Combining Zone (/DMS-RCP).
- BEACHES AND DUNES COMBINING ZONE (/BD-RCP)  
16.243 Beaches and Dunes Combining Zone (/BD-RCP).
- FLOODPLAIN COMBINING ZONE (/FP-RCP)  
16.244 Floodplain Combining Zone (/FP-RCP).
- COMMERCIAL AIRPORT SAFETY COMBINING ZONE (/CAS-RCP)  
16.245 Commercial Airport Safety Combining Zone (/CAS-RCP).
- AIRPORT SAFETY COMBINING ZONE (/AS-RCP)  
16.246 Airport Safety Combining Zone (/AS-RCP).
- AIRPORT OPERATIONS ZONE (AO-RCP)  
16.247 Airport Operations Zone (AO-RCP).
- RESOURCE CAPABILITY DETERMINATION  
16.248 Resource Capability Determination.
- ESTUARINE IMPACT ASSESSMENT  
16.249 Estuarine Impact Assessment.

**FLOODPLAIN COMBINING ZONE (/FP-RCP)  
RURAL COMPREHENSIVE PLAN**

**16.244 Floodplain Combining Zone (/FP-RCP).**

- (1) Purpose. The objectives of this ordinance are to:
- (a) Protect human life, health and property.
  - (b) Minimize expenditure of public money and costly flood control projects.
  - (c) Minimize the need for rescue and relief efforts associated with flooding, which are typically undertaken at the expense of the general public.
  - (d) Minimize unnecessary and prolonged disruption of commerce and public services during times of flood.
  - (e) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, and streets and bridges located in areas of special flood hazards.
  - (f) Help maintain a stable tax base by providing for the sound use and development of special flood hazard areas so as to minimize future blight.
  - (g) Ensure that potential buyers are notified that property is in an area of special flood hazard.
  - (h) Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.
  - (i) Minimize the potential for contamination to surface and ground waters from pollutants exposed or released during flood events.
  - (j) Manage the alteration of flood hazard areas to minimize the immediate and cumulative impacts of development on the natural and beneficial functions of the floodplain.

(2) Definitions. Unless specifically defined in LC 16.244(2) below, words or phrases used in this ordinance shall have the meanings provided in Lane Code 16.090. Words or phrases not defined in LC 16.244(2) or LC 16.090 shall be interpreted so as to give them the meaning they have in the most common usage and to give this ordinance the most reasonable application.

**Area of Special Flood Hazard.** The land in the floodplain within a community subject to a one percent chance of flooding in any given year. Flood zone designations on FIRMs in Lane County for these areas include the letters A, AE and AO, also referred to as the Special Flood Hazard Area (SFHA).

**Bankfull Stage.** The flow stage of a river in which the stream completely fills its channel and the elevation of the water surface coincides with the bank margins

**Base Flood.** A flood that has a one percent chance or greater of being equaled or exceeded in any given year.

**Base Flood Elevation (BFE).** The water surface elevation during the base flood in relation to a specific datum. The BFE is depicted on the FIRM to the nearest foot and on the FIS to the nearest 0.1 foot.

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

**Breakaway Wall.** A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building supporting foundation system

## Attachment “B” Proposed Changes to Lane Code 16.244

**Development.** For the purposes of LC 16.244, development means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials located within the area of special flood hazard. Development does not include:

- A. Signs, markers, aids, etc. placed by a public agency to serve the public
- B. Driveways, parking lots, or other open space use areas where no alteration of topography occurs;
- C. Minor repairs or improvements to existing structures provided that the alterations do not increase the size or intensity of use, and do not constitute repair of substantial damage, or substantial improvement as defined in this ordinance;
- D. Customary dredging associated with routine channel maintenance consistent with State or Federal laws and permits;
- E. Posts or beams with thickness and width dimensions no larger than 4 inches by 4 inches, which are placed outside of the regulated floodway and spaced a minimum of 6 feet apart and which do not provide structural support to a habitable structure.

**Critical Facility.** A facility that is critical for the health and welfare of the population and is especially important following a hazard event. Critical facilities include but are not limited to:

- A. Hospitals, nursing homes, and housing likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a flood;
- B. Police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for flood response activities before, during, and after a flood; and
- C. Public and private utility facilities that are vital to maintaining or restoring normal services to flooded areas before, during, and after a flood.”

In addition, critical facilities also include those facilities that if damaged or inundated during a flood event have the potential to create further detrimental risks to the health of the population and the environment. These include all landfills, dumps, waste treatment facilities and also any industrial facilities that produce, use or store hazardous materials.

**Datum.** The vertical datum is a base measurement point (or set of points) from which all elevations are determined. Historically, that common set of points has been the National Geodetic Vertical Datum of 1929 (NAVD29).

**Digital FIRM (DFIRM).** Digital Flood Insurance Rate Maps depict flood risk, zones and flood information in a format suitable for electronic mapping applications. In Lane County, the hardcopy FIRM remain the final authoritative and regulatory floodplain management map documents and DFIRM data is used for reference purposes.

**Encroachment.** An encroachment is the advancement or infringement of uses, fill, excavation, buildings, permanent structures or other development into a floodway which may impede or alter the flow capacity of a floodplain.

**Flood or Flooding.** A general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal

## Attachment “B” Proposed Changes to Lane Code 16.244

waters and/or the unusual and rapid accumulations and runoff of surface waters from any source.

**Flood Elevation Determination.** A determination by the Floodplain Administrator of the water surface elevations of the base flood from the approved flood hazard studies.

**Flood Insurance Rate Map (FIRM).** The official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

**Flood Insurance Study.** The official report provided by the Federal Insurance Administration that includes flood profiles and the water surface elevation of the base flood.

**Floodplain.** A physical geographic term describing any land area susceptible to being inundated by water from any source.

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

**Floodplain Management Regulations.** This Floodplain ordinance, together with building code requirements, health regulations and any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

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

**Flood Protection Elevation.** The elevation(s) to which structures, utilities substantial improvements and other development must be constructed to minimize the potential for inundation during a 100-year flood event . This elevation is two feet above the base flood elevation in AE zones and four feet above highest adjacent grade in A and AO zones. For critical facilities the flood protection elevation is set at one foot above the 500-year flood elevation. These 500-year flood inundation areas are depicted as “shaded X zones” on the FIRM.

**Flood Source.** The river, stream, lake, reservoir or other water body where floodwaters are likely to originate or spread out from and impact adjacent land.

**Floodway, (Regulatory Floodway).** The floodway is the channel of a river or other watercourse and those portions of the floodplain adjoining the channel required to discharge and store floodwater or flood flows associated within the regulatory flood. These areas must be reserved in order to enable the discharge of base flood waters without cumulatively increasing the water surface elevation more than one foot.

**Freeboard.** A factor of safety usually expressed in feet above a flood level for the purposes of floodplain management.

**Hazardous Materials.** For the purposes of Lane Code 16.244, “hazardous materials” has the same meaning given that term under the Federal Resource Conservation and Recovery Act.

**Highest Adjacent Grade (HAG).** The highest natural elevation of the ground surface prior to construction, adjacent to the proposed walls of a structure.

**Letter of Map Change (LOMC).** is an official FEMA determination, by letter, to amend or revise effective Flood Insurance Rate Maps and Flood Insurance Studies. LOMCs are issued in the following categories:

- A. Letter of Map Amendment (LOMA): A revision based on technical data showing that a property was incorrectly included in a designated

## Attachment “B” Proposed Changes to Lane Code 16.244

special flood hazard area. A LOMA amends the current effective Flood Insurance Rate Map and establishes that a specific property is not located in a special flood hazard area.

- B. Letter of Map Revision (LOMR): A revision based on technical data that depicts changes to flood zones, flood elevations, floodplain and floodway delineations, and planimetric features, which are typically due to manmade changes. One common type of LOMR, a LOMR-F, is a determination that a structure of parcel has been elevated by fill above the base flood elevation and is excluded from the special flood hazard area.
- C. Conditional Letter of Map Revision (CLOMR): A formal review and comment by FEMA as to whether a proposed project complies with the minimum National Flood Insurance Program floodplain management criteria. A CLOMR does NOT amend or revise effective Flood Insurance Rate Maps or Flood Insurance Studies.

**Lowest Floor (structures other than a manufactured dwelling).** The lowest floor of a structure is the lowest floor of the lowest enclosed area of the structure, including the basement. An unfinished or flood resistant enclosure (such as an attached garage), usable solely for parking of vehicles, building access or storage, in an area other than a basement, is not considered the structure’s lowest floor, provided that such enclosure is not built as to render the structure in violation of the applicable non-elevation design requirements of LC 16.244(9).

**Lowest Floor (manufactured dwellings).** For manufactured dwellings the lowest floor means the bottom of the longitudinal chassis frame beam in all A zones and the bottom of the lowest structural member supporting the home in V zones.

**Manufactured Dwelling.** A manufactured dwelling (aka, manufactured home or mobile home) is a structure, transportable in one or more sections, built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term “Manufactured Dwelling” does not include a “Recreational Vehicle.”

**Market Value.** The value of real property (i.e. building.) as shown on the most current official Tax Assessor’s records or as determined by an independent professional licensed property assessor.

**Mean Sea Level (MSL).** For the purposes of implementing floodplain management within Lane County MSL shall be synonymous with the National Geodetic Vertical Datum of 1929 (NAVD29).

**Natural Elevation.** Natural Elevation is the elevation of natural grade, or the grade in existence before June 2, 1999.

**New Construction.** New construction means a structure for which the “start of construction commenced after June 2, 1999, and also includes any subsequent substantial improvements the structure.

**Secondary Containment.** A second tank, catchment pit, or other vessel with sealed bottoms and sides contains liquid or solid chemicals leaking or leaching from a primary containment area.

**Start of Construction.** Start of Construction includes substantial improvements and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, or 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,

## Attachment "B" Proposed Changes to Lane Code 16.244

the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not the alteration affects the external dimensions of a building.

**Structure in a Flood Hazard Area.** A roofed building with two or more walls, a manufactured home or a tank used to store gas or liquid which is principally above ground or a modular or temporary building.

**Substantial Damage.** Damage of any origin sustained by a structure whereby the cost of restoring the structure to its pre-damage condition would equal or exceed twenty-five (25) percent of the market value of the structure before the damage occurred.

**Substantial Improvement.** Any combination of repairs, reconstruction, alteration or improvements to a structure taking place during the life of the structure the cumulative cost of which equals or exceeds twenty-five (25) percent of the "market value" as defined herein of the existing structure before "the start of construction" of the improvement. This term also includes structures which have incurred "substantial damage," regardless of the actual repair work performed. For the purpose of this definition "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include any project for improvement of a structure to correct existing violations of state or local health, sanitary, building, fire 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.

(3) Lands to Which This Ordinance Applies. This ordinance shall apply to all areas of flood hazard within Lane County, and overlay the regulations of the underlying zone.

(a) Areas of flood hazard for Lane County under the jurisdiction of the Rural Comprehensive Plan are identified by the Federal Emergency Management Agency in a scientific and engineering report entitled "THE FLOOD INSURANCE STUDY (FIS) FOR LANE COUNTY, OREGON UNINCORPORATED AREAS", with accompanying Flood Insurance Rate Maps (FIRM) The FIS and the FIRM are on file at the offices of the Lane County Land Management Division.

(b) Areas of flood hazard shall also include any land area designated by the Floodplain Administrator as susceptible to inundation of water from any source where the above-referenced Flood Rate Insurance Maps have not identified any special flood areas.

(c) Flood hazard areas described in LC16.244 (3)(a) and (b) shall be adopted by Board Order, made a part of Lane Manual (LM 11.020) and filed in the office of the Land Management Division. Such studies and maps shall form the basis for the administration and implementation of this ordinance.

(4) Warning and Disclaimer of Liability. The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes. Larger floods

## Attachment "B" Proposed Changes to Lane Code 16.244

can and will occur on rare occasions. Flood heights may be increased by human-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Lane County, any officer or employee thereof, for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

(5) Designation of Floodplain Administrator. The Planning Director (Director) or his or her designee is hereby appointed as the Floodplain Administrator who is responsible for administering and implementing the provisions of this ordinance.

(6) Duties and Responsibilities of the Administrator. Duties of the Floodplain Administrator shall include, but shall not be limited to:

(a) Review all floodplain development permit applications to assure that the permit requirements of this ordinance have been satisfied.

(b) Review proposed development to assure that necessary permits have been received from those Federal, State, or local governmental agencies from which prior approval is required. Copies of such permits shall be provided and maintained on file.

(c) Review all development permit applications to determine if the proposed development is located in the floodway, and if so, ensure that the restrictions and requirements of LC 16.244(9)(d) are enforced.

(d) When Base Flood Elevation data or floodway data are not available, then the Floodplain Administrator shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source in order to administer the provisions of this ordinance.

(e) When Base Flood Elevations or other current engineering data are not available, the Floodplain Administrator shall take into account the flood hazards, to the extent they are known, to determine whether a proposed building site will be reasonably safe from flooding.

(f) Obtain, verify and record the actual elevation in relation to the vertical datum on the effective FIRM, or highest adjacent grade, of the lowest floor level, including basement, of all new construction or substantially improved structures.

(g) Obtain, verify and record the actual elevation, in relation to the vertical datum on the effective FIRM to which any new or substantially improved structures have been flood-proofed.

(h) When flood-proofing is utilized for a structure, the Floodplain Administrator shall obtain certification of design criteria from a registered professional engineer or architect.

(i) Where interpretation is needed of the exact location of boundaries of the SFHA including regulatory floodway (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Floodplain Administrator shall make the interpretation. A person contesting the location of the interpreted boundary may make an appeal of the interpretation to the Hearings Official as provided in LC 14.500.

(j) Ensure that all records pertaining to the provisions of this ordinance are permanently maintained and available for public inspection.

(7) Methods of Reducing Flood Losses. In order to accomplish its purpose, this ordinance includes methods and provisions for:

## Attachment "B" Proposed Changes to Lane Code 16.244

(a) Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities.

(b) Requiring that uses 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 flood waters.

(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 flood waters or which may increase flood hazards in other areas.

(8) Development Subject to Floodplain Administrator Approval. Approval shall be obtained before construction or development begins within any area of special flood hazard. Approval shall be required for all structures, manufactured homes, and "development" as this term is defined in LC 16.244(2). Applications for development outside of the regulated floodway shall be reviewed as ministerial land use applications. Applications for development within the regulated floodway shall be filed with the Department pursuant to LC 14.050.

(9) Provisions for Flood Hazard Reduction. In all areas of flood hazard, the following standards are required:

(a) Provisions applicable to A, AE and AO zones :

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

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

(iii) Electrical, heating, ventilation, plumbing and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(iv) Agricultural and equine buildings, which are exempt from building code requirements are prohibited in the SFHA.

(b) Review of Building Permits. Where elevation data is not available either through the Flood Insurance Study or from another authoritative source, applications for building and manufactured home placement permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness shall include the use of historical data, high water marks, photographs of past flooding, etc., where available.

(c) Critical Facilities. Construction of new critical facilities shall be prohibited within the 500-year floodplain. Substantial improvements to existing critical facilities may be permissible if the improved facility is constructed on properly compacted fill so that its lowest floor is elevated at least 1 foot above the elevation of the 500-year flood. Where appropriate, flood proofing and sealing measures must be taken to ensure that any hazardous materials used or stored on site will not be displaced by or released into floodwaters. Appropriate flood proofing requirements are outlined in the FEMA Technical Bulletin 3-93. Substantially improved critical facilities shall have at least one access road connected to land outside the 500-year floodplain that is capable of supporting a 4,000-pound vehicle. The entire surface of the access road must be no lower than the elevation of the 500-year flood. (d) Floodways. Located within areas of special flood hazard established in LC 16.244(3) are areas designated as floodways. Since

**Attachment "B" Proposed Changes to Lane Code 16.244**

the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris and potential projectiles, and create erosion potential, the following provisions apply:

(i) Expect as provided in LC 16.244(9)(d)(ii)(aa)-(jj) and LC 16.244(9)(d)(iii) below, all encroachments, including fill, new construction, substantial improvements, below ground storage tanks and septic systems, structures elevated on piers, posts or pilings and all other development are prohibited.

(ii) Exceptions. The following encroachments and uses may be conditionally permitted within the floodway provided they meet the standards set forth in LC 16.244(9)(d)(iv),

(aa) Public roads;  
(bb) Bridges and culverts  
(cc) Public and private utilities and associated infrastructure;

(dd) Pump houses used exclusively for well operation and maintenance, which are less than 25 square feet in size;

(ee) Sand and gravel extraction operations, excluding batch processing;

(ff) Revetments;  
(gg) Structures for flood control.  
(hh) Docks, piers, boat ramps, landings and stairs  
(ii) Fish passage structures and channels  
(jj) Other uses permitted within the underlying base

zones where the application LC 16.244(9)(d)(i) would diminish all reasonable use of the property and render the lot or parcel undevelopable.

(iii) Temporary Encroachments. Temporary encroachments in the Floodway for the purposes of capital improvement projects (including bridge construction/repair) are permitted provided they meet the standards and provisions outlined on the FEMA Region X Guidance Memorandum: Temporary Encroachments into the Floodway, October 2009. This memorandum is on file in the Land Management Division Offices.

(iv) Criteria for Encroachments within the Floodway. Any encroachments, including fill, new construction, substantial improvements and other development listed in LC 16.244(9)(d)(ii)(aa)-(jj) are prohibited unless the following criteria is met:

(aa) Certification by a registered professional engineer is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge. This evidence shall utilize hydrologic and hydraulic analyses performed in accordance with standard engineering practices.

(bb) Applicants shall obtain a Conditional Letter of Map Revision (CLOMR) before an encroachment in the floodway is permitted that will cause any increase in the base flood elevation. A CLOMR is not required for temporary encroachments for capital improvements projects permitted under LC 16.244(9)(d)(iii).

(cc) Uses permitted pursuant to LC 16.244(9)(d)(ii)(jj) shall be the minimum size and scale necessary to alleviate the difficulty and shall be located at the maximum perpendicular distance away from the flood source as practicable. In addition, any structures permitted pursuant to LC 16.244(9)(d)(ii)(jj) must be constructed on a pier and beam supported foundation to improve conveyance of floodwaters.

**Attachment “B” Proposed Changes to Lane Code 16.244**

(dd) All encroachments permitted pursuant to LC 16.244(9)(d) shall comply with all applicable flood hazard reduction provisions for development in zones AE.

(v) Land divisions and property line adjustments for residential purposes are prohibited if the resulting lots or parcels do not have a demonstrable developable area located outside of the Floodway that is of sufficient size to accommodate a dwelling, septic system, and parking area. (vi)

Construction of new fencing is prohibited within the Floodway, unless the fencing is designed to collapse or break-away, and is cabled together so as to not create debris. As an alternative to a break-away design, a new fence may be designed to allow the passage of water by having a flap or opening in the areas at or below the base flood elevation sufficient to allow floodwaters to pass freely.

(vii) Where base flood elevations have been provided but floodways have not, the cumulative effect of any proposed development, when combined with all other existing and anticipated development, shall not increase the water surface elevation of the base flood more than one foot at any point.

(f) Development in areas of special flood hazard shall also comply with the applicable provisions outlined in *Table 1: Provisions for Flood Hazard Reduction*.

*Table 1: Provisions for Flood Hazard Reduction*

<b>Flood Zone</b>	<b>Foundations and Anchoring</b>
A, AO	<ul style="list-style-type: none"> <li>(1) All new construction and substantial improvements shall be anchored to prevent flotation, collapse and lateral movement of the structure.</li> <li>(2) All manufactured dwellings must likewise be anchored to prevent flotation, collapse and lateral movement, in accordance with the State of Oregon, Manufactured Dwelling Standard.</li> <li>(3) If foundation walls are used for manufactured dwellings either:               <ul style="list-style-type: none"> <li>(a) Base flood elevations must be established at the proposed site and the manufactured dwellings stand is situated a minimum of 2 feet above the BFE, or;</li> <li>(b) Base flood elevations must be established at the proposed building site and the foundation wall is opened on one side or end so that floodwaters cannot be trapped.</li> </ul> </li> </ul>
AE	<ul style="list-style-type: none"> <li>(1) All new construction and substantial improvements subject to less than 18 inches of flood water during a 100-year flood shall be anchored to prevent flotation, collapse and lateral movement.</li> <li>(2) All manufactured homes subject to less than 18 inches of flood water during a 100-year flood shall be anchored and/or supported to prevent flotation, collapse and lateral movement, in accordance with the State of Oregon, Manufactured Dwelling Standard.</li> <li>(3) All new construction, substantial improvements and manufactured homes subject to 18 inches or more of flood water during a 100-year flood, shall be anchored to prevent flotation, collapse, and lateral movement which may reasonably occur independently or combined. Designs for meeting this requirement shall be certified by an Oregon registered engineer or architect.</li> </ul>

**Attachment “B” Proposed Changes to Lane Code 16.244**

	<p>(5) Foundations for all new construction, substantial improvements, and manufactured homes subject to 18 inches or more of flood water during a 100-year flood or located within a designated floodway, shall be certified by an Oregon registered professional engineer or architect to meet the following minimum foundation requirements:</p> <ul style="list-style-type: none"> <li>(a) concrete footings sized for 1500 psf soil pressure unless data to substantiate the use of higher values are submitted.</li> <li>(b) footings extending below the frost line.</li> <li>(c) reinforced concrete, reinforced masonry, or other suitably designed supporting systems to resist all vertical and lateral loads which may reasonably occur independently or combined.</li> </ul> <p>(6) If foundation walls are used for manufactured dwellings either the stand shall be a minimum of two feet above the BFE unless the foundation wall is opened on one side or end so that floodwater cannot be trapped.</p>
<b>Flood Zone</b>	<b>Utilities</b>
A, AO	<ul style="list-style-type: none"> <li>(1) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.</li> <li>(2) New and replacement public or community sewerage facilities shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters; and</li> <li>(3) Whenever feasible, all new and replacement soil absorption systems must be setback a minimum of 25 feet from the SFHA. Where a suitable location for a standard (i.e. tank/ leach field) system is not available outside of the SFHA, new and replacement systems may be placed in the SFHA provided they are: <ul style="list-style-type: none"> <li>(a) designed to minimize or eliminate infiltration of flood waters into the system,</li> <li>(b) located at the highest elevation above the flood source as practicable,</li> <li>(c) located at the maximum perpendicular distance away from the flood source as practicable.</li> </ul> </li> </ul>

**Attachment “B” Proposed Changes to Lane Code 16.244**

AE	<p>(1) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system. Public water systems which utilize wells for a source(s) shall be constructed such that the top well elevation is at least two feet above the 100-year flood elevation.</p> <p>(2) New and replacement public or community sewerage facilities shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters.</p> <p>(3) Whenever feasible, all new and replacement soil absorption systems must be setback a minimum of 25 feet from the SFHA. Where a suitable location for a standard (i.e. tank/ leach field) system is not available outside of the SFHA, new and replacement systems may be placed in the SFHA provided they are:</p> <ul style="list-style-type: none"> <li>(a) designed to minimize or eliminate infiltration of flood waters into the system,</li> <li>(b) located at the highest elevation above the flood source as practicable,</li> <li>(c) located at the maximum perpendicular distance away from the flood source as practicable.</li> </ul>
<b>Flood Zone</b>	<b>Elevation: Residential</b>
A, AO	New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated four feet above the highest adjacent grade. Crawlspace construction is outlined in FEMA Technical Bulletin 11-01 entitled "Crawlspace Construction of Buildings located in Special Flood Hazard."
AE	New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to two feet above base flood elevation. Crawlspace construction is outlined in FEMA Technical Bulletin 11-01 entitled "Crawlspace Construction of Buildings located in Special Flood Hazard."
<b>Flood Zone</b>	<b>Elevation: Nonresidential</b>
A, AO	New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated four feet above grade; or, together with attendant utility and sanitary facilities, shall be flood-proofed to a level four feet above the highest adjacent grade, so the structure is watertight with walls substantially impermeable to the passage of water.
AE	<p>New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated to a level at least two feet above the base flood elevation; or, together with attendant utility and sanitary facilities shall:</p> <ul style="list-style-type: none"> <li>(a) be flood-proofed to two feet above the base flood level, so the structure is watertight with walls substantially impermeable to the passage of water;</li> </ul>

**Attachment “B” Proposed Changes to Lane Code 16.244**

	<ul style="list-style-type: none"> <li>(b) have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;</li> <li>(c) be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certification shall be provided to the Floodplain Administrator as set forth in LC 16.244(6)(h)). Nonresidential structures that are elevated, not flood-proofed, must meet the same standards as residential construction of fully enclosed areas below the lowest floor in AE zones.</li> <li>(d) Applicants flood-proofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the flood-proofed level (e.g., a building constructed to the base flood level will be rated as one foot below that level).</li> </ul>
<b>Flood Zone</b>	<b>Elevation of Manufactured Homes</b>
A	(1) All manufactured dwellings placed or substantially improved within A Zones shall be elevated so that the bottom of the longitudinal chassis frame beam is a minimum of four feet above the highest adjacent grade.
AE	(1) All manufactured homes that are placed or substantially improved within AE Zones shall be elevated so that the bottom of the longitudinal chassis frame beam is a minimum of two feet above the base flood elevation.
<b>Flood Zone</b>	<b>Elevation of Recreational Vehicles</b>
A, AE and AO	<p>In all Special Flood Hazard Areas recreational vehicles, which are an allowed use or structure permitted within the underlying base zone, must either:</p> <ul style="list-style-type: none"> <li>(a) Be placed on the site for fewer than 180 consecutive days</li> <li>(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 structures or addition, or</li> <li>(c) Meet all the permits requirements of LC 16.244(9), including the applicable elevation standards and anchoring requirements for Manufactured Dwellings.</li> </ul>
<b>Flood Zone</b>	<b>Enclosed Areas</b>
A	<p>Fully enclosed areas below the lowest floor shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect, or must meet or exceed the following minimum criteria:</p> <ul style="list-style-type: none"> <li>(a) A minimum of two openings located on separate walls having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding</li> </ul>

**Attachment “B” Proposed Changes to Lane Code 16.244**

	<p>shall be provided. The bottom of all openings shall be no higher than one foot above grade.</p> <p>(b) Openings shall be located to allow unrestricted cross-flow of floodwaters through the enclosed area from one side to the other.</p> <p>(c) Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.</p>
AE	<p>For residential construction, fully enclosed areas below the lowest floor shall be designed to automatically equalize hydrostatic flood forces in exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:</p> <p>(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. The bottom of all openings shall be no higher than one foot above grade.</p> <p>(b) Openings shall be located to allow unrestricted cross-flow of floodwaters through the enclosed area from one side to the other.</p> <p>(c) Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of flood waters.</p>
<b>Flood Zone</b>	<b>Roads</b>
A	Adequate provisions shall be made for accessibility during a 100-year flood, so as to ensure ingress and egress for ordinary and emergency vehicles and services during potential future flooding.
AE	<p>(1) Adequate provisions shall be made for accessibility during a 100-year flood, so as to ensure ingress and egress for ordinary and emergency vehicles and services during potential future flooding.</p> <p>(2) No road surface of any new street, road or access road shall be at an elevation less than one foot below the base flood height.</p>
<b>Flood Zone</b>	<b>Subdivisions and Partitions</b>
A	<p>(1) All land division proposals shall be consistent with the need to minimize flood damage;</p> <p>(2) All land division proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;</p> <p>(3) All land division proposals shall have adequate drainage provided to reduce exposure to flood damage; and</p> <p>(4) Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or five acres (whichever is less).</p>
A, AE and AO	(1) All land division proposals shall be consistent with the need to

**Attachment “B” Proposed Changes to Lane Code 16.244**

	<p>minimize flood damage.</p> <p>(2) All land division proposals shall have adequate drainage to reduce exposure to flood damage, including returning water.</p> <p>(3) 100-year flood elevation data shall be provided and shown on final partition maps and subdivision plats. Applicant must show the boundaries of the 100-year flood and floodway on the final partition maps and subdivision plats.</p> <p>(4) A permanent monument shall be established and maintained on land partitioned or subdivided showing the elevation in feet above mean sea level. The location of such monument shall be shown on the final partition map or subdivision plat.</p> <p>(5) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.</p> <p>(6) Residential building lots or parcels shall have adequate buildable area outside of Floodway in accordance with LC16.244(9)(d)(v).</p>
<b>Flood Zone</b>	<b>Wet Flood Proofing of Accessory Structures</b>
A, AE and AO	<p>Relief from the elevation or dry flood-proofing standards may be granted for an accessory structure containing no more than 400 square feet. Such a structure must meet the following standards:</p> <p>(1) The accessory structure shall be located on a property with a dwelling;</p> <p>(2) It shall not be used for human habitation and may be used solely for parking of vehicles or storage of items having low damage potential when submerged;</p> <p>(3) It shall be constructed of flood resistant materials;</p> <p>(4) It shall be constructed and placed on the lot to offer the minimum resistance to the flow of floodwaters;</p> <p>(5) It shall be firmly anchored to prevent flotation;</p> <p>(6) Services such as electrical and heating equipment shall be elevated or flood-proofed to or above the Flood Protection Elevation;</p> <p>(7) It shall be designed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater. Designs for complying with this requirement must be certified by a licensed professional engineer or architect or</p> <p style="padding-left: 40px;">(a) provide a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;</p> <p style="padding-left: 40px;">(b) the bottom of all openings shall be no higher than one foot above the higher of the exterior or interior grade or floor immediately below the opening;</p> <p style="padding-left: 40px;">(c) openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions without manual intervention.</p> <p>(8) All fertilizers, pesticides, automotive fuels and lubricants, paint thinners and other hazardous materials stored within a wet flood proofed structure must be stored in a secondary containment</p>

**Attachment “B” Proposed Changes to Lane Code 16.244**

	<p>vessel. The secondary containment vessel must be securely mounted above the flood protection level in such a manner that it cannot be inundated or become mobile during a base flood event.</p> <p>In addition to meeting the criteria listed above, applicants seeking a wet flood proofing permit must sign and have recorded a “ Wet Flood Proofing Covenant and Agreement” instrument, which permanently documents the use limitation of the structure.</p>
<b>Flood Zone</b>	<b>Fill Material</b>
A, AE and AO	<p>All fill must consist of soil and rock materials only. Dredged material may be used as fill only upon certification of suitability by a registered professional engineer. Landfills, dumps and sanitary landfills are not permitted in the SFHA. The use of fill shall not increase flooding or cause drainage problems on neighboring properties.</p> <p>All excavation and fill in the SFHA shall conform to the following balanced cut and fill standards:</p> <ol style="list-style-type: none"> <li>(1). No net fill in any floodplain is allowed. All fill placed in a floodplain shall be balanced with at least an equal amount of soil material removal.</li> <li>(2) Excavation areas shall not exceed fill areas by more than 50 percent of the square footage.</li> <li>(3) Any excavation below bankfull stage shall not count toward compensating for fill.</li> <li>(4) Excavation to balance a fill shall be located on the same parcel as the fill at a hydraulically equivalent site unless it is not reasonable or practicable to do so. In such cases, the excavation shall be located in the same drainage basin and as close as possible to the fill site, so long as the proposed excavation and fill will not increase flood impacts for surrounding properties as determined through hydrologic and hydraulic analysis.</li> </ol> <p>In addition to the balanced cut and fill standards listed above, all fill used to support structures must be compacted to 95% of the maximum density obtainable by the Standard Proctor Test (ASTM Standard D-698) or its equivalent, and its suitability to support structures certified by a registered professional engineer. Fill slopes shall be no greater than two horizontal to one vertical. Flatter slopes may be required where velocities may result in erosion. Adequate erosion protection must be provided for fill slopes exposed to moving flood waters (slopes exposed to flows with velocities of up to 5 feet per second (fps) during the base flood must, at a minimum, be protected by a permanent cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the base flood must, at a minimum, be protected by appropriately designed stone, rock, concrete, or other durable products.</p>
<b>Flood Zone</b>	<b>Alteration of a Watercourse</b>

Attachment "B" Proposed Changes to Lane Code 16.244

A, AE and AO	<p>A water course is considered altered when any change occurs within its banks, including installation of new culverts and bridges, or size modifications to existing culverts and bridges. The following provisions apply to the alteration of watercourse.</p> <ol style="list-style-type: none"><li>(1) The bankfull stage flood carrying capacity of the altered or relocated portion of the water course shall not be diminished. Prior to issuance of a floodplain development permit, the applicant must submit a description of the extent to which any water course will be altered or relocated as a result of the proposed development and submit certification by a registered professional engineer that the bankfull flood carrying capacity of the water course will not be diminished.</li><li>(2) Adjacent communities, the U.S. Army Corps of Engineers, Oregon Department of State Lands, and Oregon Department of Land Conservation and Development must be notified prior to any alteration or relocation of a water source. Evidence of notification must be submitted to the floodplain administrator and to the Federal Emergency Management Agency.</li><li>(3) The applicant shall be responsible for providing the necessary maintenance for the altered or relocated portion of the water course so that the flood carrying capacity will not be diminished.</li></ol>
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(10) Emergency Permits. The Floodplain Administrator may issue an emergency permit orally or in writing:

(a) If issued orally, a written permit shall follow within five days confirming the issuance and setting forth the conditions of operation.

(b) Emergency permits may be issued to protect existing shorelines or structures under immediate threat by flood or storm waters or for the prevention of channel changes that threaten immediate and significant loss of property.

(c) A representative of Lane County may inspect the project site to verify that an emergency condition exists and that the emergency action will not significantly impact water resources.

(d) Emergency permits shall be in effect for the time required to complete the authorized emergency action and shall not exceed 60 days.

(e) The emergency permit shall be circulated for public information within 10 days of issuance.

(f) The Floodplain Administrator shall condition emergency permits to protect and conserve the waters of this County.

(11) Variance Procedures.

(a) Scope. Variance to a requirement standard or procedure of this ordinance, with respect to the provisions for flood hazard reduction, may be approved by the Floodplain Administrator if an application is submitted, reviewed and approved pursuant to the criteria for approving variances in LC 16.256, and the application complies with the additional criteria listed below.

(i) Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places of the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this subsection.

**Attachment “B” Proposed Changes to Lane Code 16.244**

(ii) Variances for residential uses or structures shall not be issued within any designated floodway. Variances for other encroachments may be possible if it can be demonstrated that no increase in flood levels during a base flood discharge would result.

(b) Conditions. Reasonable conditions may be established in connection with a variance as deemed necessary to secure the purpose and requirements of this ordinance. In cases where a variance is granted to allow residential construction with a lowest floor elevation below the required minimum elevation, or nonresidential flood-proofing below the required minimum elevation, the applicant shall record a deed covenant, that the cost of flood insurance will be commensurable with the increased risk resulting from the reduced floor elevation of flood-proofing. *(Revised by Ordinance No. 7-87, Effective 6.17.87; 12-87, 8.13.87; 19-87, 10.14.87; 3-91, 5.17.91; 2-98, 4.8.98; 1-07, 3.23.07)*

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