



**Oregon**

Theodore R. Kubongski, Governor

**Department of Land Conservation and Development**

635 Capitol Street, Suite 150

Salem, OR 97301-2540

(503) 373-0050

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www.lcd.state.or.us



**NOTICE OF ADOPTED AMENDMENT**

9/16/2009

**TO:** Subscribers to Notice of Adopted Plan  
or Land Use Regulation Amendments

**FROM:** Plan Amendment Program Specialist

**SUBJECT:** City of North Bend Plan Amendment  
DLCD File Number 002-09

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. A Copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures\*

**DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL:** Wednesday, September 30, 2009

This amendment was submitted to DLCD for review prior to adoption. Pursuant to ORS 197.830(2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

**\*NOTE:** THE APPEAL DEADLINE IS BASED UPON THE DATE THE DECISION WAS MAILED BY LOCAL GOVERNMENT. A DECISION MAY HAVE BEEN MAILED TO YOU ON A DIFFERENT DATE THAT IT WAS MAILED TO DLCD. AS A RESULT, YOUR APPEAL DEADLINE MAY BE EARLIER THAN THE ABOVE DATE SPECIFIED.

**Cc:** David Voss, City of North Bend  
Gloria Gardiner, DLCD Urban Planning Specialist  
Chris Shirley, FEMA Specialist  
Dave Perry, DLCD Regional Representative

<paa> YA

2007

# 2 Notice of Adoption

THIS FORM MUST BE MAILED TO DLCD  
WITHIN 5 WORKING DAYS AFTER THE FINAL DECISION  
PER ORS 197.610, OAR CHAPTER 660 - DIVISION 18

D A T E  S T A M P	DEPT OF
	SEP 10 2009
	For DLCD Use Only
	LAND CONSERVATION AND DEVELOPMENT

Jurisdiction: City of North Bend Local file number: NA  
Date of Adoption: 9/8/2009 Date Mailed: 9/9/2009  
Date original Notice of Proposed Amendment was mailed to DLCD: 6/19/2009

- |   |   |
|---|---|
| <input type="checkbox"/> Comprehensive Plan Text Amendment        | <input type="checkbox"/> Comprehensive Plan Map Amendment |
| <input checked="" type="checkbox"/> Land Use Regulation Amendment | <input checked="" type="checkbox"/> Zoning Map Amendment  |
| <input type="checkbox"/> New Land Use Regulation                  | <input type="checkbox"/> Other: _____                     |

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached".

**Amended Chapter 18.48 Floodplain Zone F-P, Title 18 Zoning, North Bend  
Municipal Code and adoption of new DFIRM Maps dated 09/25/09.**

Describe how the adopted amendment differs from the proposed amendment. If it is the same, write "SAME".  
If you did not give Notice for the Proposed Amendment, write "N/A".  
**Same.**

Plan Map Changed from: \_\_\_\_\_ to: \_\_\_\_\_  
Zone Map Changed from: **1984 FIRM Maps** to: **2009 DFIRM Maps**  
Location: **Pony Creek and waterfront areas** Acres Involved: **+/- 300**  
Specify Density: Previous: \_\_\_\_\_ New: \_\_\_\_\_  
Applicable Statewide Planning Goals: **7**  
Was and Exception Adopted?  YES  NO

DLCD File No.: 002-09 (17666) [15711]

Did the Department of Land Conservation and Development receive a Notice of Proposed Amendment.....

Forty-five (45) days prior to first evidentiary hearing?  Yes  No

If no, do the statewide planning goals apply?  Yes  No

If no, did Emergency Circumstances require immediate adoption?  Yes  No

Affected State or Federal Agencies, Local Governments or Special Districts:

**FEMA, NFIP, Coos-Bay North Bend Water Board**

Local Contact: **David Voss** Phone: **(541) 756-8535** Extension: \_\_\_\_\_

Address: **PO Box "B"** City: **North Bend**

Zip Code + 4: **97459-14** Email Address: **planner@uci.net**

## ADOPTION SUBMITTAL REQUIREMENTS

This form **must be mailed** to DLCD **within 5 working days after the final decision**  
per ORS 197.610, OAR Chapter 660 - Division 18.

1. Send this Form and TWO (2) Copies of the Adopted Amendment to:

**ATTENTION: PLAN AMENDMENT SPECIALIST  
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT  
635 CAPITOL STREET NE, SUITE 150  
SALEM, OREGON 97301-2540**

2. Submit **TWO (2) copies** the adopted material, if copies are bounded please submit **TWO (2) complete copies** of documents and maps.
3. Please Note: Adopted materials must be sent to DLCD not later than **FIVE (5) working days** following the date of the final decision on the amendment.
4. Submittal of this Notice of Adoption must include the text of the amendment plus adopted findings and supplementary information.
5. The deadline to appeal will not be extended if you submit this notice of adoption within five working days of the final decision. Appeals to LUBA may be filed within **TWENTY-ONE (21) days** of the date, the Notice of Adoption is sent to DLCD.
6. In addition to sending the Notice of Adoption to DLCD, you must notify persons who participated in the local hearing and requested notice of the final decision.
7. **Need More Copies?** You can copy this form on to 8-1/2x11 green paper only; or call the DLCD Office at (503) 373-0050; or Fax your request to:(503) 378-5518; or Email your request to **mara.ulloa@state.or.us** - ATTENTION: PLAN AMENDMENT SPECIALIST.

**ORDINANCE NO. 1972**

**AN ORDINANCE AMENDING THE NORTH BEND MUNICIPAL CODE, TITLE 18 ZONING, CHAPTER 18.48 FLOODPLAIN ZONE F-P; DECLARING AN EMERGENCY, EFFECTIVE UPON ADOPTION.**

**THE CITY OF NORTH BEND ORDAINS AS FOLLOWS:**

**Section 1.** The Council of the City of North Bend finds:

- (1) The City received notice from the Federal Emergency Management Agency (FEMA) that new preliminary Digitized Flood Insurance Rate Maps (DFIRMs) and a new Flood Insurance Study (FIS) had been prepared and released for all areas of Coos County in October of 2008. The notice was dated September 25, 2008. This commenced a one-year review and adoption period that is ending as of September 25, 2009. FEMA has also required that the City review and amend its floodplain regulations to comply with Title 44 of the Code of Federal Regulations (44 CFR), Section 60.3, which pertain to eligibility for participation in the National Flood Insurance Program (NFIP) as part of this process.
- (2) The initial review by City staff revealed that substantial changes to the floodplain boundary had occurred on the new DFIRMs within the City of North Bend. FEMA informed staff that the expanded boundaries of the new floodplain could not be challenged or appealed because the Base Flood Elevation had not been changed.
- (3) City staff attended meetings with FEMA representatives and staff from the Oregon Department of Land Conservation and Development (DLCD). The City received a Model Floodplain Ordinance and a preliminary comparison review of the existing City Floodplain Code, Chapter 18.48.
- (4) The North Bend City Planning Commission held numerous public discussions regarding these matters during their regular public meetings between February and June of 2009. Notice for said public meetings was published in The World newspaper.
- (5) A draft amended Chapter 18.48 was sent to DLCD for their review and comment in early June, 2009. The initial review was positive. A formal Notice of Proposed Amendment was mailed to DLCD on June 19, 2009.
- (6) The North Bend Planning Commission held a public hearing on the proposed amended Chapter 18.48 Floodplain Zone F-P on August 17, 2009. Approximately 400 notices of the hearing, along with so-called "Measure 56" notices required by Oregon Revised Statutes (ORS 227.186) were mailed to affected property owners on July 27, 2009.

- (7) Two persons representing the Coquille Indian Tribe testified on the record that information they have collected to date seems to indicate that there are substantial flaws and errors in the new DFIRM floodplain boundary locations. A map showing some of the discrepancies they believe they have discovered using LIDAR topographic data was also submitted into the record and accepted by the Planning Commission Chair. No one else spoke during the hearing.
- (8) A summary of the issues and the unanimous recommendation of the Planning Commission to adopt the proposed amended ordinance were presented to the North Bend City Council at their regular meeting on September 8, 2009.
- (9) North Bend City Council held a public hearing on September 8, 2009 concerning adoption of the proposed amendments to Chapter 10.12 Transportation Facilities and Improvements. Notice for said public hearing was published as required by law.
- (10) The North Bend City Council found that the proposed amendments were necessary to clarify under what circumstances the requirements and regulations of Chapter 10.12 must be met.

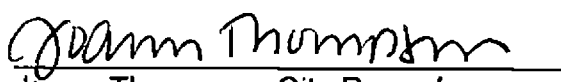
**Section 2: The North Bend City Council hereby repeals the existing Chapter 18.48 Floodplain Zone F-P of Title 18 Zoning, North Bend Municipal Code, and hereby adopts the amended Chapter 18.48 Floodplain Zone F-P of Title 18 Zoning, North Bend Municipal Code, attached to this Ordinance as Exhibit "A".**

**Section 3: The North Bend City Council hereby declares an emergency in the adoption of this Ordinance, and the Ordinance shall take effect immediately upon passage.**

Passed and enacted by the Council of the City of North Bend on Sept. 8, 2009.

  
Rick Wetherell, Mayor

ATTEST:

  
Joann Thompson, City Recorder

**Chapter 18.48**

**FLOODPLAIN ZONE F-P**

**Sections:**

- 18.48.010 Definitions.
- 18.48.020 Lands to which this chapter applies.
- 18.48.030 Development permits.
- 18.48.040 Duties and responsibilities of the local administrator.
- 18.48.050 General standards and provisions.
- 18.48.060 Subdivisions.
- 18.48.070 Residential construction.
- 18.48.080 Nonresidential construction.
- 18.48.090 Manufactured homes.
- 18.48.100 Recreational vehicles.
- 18.48.110 Below-grade crawl spaces.
- 18.48.120 Floodway.
- 18.48.130 Critical facilities.
- 18.48.140 Variances and appeals.
- 18.48.150 Warning and disclaimer of liability.

**18.48.010 Definitions**

Unless specifically defined below, words or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage and to give this chapter the most reasonable application.

(1) "Appeal" means a request for a review of the interpretation of any provision of this chapter or a request for a variance.

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

(3) "Base flood" means the flood having a one percent chance of being equaled or exceeded in any given year. It is also referred to as the "100-year flood." Designation on maps always includes the letters A or V.

(4) "Basement" means any area of the building having its floor subgrade (below ground level) on all sides.

(5) "Below grade crawl space" means 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

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

(7)“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.

(8)“Elevated building” means for insurance purposes, a nonbasement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.

(9)“Existing manufactured home park or subdivision” means a manufactured home park subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the adopted floodplain management regulations.

(10)“Expansion to an existing manufactured home park or subdivision” means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

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

- a) The overflow of inland or tidal waters and/or
- b) The unusual and rapid accumulation of runoff of surface waters from any source.

(12)“Flood insurance rate map (FIRM)” means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

(13)“Flood insurance study” means 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.

(14)“Floodway” means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

(15)“Lowest floor” means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage, in an area other than a basement area, is not considered a building’s lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this chapter found at Section 5.2-1(2).

(16)“Manufactured home” means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured home” does not include a “recreational vehicle.”

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

(18)“New construction” means structures for which the “start of construction” commenced on or after the effective date of this chapter.

(19) "New manufactured home park or subdivision" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of adopted floodplain management regulations

(20) "Recreational vehicle" means a vehicle which is:

- a) Built on a single chassis;
- b) 400 square feet or less when measured at the largest horizontal projection;
- c) Designed to be self-propelled or permanently towable by a light duty truck; and
- d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

(21) "Start of construction" includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on 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 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 that alteration affects the external dimensions of the building.

(22) "State building code" means the combined specialty codes.

(23) "Structure" means a walled and roofed building including a gas or liquid storage tank that is principally above ground.

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

(25) "Substantial improvement" means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:

- (a) Before the improvement or repair is started; or
- (b) If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.

The term does not, however, include either:



(c) 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

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

(26) "Variance" means a grant of relief from the requirements of this chapter which permits construction in a manner that would otherwise be prohibited by this chapter.

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

#### **18.48.020 Lands to which this chapter applies.**

This chapter shall apply to all areas of special flood hazards within the jurisdiction of the city. The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for Coos County, Oregon and Incorporated Areas", dated September 25, 2009 with accompanying Flood Insurance Rate Maps are hereby adopted by reference and declared to be a part of this title. The Flood Insurance Study and Flood Insurance Rate Maps are on file at city hall. The areas of special flood hazard constitute the city overlay zone Floodplain F-P wherein the contents of this chapter apply in addition to any other zoning requirements of this title and/or title 17 subdivisions.

#### **18.48.030 Development Permits.**

A development permit shall be obtained before construction or development begins within any area of special flood hazard established by this chapter. The permit shall be for all structures including manufactured homes and for all development including fill and other activities described in the definitions of this chapter. Application for a development permit shall be made on forms furnished by the city and may include but not be limited to plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, and drainage facilities. Specifically, the following information is required:

(1) Elevation in relation to the North American Vertical Datum of 1988 (NAVD 88), of the lowest floor (including basement) of all structures;

(2) Elevation in relation to the North American Vertical Datum of 1988 (NAVD 88) of floodproofing in any structure;

(3) Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in Section 18.48.080; and

(4) Description of the extent to which a watercourse will be altered or relocated as a result of proposed development.

#### **18.48.040 Duties and responsibilities of the local administrator.**

The city planner shall administer and implement this chapter by granting or denying development permit applications in accordance with its provisions. Duties shall include, but not be limited to:

- (1) Make interpretations where needed, as to location of the boundaries of the areas of special flood hazards.
- (2) Review all development permits to determine that the permit requirements and conditions of this chapter have been satisfied.
- (3) Review all development permits to determine that all necessary permits have been obtained from those Federal, State, or local governmental agencies from which prior approval is required.
- (4) Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of Section 18.48.120(1) are met.
- (5) Notify adjacent communities, the Department of Land Conservation and Development and other appropriate state and federal agencies, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.
- (6) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.
- (7) Obtain and record the actual elevation in relation to the North American Vertical Datum of 1988 (NAVD 88) of the lowest floor including basements and below-grade crawlspaces of all new or substantially improved structures, and whether or not the structure contains a basement.
- (8) For all new or substantially improved floodproofed structures where base flood elevation data is provided through the Flood Insurance Study and FIRM:
  - a) Verify and record the actual elevation (in relation to the North American Vertical Datum of 1988 (NAVD 88)), and
  - b) Maintain the floodproofing certifications required by this chapter.
- (9) Maintain for public inspection all records pertaining to the provisions of this chapter.

#### **18.48.050 General standards and provisions.**

In all areas of special flood hazards, the following standards are required:

- (1) All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.
- (2) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- (3) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
- (4) 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.
- (5) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

(6) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters; and,

(7) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality.

#### **18.48.060 Subdivisions.**

The following standards and provisions shall apply to any proposed subdivision containing territory within the special flood hazard area:

(1) All subdivision proposals shall be consistent with the need to minimize flood damage;

(2) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage;

(3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and,

(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 5 acres, whichever is less.

#### **18.48.070 Residential construction.**

The following standards and provisions shall apply to residential construction within the special flood hazard area:

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

(2) Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must be either certified by a registered professional engineer or architect or 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 grade. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

#### **18.48.080 Nonresidential construction.**

New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated at or above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

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

(2) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

(3) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the city planner and building official.

(4) Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in Section 18.48.070(2);

(5) Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level. Buildings floodproofed to the base flood level will be rated as one foot below.

#### **18.48.090 Manufactured homes.**

All manufactured homes must likewise be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors as per the "Manufactured Home Installation in Flood Hazard Areas" guidebook available from the Federal Emergency Management Agency (FEMA).

(1) All manufactured homes to be placed or substantially improved on sites:

(a) Outside of a manufactured home park or subdivision,

(b) In a new manufactured home park or subdivision,

(c) In an expansion to an existing manufactured home park or subdivision,  
or

(d) In an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood; it shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to a minimum of eighteen (18) inches above the base flood elevation and be securely anchored to an adequately designed foundation system to resist flotation, collapse and lateral movement.

(2) Manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision within Zones A1-30, AH, and AE on the community's FIRM that are not subject to the above manufactured home provisions be elevated so that either:

(a) The lowest floor of the manufactured home is elevated to a minimum of eighteen (18) inches above the base flood elevation, or

(b) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately designed foundation system to resist flotation, collapse, and lateral movement.

**18.48.100 Recreational vehicles.**

Recreational vehicles placed on sites are required to either:

- (1) Be on the site for fewer than 180 consecutive days
- (2) Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
- (3) Meet the requirements of 18.48.090 above and the elevation and anchoring requirements for manufactured homes.

**18.48.110 Below-grade crawl spaces.**

There are increased flood insurance costs associated with below-grade crawlspaces. Below-grade crawlspaces are allowed subject to the following standards as found in FEMA Technical Bulletin 11-01, *Crawlspace Construction for Buildings Located in Special Flood Hazard Areas*:

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

(2) The crawlspace is an enclosed area below the base flood elevation (BFE) and, as such, must have openings that equalize hydrostatic pressures by allowing the automatic entry and exit of floodwaters. The bottom of each flood vent opening can be no more than one (1) foot above the lowest adjacent exterior grade.

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

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

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

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

(7) There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event. The type of drainage system will vary because of

the site gradient and other drainage characteristics, such as soil types. Possible options include natural drainage through porous, well-drained soils and drainage systems such as perforated pipes, drainage tiles or gravel or crushed stone drainage by gravity or mechanical means.

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

For more detailed information refer to FEMA Technical Bulletin 11-01.

#### **18.48.120 Floodway.**

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

(1) Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional civil engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge

(2) If Subsection (1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Sections 18.48.050 through 18.48.090.

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

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

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

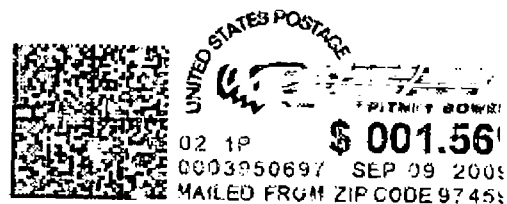
(c) No structures would be impacted by a potential rise in flood elevation; and,

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

(4) New installations of manufactured dwellings are prohibited. Manufactured dwellings may only be located in floodways according to one of the following conditions:

(a) If the manufactured dwelling already exists in the floodway, the placement was permitted at the time of the original installation, and the continued use is not a threat to life, health, property, or the general welfare of the public; or

(b) A new manufactured dwelling is replacing an existing manufactured dwelling whose original placement was permitted at the time of installation and the replacement home will not be a threat to life, health, property, or the general welfare of the public and it meets the following criteria:



ATTN: PLAN AMENDMENT SPECIALIST  
DEPT. OF LAND CONSERVATION AND DEVELOPMENT.  
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