

ORDINANCE NO. 4650

AN ORDINANCE RELATING TO THE BUILDING CODE AMENDING BEAVERTON CODE SECTIONS 8.02.015(A) AND 8.02.140 RELATING TO FLOOD-RESISTANT CONSTRUCTION

WHEREAS, the State Building Code contains Appendix G Flood-Resistant Construction that can be adopted by the City as necessary to provide standards for construction material, methods, and practices that minimize flood damage to buildings and structures; and

WHEREAS, the State recently adopted a new State Building Code that includes a revised Appendix G Flood-Resistant Construction that contains updated nationally recognized and accepted standards for construction material, methods, and practices that minimize flood damage to buildings and structures; and

WHEREAS, the City of Beaverton desires to have the most current standards for construction material, methods, and practices that minimize flood damage to buildings and structures; now therefore,

THE CITY OF BEAVERTON ORDAINS AS FOLLOWS:

Section 1. BC 8.02.015 (A) is amended to read as follows:

8.02.015 State Codes. The following State Specialty Codes are adopted as part of the Beaverton Code except as otherwise provided in this ordinance:

A. State of Oregon Structural Specialty Code, as adopted by ORS 455.010 through 455.895, OAR 918-460-010 through 918-460-015 including Appendix G Flood-Resistant Construction Sections: G101, G102, G103.1 through G103.3, G103.8, G104.1, G105, G201, G401.3 through G401.5, G501, G601, G701, G1001 and G1101, as amended*, and including Appendix AN Section 109.4.2 – Alternative Fire Sprinkler Requirements (“Structural Specialty Code”);

* Amendments to Appendix G, Flood Resistant-Construction, are set forth in BC 8.02.140.

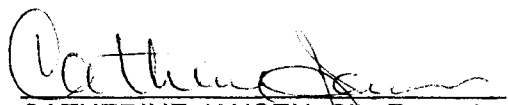
Section 2. BC 8.02.140 Structural Specialty Code Appendix G Flood Resistant Construction is amended to read as indicated in the attached Exhibit A.

First reading this 13th day of January, 2015.

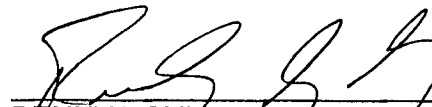
Passed by the Council this 3rd day of February, 2015.

Approved by the Mayor this 4th day of February, 2015.

ATTEST:


CATHERINE JANSEN, City Recorder

APPROVED:


DENNY DOYLE, Mayor
by Randy Ealy, Mayor Pro Tem

**APPENDIX G
FLOOD-RESISTANT CONSTRUCTION**

**SECTION G101
ADMINISTRATION**

G101.1 Purpose. The purpose of this appendix is to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific flood hazard areas through the establishment of comprehensive regulations for management of flood hazard areas designed to:

1. Prevent unnecessary disruption of commerce, access and public service during times of flooding;
2. Manage the alteration of natural flood plains, stream channels, and shorelines;
3. Manage filling, grading, dredging, and other development which may increase flood damage or erosion potential;
4. Prevent or regulate the construction of flood barriers which will divert floodwaters or which can increase flood hazards; and
5. Contribute to improved construction techniques in the flood plain.

G101.2 Objectives. The objectives of this appendix are to protect human life, minimize the expenditure of public money for flood control projects, minimize the need for rescue and relief efforts associated with flooding, minimize prolonged business interruption, minimize damage to public facilities and utilities, help maintain a stable tax base by providing for the sound use and development of flood-prone areas, contribute to improved construction techniques in the flood plain, and ensure that potential owners and occupants are notified that property is within flood hazard areas.

G101.3 Scope. The provisions of this appendix shall apply to all proposed development in a flood hazard area established in Section G102.2.

G101.4 Violations. Any violation of a provision of this appendix, or failure to comply with a permit or variance issued pursuant to this appendix or any requirement of this appendix, shall be handled in accordance with BC 8.01.900 and 8.02.020.

**SECTION G102
APPLICABILITY**

G102.1 General. This appendix, in conjunction with the Oregon Structural Specialty Code (OSSC), provides minimum requirements for development located in flood hazard areas, including the installation of utilities, placement and replacement of manufactured homes, new construction and repair, reconstruction, rehabilitation, or additions to new construction and substantial improvement of existing buildings and structures, including restoration after damage, and utility and miscellaneous Group U buildings and structures.

G102.2 Establishment of flood hazard areas. Flood hazard areas are established by BC 9.05.015 and the City of Beaverton Development Code, Ordinance 2050, Section 60.10.10.

**SECTION G103
POWERS AND DUTIES**

G103.1 Permit applications. The building official shall review all building permit applications to determine whether the development sites will be reasonably safe from flooding. If a proposed development site is in a flood prone area, all new construction and substantial improvements (including the placement of prefabricated buildings and manufactured homes) shall be designed and constructed with methods, practices and materials that minimize flood damage and that are in accordance with this code and ASCE 24.

G103.2 Other permits. It shall be the responsibility of the building official to assure that approval of a proposed development shall not be given until proof that necessary permits have been granted by federal or state agencies having jurisdiction over such development.

G103.3 Determination of design flood elevations. If design flood elevations are not specified, the building official is authorized to require the applicant to:

1. Obtain, review, and reasonably utilize data available from a federal, state, or other source, or
2. Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering techniques. Such analyses shall be performed and sealed by a registered design professional. Studies, analyses, and computations shall be submitted in sufficient detail to allow review and approval by the building official. The accuracy of data submitted for such determination shall be the responsibility of the applicant.

G103.4 through G103.7: Not Adopted.

G103.8 Records. The building official shall maintain a permanent record of all building permits issued in flood hazard areas including copies of inspection reports and certifications required by OSSC Section 1612.

SECTION G104

PERMITS

G104.1 Required. Any person, owner, or authorized agent who intends to conduct any development in a flood hazard area shall first make application to the building official and shall obtain the required permits as required in the OSSC.

G104.2 through 104.5: Not Adopted.

SECTION G105

VARIANCES

G105.1 General. The board of appeals established pursuant to BC 8.02.030 shall hear and decide requests for variances on buildings and structures and their appurtenances regulated by this appendix. The board of appeals shall base its determinations on technical justifications, and has the right to attach such conditions to variances as it deems necessary to further the purposes and objective of this appendix and Section 1612 of the OSSC.

G105.2 Records. The building official shall maintain a permanent record of all variance actions including justification for their issuance.

G105.3 Historic structures. A variance is authorized to be issued for the repair or rehabilitation of a historic structure upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure, and the variance is the minimum necessary to preserve the historic character and design of the structure.

Exception: Within flood hazard areas; historic structures that are not:

- a. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; or
- b. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district;
- c. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

G105.4 Functionally dependent facilities. A variance is authorized to be issued for the construction or substantial improvement of a functionally dependent facility provided the criteria in Section 1612.1 are met and the variance is the minimum necessary to allow the construction or substantial improvement, and that all due consideration has been given to methods and materials that minimize flood damages during the design flood and create no additional threats to public safety.

G105.5 Restrictions. The board of appeals shall not issue a variance for any proposed development in a floodway if any increase in flood levels would result during the base flood discharge.

G105.6 Considerations. In reviewing applications for variances, the board of appeals shall consider all technical evaluations, all relevant factors, all other portions of this appendix and the following:

1. The danger that materials and debris may be swept onto other lands resulting in further injury or damage;
2. The danger to life and property due to flooding or erosion damage;
3. The susceptibility of the proposed development, including contents, to flood damage and the effect of such damage on current and future owners;
4. The importance of the services provided by the proposed development to the community;
5. The availability of alternate locations for the proposed development that are not subject to flooding or erosion;
6. The compatibility of the proposed development with existing and anticipated development;
7. The relationship of the proposed development to the comprehensive plan and flood plain management program for that area;
8. The safety of access to the property in times of flood for ordinary and emergency vehicles;
9. The expected heights, velocity, duration, rate of rise and debris and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and
10. The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, streets, and bridges.

G105.7 Conditions for issuance. Variances shall only be issued by the board of appeals upon:

1. A technical showing of good and sufficient cause that the unique characteristics of the size, configuration, or topography of the site renders the elevation standards inappropriate;
2. A determination that failure to grant the variance would result in exceptional hardship by rendering the lot undevelopable;
3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, nor create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances;
4. A determination that the variance is the minimum necessary, considering the flood hazard, to afford relief; and

5. Notification to the applicant in writing over the signature of the building official that the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage, and that such construction below the base flood level increases risks to life and property.

SECTION G201

DEFINITIONS

G201.1 General. The following words and terms shall, for the purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 of the OSSC for general definitions.

G201.2 Definitions.

DEVELOPMENT. 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 located within the area of special flood hazard.

FUNCTIONALLY DEPENDENT FACILITY. A facility which cannot be used for its intended purpose unless it is located or carried out in close proximity to water; such as a docking or port facility necessary for the loading or unloading of cargo or passengers, shipbuilding, or ship repair. The term does not include long-term storage, manufacture, sales, or service facilities.

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 connected to the required utilities, and as further defined by ORS 446.003. For floodplain regulation purposes the term "manufactured home" also includes recreational vehicles, park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days if permitted to be placed on a permanent foundation, permanently connected to utilities, or anchored to the land. For insurance purposes the term "manufactured home" does not include park trailers, travel trailers, and other similar vehicles.

MANUFACTURED HOME PARK OR SUBDIVISION. A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

RECREATIONAL VEHICLE. A vehicle with or without motive power, which is designed for human occupancy and to be used temporarily for recreational, seasonal, or emergency purposes and specifically includes camping trailers, camping vehicles, motor homes, park trailers, bus conversions, van conversions, tent trailers, travel trailers, truck campers, combination vehicles which include a recreational vehicle use, and any vehicle converted for use or partial use as a recreational vehicle. Recreational vehicle does not include a station wagon, sports utility vehicle, van, bus, truck cab-over, utility vehicle or special use vehicle capable of providing eating or sleeping facilities unless the vehicle is also equipped with a holding tank, liquid petroleum gas or a 110 to 240 volt electrical systems to be used in conjunction with the eating or sleeping facilities. If identified in some manner as a recreation vehicle by the manufacturer or registered as such with the State, it is prima facie a recreation vehicle. For floodplain regulation purposes, such vehicles shall be fully licensed and ready for highway use on wheels or jacking system and attached to the land only by quick disconnect type utilities and security devices and have no permanently attached additions.

VARIANCE. A grant of relief from the requirements of this section which permits construction in a manner otherwise prohibited by this section where specific enforcement would result in unnecessary hardship.

VIOLATION. A development that is not fully compliant with this appendix or Section 1612, as applicable.

SECTION G301: Not Adopted

SUBDIVISIONS

**SECTION G401
SITE IMPROVEMENT**

G401.1 through G401.2: Not Adopted.

G401.3 Sewer facilities. All new or replaced sanitary sewer facilities, private sewage treatment plants (including all pumping stations and collector systems) and on-site waste disposal systems shall be designed in accordance with Chapter 8, ASCE 24, to minimize or eliminate infiltration of floodwaters into the facilities and discharge from the facilities into floodwaters, or impairment of the facilities and systems.

G401.4 Water facilities. All new replacement water facilities shall be designed in accordance with the provisions of Chapter 8, ASCE 24, to minimize or eliminate infiltration of floodwaters into the systems.

G401.5 Storm drainage. Storm drainage shall be designed to convey the flow of surface waters to minimize or eliminate damage to persons or property.

Section G401.6: Not Adopted.

**SECTION G501
MANUFACTURED HOMES**

G501.1 Elevation. All new and replacement manufactured homes to be placed or substantially improved in a flood hazard area shall be elevated such that the lowest floor of the manufactured home is elevated to or above the design flood elevation.

G501.2 Foundations. All new and replacement manufactured homes, including substantial improvement of existing manufactured homes, shall be placed on a permanent, reinforced foundation that is designed in accordance with Section 1612 of the OSSC.

G501.3 Anchoring. All new and replacement manufactured homes to be placed or substantially improved in a flood hazard area shall be installed using methods and practices which minimize flood damage. Manufactured homes shall be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement. Methods of anchoring are authorized to include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.

**SECTION G601
RECREATIONAL VEHICLES**

G601.1 Placement prohibited. The placement of recreational vehicles shall not be authorized in flood hazard areas subject to high velocity wave action and in floodways.

G601.2 Temporary placement. Recreational vehicles in flood hazard areas shall be fully licensed and ready for highway use, and shall be placed on a site for less than 180 consecutive days.

G601.3 Permanent placement. Recreational vehicles that are not fully licensed and ready for highway use, or that are to be placed on a site for more than 180 consecutive days, shall meet the requirements of Section G501 for manufactured homes.

**SECTION G701
TANKS**

G701.1 Underground Tanks. Underground tanks in flood hazard areas shall be anchored to prevent flotation, collapse, or lateral movement resulting from hydraulic loads, including the effects of buoyancy, during conditions of the design flood.

G701.2 Above-ground tanks. Above-ground tanks in flood hazard areas shall be elevated to or above the design flood elevation or shall be anchored or otherwise designed and constructed to prevent flotation, collapse, or lateral movement resulting from hydrodynamic or hydrostatic loads, including the effects of buoyancy, during conditions of the design flood.

G701.3 Tank inlets and vents. In flood hazard areas, tank inlets, fill openings, outlets, and vents shall be:

1. At or above the design flood elevation or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the design flood.
2. Anchored to prevent lateral movement resulting from hydrodynamic or hydrostatic loads, including the effects of buoyancy, during conditions of the design flood.

**SECTION G801: Not Adopted
OTHER BUILDING WORK**

**SECTION G901: Not Adopted
TEMPORARY STRUCTURES AND TEMPORARY STORAGE**

**SECTION G1001
UTILITY AND MISCELLANEOUS Group U**

Utility and miscellaneous Group U. Utility and miscellaneous Group U includes buildings that are accessory in character and miscellaneous structures not classified in any specific occupancy in the OSSC, including, but not limited to agricultural buildings, aircraft hangars (accessory to a one- or two-family residence), barns, carports, fences not more than 7 feet high, grain silos (accessory to a residential occupancy), greenhouses, livestock shelters, private garages, retaining walls, sheds, stables and towers. .

G1001.2 Flood Loads. Utility and miscellaneous Group U buildings and structures, including substantial improvement of such buildings and structures, shall be anchored to prevent flotation, collapse or lateral movement resulting from flood loads, including the effects of buoyancy, during conditions of the design flood.

G1001.3 Elevation. Utility and miscellaneous Group U buildings and structures, including substantial improvements of such buildings and structures, shall be elevated such that the lowest floor, including basement, is elevated to or above the design flood elevation in accordance with Section 1612 of the OSSC.

G1001.4 Enclosure below design flood elevation. Fully enclosed areas below the design flood elevation shall be at or above grade on all sides and conform to the following:

1. In flood hazard areas not subject to high-velocity wave action, enclosed areas shall have flood openings to allow for the automatic inflow and outflow of floodwaters.

G1001.5 Flood-damage-resistant materials. Flood-damage-resistant materials shall be used below the design flood elevation.

G1001.6 Protection of mechanical, plumbing and electrical systems. Mechanical, plumbing and electrical systems, including plumbing fixtures, shall be elevated to or above the design flood elevation. Exception. Electrical systems, equipment and components, and heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems and other service equipment shall be permitted to be located below the design flood elevation provided that they are designed and installed to prevent water from entering or accumulating within the component and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation in compliance with the flood-resistant construction requirements of this code. Electrical wiring systems shall be permitted to be located below the design flood elevation provided they conform to the provisions of the Oregon Electrical Specialty Code (OESC).

**SECTION G1101
REFERENCED STANDARDS**

ASCE 24-05 Flood Resistance Design G103.1, and Construction 401.3, G401.4
HUD 24 CFR Part 3280 (1994) Manufactured Homes Construction and Safety Standards G201
IBC-2012 International Building Code G102.2
NFPA-70 2011 National Electrical Code G1001.6