

BEFORE AMENDMENT

Section 3.092. Flood Hazard Overlay Zone - FHO Zone

Purpose and objectives: It is the purpose of this Flood Hazard Overlay Zone to regulate the use of those areas subject to periodic flooding, to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions. In advancing these principles and the general purposes of the Rockaway Beach Comprehensive Plan and Zoning Ordinance, all new construction and substantial improvements in the Flood Hazard Overlay Zone shall ensure that the specific objectives of this zone are met.

1. To combine with the present zoning requirements certain restrictions made necessary for the known flood hazard areas to promote the general health, welfare and safety of the City.
2. To prevent the establishment of certain structures and land uses in areas unsuitable for human habitation because of the danger of flooding, unsanitary conditions, or other hazards.
3. To minimize the need for rescue and relief efforts associated with flooding.
4. To help maintain a stable tax base by providing for sound use and development in flood-prone areas and to minimize prolonged business interruptions.
5. To minimize damage to public facilities and utilities located in flood hazard areas.
6. To ensure that potential home and business buyers are notified that property is in a flood area.
7. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

AFTER AMENDMENT

Section 3.092. Flood Hazard Overlay Zone – FHO Zone

1. Statutory Authorization.

The State of Oregon has in ORS 197.175 delegated the responsibility to local governmental units to adopt floodplain management regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the City of Rockaway Beach does ordain as follows:

2. Finding of Fact.

- a. The flood hazard areas of the City of Rockaway Beach preserve the natural and beneficial 10 values served by floodplains but are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

- b. These flood losses may be caused by the cumulative effect of obstructions in special flood hazard areas which increase flood heights and velocities, and when inadequately anchored, cause damage in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to flood loss.

3. Statement of Purpose.

It is the purpose of this ordinance to promote the public health, safety and general welfare, and to minimize public and private losses due to flooding in flood hazard areas by provisions designed to:

- a. Protect human life and health;
- b. Minimize expenditure of public money for costly flood control projects;
- c. Preserve natural and beneficial floodplain functions;
- d. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- e. Minimize prolonged business interruptions;
- f. Minimize damage to public facilities and utilities such as water and gas mains; electric, telephone and sewer lines; and streets and bridges located in special flood hazard areas;
- g. Help maintain a stable tax base by providing for the sound use and development of flood hazard areas so as to minimize blight areas caused by flooding;
- h. Notify potential buyers that the property is in a special flood hazard area;
- i. Notify those who occupy special flood hazard areas that they assume responsibility for their actions;
- j. Participate in and maintain eligibility for flood insurance and disaster relief.

4. Methods of Reducing Flood Losses.

In order to accomplish its purposes, this ordinance includes methods and provisions for:

- a. Restricting or prohibiting development which is dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- b. Requiring that development vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- c. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel 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 may increase flood hazards in other areas.
- f. Employing a standard of “no net loss” of natural and beneficial floodplain functions.

BEFORE AMENDMENT

Section 3.093. Definitions.

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

1. Area of Shallow Flooding.
Means a designated AO, AH, AR/AO, AR/AH, or VO zone on a community's Flood Insurance Rate Map (FIRM) with a 1 percent or greater annual chance of flooding to an average depth of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.
2. Area of Special Flood Hazard.
The land in the flood plain subject to a one percent or greater chance of flooding in any given year. Designation on maps always include the letter A or V.
3. Base Flood.
A flood having a one percent chance of being equaled or exceeded in any given year.
4. Basement.
Any area of the building having its floor subgrade (below ground level) on all sides.
5. Below Grade Crawlspace.
Means an enclosed area below the Base Flood Elevation in which the interior grade does not exceed 2 feet below the lowest adjacent exterior grade and the height, measured from the interior grade of the crawlspace to the bottom of the lowest horizontal structural member of the lowest floor does not exceed 4 feet at any point.
6. Breakaway Walls.
Means a wall that is not a 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 or supporting foundation system.
7. Coastal High Hazard Area.
An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. The map is designated on a FIRM as Zone VI-30 or VE Zone.
8. Critical Facility.
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.
9. Development.
Any man-made change to improved or unimproved real property, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.
10. Elevated Building.

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.

11. Flood or Flooding.

- a. A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - i. The overflow of inland or tidal waters.
 - ii. The unusual and rapid accumulation or runoff of surface waters from any source.
 - iii. Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (a)(2) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
- b. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (a)(1) of this definition.

12. Flood Insurance Rate Map (FIRM).

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

13. Flood Insurance Study.

An examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

14. Floodway.

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

15. Lowest Floor.

The lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance found in Section 3.096(6) (a).

16. Manufactured Dwelling.

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

17. Manufactured Dwelling Park or Subdivision.

A parcel (or contiguous parcels) of land divided into two or more manufactured dwelling lots for rent or sale.

a. Existing manufactured Dwelling Park or Subdivision:

Is one in which the construction of facilities for servicing the lots on which the manufactured dwellings are to be affixed is completed before the effective date of Rockaway Beach's floodplain management regulations. (July 25, 1978) The construction of facilities includes, at a minimum, the installation of utilities, construction of streets, and either final site grading or the pouring of concrete pads.

18. Mean Sea Level (MSL).

The average height of the sea for all stages of the tide.

19. New Construction.

Means, for the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, new construction means structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

20. Start of Construction.

Includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured dwelling 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.

21. Structure.

A walled and roofed building, including a gas or liquid storage tank that is principally above ground, as well as a manufactured dwelling and a modular or temporary building. Structure, for insurance purposes, means:

- a. A building with two or more outside rigid walls and a fully secured roof, that is affixed to a permanent site;
- b. A manufactured dwelling (“a manufactured dwelling,” also known as a mobile home, is a structure: built on a permanent chassis, transported to its site in one or more sections, and affixed to a permanent foundation); or

- c. A travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws.

For the latter purpose, "structure" does not mean a recreational vehicle or a park trailer or other similar vehicle, except as described in paragraph (3) of this definition, or a gas or liquid storage tank.

22. Substantial Improvement.

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

- a. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions or
- b. Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure".

23. Reinforced Pier.

At a minimum, a reinforced pier must have a footing adequate to support the weight of the manufactured home under saturated soil conditions. Concrete blocks may be used if vertical steel reinforcing rods are placed in the hollows of the blocks and the hollows are filled with concrete or high strength mortar. Dry stacked concrete blocks do not constitute reinforced piers.

24. Substantial Damage.

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

25. Recreational Vehicle.

A vehicle which is (1) built on a single chassis, (2) 400 square feet or less when measured at the largest horizontal projection, (3) designed to be self-propelled or permanently towable by a light duty truck, and (4) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

26. Recreational Vehicle, Highway Ready.

A recreational vehicle that is on wheels or a jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

27. Special Flood Hazard Area (SFHA).

Areas subject to having a one percent or greater chance of a flood exceeding the base flood in any given year.

AFTER AMENDMENT

Section 3.093. Definitions.

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

Appeal: [A request for a review of the interpretation of any provision of this ordinance or a request for a variance.](#)

Area of Shallow Flooding: [A designated zone AO, AH, AR/AO, or AR/AH on a community's Flood Insurance Rate Map \(FIRM\) with a one percent or greater annual chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.](#)

Area of Special Flood Hazard: [The land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. It is shown on the Flood Insurance Rate Map \(FIRM\) as Zone A, AO, AH, A1-30, AE, A99, AR, V, V1-30, VE. "Special flood hazard area" is synonymous in meaning and definition with the phrase "area of special flood hazard".](#)

Base Flood: [The flood having a one percent chance of being equaled or exceeded in any given year.](#)

Basement: [Any area of the building having its floor subgrade \(below ground level\) on all sides.](#)

Below Grade Crawlspace: [An enclosed area below the Base Flood Elevation in which the interior grade does not exceed two feet below the lowest adjacent exterior grade and the height, measured from the interior grade of the crawlspace to the bottom of the top of the crawlspace foundation, does not exceed four feet at any point.](#)

Breakaway Walls: [A wall that is not a 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 or supporting foundation system.](#)

Coastal High Hazard Area: [An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.](#)

Critical Facility: [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.](#)

Development: Any man-made change to improved or unimproved real property, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

Elevated Building: 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.

Fill: Placement of any materials such as soil, gravel, crushed stone, or other materials that change the elevation of the floodplain. The placement of fill is considered “development.”

Fish Accessible Space: The volumetric space available to fish to access.

Fish Egress-able Space: The volumetric space available to fish to exit or leave from.

Flood or Flooding:

1. A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - a. The overflow of inland or tidal waters.
 - b. The unusual and rapid accumulation or runoff of surface waters from any source.
 - c. Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (a)(2) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
2. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (a)(1) of this definition.

Flood Elevation Study: See “Flood Insurance Study”.

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

Flood Insurance Study (FIS): An examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

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

Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. [Also referred to as "Regulatory Floodway."](#)

Functionally Dependent Use: [A use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, and does not include long term storage or related manufacturing facilities.](#)

Green Infrastructure: [Use of natural or human-made hydrologic features to manage water and provide environmental and community benefits. Green infrastructure uses management approaches and technologies that use, enhance, and/or mimic the natural hydrologic cycle processes of infiltration, evapotranspiration, and reuse. At a large scale, it is an interconnected network of green space that conserves natural systems and provides assorted benefits to human populations. At a local scale, it manages stormwater by infiltrating it into the ground where it is generated using vegetation or porous surfaces, or by capturing it for later reuse. Green infrastructure practices can be used to achieve no net loss of pervious surface by creating infiltration of stormwater in an amount equal to or greater than the infiltration lost by the placement of new impervious surface.](#)

Habitat Restoration Activities: [Activities with the sole purpose of restoring habitats that have only temporary impacts and long-term benefits to habitat. Such projects cannot include ancillary structures such as a storage shed for maintenance equipment, must demonstrate that no rise in the BFE would occur as a result of the project and obtain a CLOMR and LOMR, and have obtained any other required permits \(e.g., CWA Section 404 permit\).](#)

Hazard Trees: [Standing dead, dying, or diseased trees or ones with a structural defect that makes it likely to fail in whole or in part and that present a potential hazard to a structure or as defined by the community.](#)

Highest Adjacent Grade: [The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.](#)

Historic Structure: [Any structure that is:](#)

- [1. Listed individually in the National Register of Historic Places \(a listing maintained by the Department of Interior\) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; The overflow of inland or tidal waters.](#)
- [2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;](#)
- [3. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior; or](#)

4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - a. By an approved state program as determined by the Secretary of the Interior or
 - b. Directly by the Secretary of the Interior in states without approved programs.

Hydraulically Equivalent Elevation: A location (e.g., a site where no net loss standards are implemented) that is approximately equivalent to another (e.g., the impacted site) relative to the same 100-year water surface elevation contour or base flood elevation. This may be estimated based on a point that is along the same approximate line perpendicular to the direction of flow.

Hydrologically Connected: The interconnection of groundwater and surface water such that they constitute one water supply and use of either results in an impact to both.

Impervious Surface: A surface that cannot be penetrated by water and thereby prevents infiltration and increases the amount and rate of surface water runoff, leading to erosion of stream banks, degradation of habitat, and increased sediment loads in streams. Such surfaces can accumulate large amounts of pollutants that are then “flushed” into local water bodies during storms and can also interfere with recharge of groundwater and the base flows to water bodies.

Low Impact Development: An approach to land development (or redevelopment) that works with nature to manage stormwater as close to its source as possible. It employs principles such as preserving and recreating natural landscape features and minimizing effective imperviousness to create functional and appealing site drainage that treats stormwater as a resource rather than a waste product. Low Impact Development refers to designing and implementing practices that can be employed at the site level to control stormwater and help replicate the predevelopment hydrology of the site. Low impact development helps achieve no net loss of pervious surface by infiltrating stormwater in an amount equal to or greater than the infiltration lost by the placement of new impervious surface. Low impact development is a subset of green infrastructure.

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

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

Manufactured Dwelling Park or Subdivision: A parcel (or contiguous parcels) of land divided into two or more manufactured dwelling lots for rent or sale.

Mean Higher-High Water: The average of the higher-high water height of each tidal day observed over the National Tidal Datum Epoch.

Mean Sea Level (MSL): For purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which Base Flood Elevations shown on a community's Flood Insurance Rate Map are referenced.

New Construction: For floodplain management purposes, “new construction” means structures for which the “start of construction” commenced on or after the effective date of a floodplain management regulation adopted by [the City of Rockaway Beach](#) and includes any subsequent improvements to such structures.

No Net Loss: A standard where adverse impacts must be avoided or offset through adherence to certain requirements so that there is no net change in the function from the existing condition when a development application is submitted to the state, tribal, or local jurisdiction. The floodplain functions of floodplain storage, water quality, and vegetation must be maintained.

Offsite: Mitigation occurring outside of the project area.

Onsite: Mitigation occurring within the project area.

Ordinary High Water Mark: The line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.

Qualified Professional: Appropriate subject matter expert that is defined by the community.

Reach: A section of a stream or river along which similar hydrologic conditions exist, such as discharge, depth, area, and slope. It can also be the length of a stream or river (with varying conditions) between major tributaries or two stream gages, or a length of river for which the characteristics are well described by readings at a single stream gage.

Recreational vehicle: A vehicle which is:

1. Built on a single chassis;
2. 400 square feet or less when measured at the largest horizontal projection;
3. Designed to be self-propelled or permanently towable by a light duty truck; and
4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Riparian: Of, adjacent to, or living on, the bank of a river, lake, pond, or other water body.

Riparian Buffer Zone (RBZ): The outer boundary of the riparian buffer zone is measured from the ordinary high water line of a fresh waterbody (lake; pond; ephemeral, intermittent, or perennial

[stream\) or mean higher-high water line of a marine shoreline or tidally influenced river reach to 170 feet horizontally on each side of the stream or 170 feet inland from the MHHW. The riparian buffer zone includes the area between these outer boundaries on each side of the stream, including the stream channel. Where the RBZ is larger than the special flood hazard area, the no net loss standards shall only apply to the area within the special flood hazard area.](#)

Riparian Buffer Zone Fringe: [The area outside of the RBZ and floodway but still within the SFHA.](#)

Silviculture: [The art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands.](#)

Special Flood Hazard Area (SFHA): [See “Area of Special Flood Hazard” for this definition.](#)

Start of Construction: Includes substantial improvement; and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days [from](#) the date [of the permit](#). The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured dwelling on a foundation. 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.

Structure: [For floodplain management purposes, a](#) walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured dwelling.

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

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

- a. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or

- b. Any alteration of a “historic structure”, provided that the alteration will not preclude the structure’s continued designation as a “historic structure”.

Undeveloped Space: The volume of flood capacity and fish-accessible/egress-able habitat from the existing ground to the Base Flood Elevation that is undeveloped. Any form of development including, but not limited to, the addition of fill, structures, concrete structures (vaults or tanks), pilings, levees and dikes, or any other development that reduces flood storage volume and fish accessible/egress-able habitat must achieve no net loss.

Variance: A grant of relief by the City of Rockaway Beach from the terms of a flood plain management regulation.

Violation: The failure of a structure or other development to be fully compliant with the community’s floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this ordinance is presumed to be in violation until such time as that documentation is provided.

BEFORE AMENDMENT

Section 3.094. General Provisions.

1. Lands To Which This Ordinance Applies. This ordinance shall apply to all areas of special flood hazards (Flood Hazard Overlay Zone) in combination with present zoning requirements within the jurisdiction of the City of Rockaway Beach.
2. Basis For Establishing The Areas Of Special Flood Hazard. The areas of special flood hazard identified by the Federal Insurance Administrator through a scientific and engineering report entitled 'The Flood Insurance Study for the Tillamook County, Oregon and incorporated areas dated September 28, 2018, with accompanying Flood Insurance Rate Maps and any revision thereto is hereby adopted by reference and declared to be a part of this Ordinance. The Flood Insurance Study is on file at Rockaway Beach City Hall.
3. Compliance. No structure or land shall hereafter be located, extended, converted or altered without full compliance with the terms of this ordinance and other applicable regulations.
4. Warning and Disclaimer of Liability. The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. The ordinance shall not create liability on the part of the City of Rockaway Beach, or any officer or employee thereof, for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

AFTER AMENDMENT

Section 3.094. General Provisions.

1. **Lands To Which This Ordinance Applies.** This ordinance shall apply to all special flood hazards [areas](#) within the jurisdiction of the City of Rockaway Beach.
2. **Basis For Establishing The Areas Of Special Flood Hazard.** The special flood hazard [areas](#) identified by the Federal Insurance Administrator through a scientific and engineering report entitled “The Flood Insurance Study for Tillamook County, Oregon and incorporated areas”, dated September 28, 2018, with accompanying Flood Insurance Rate Maps ([FIRMs](#)) [4105C0377F, 41057C0381F, 14057C0214F, and 41057C0218F](#) are hereby adopted by reference and declared to be a part of this ordinance. The [FIS and FIRM panels are](#) on file at Rockaway Beach City Hall.
3. **Coordination with State of Oregon Specialty Codes.** Pursuant to the requirement established in ORS 455 that the City of Rockaway Beach administers and enforces the State of Oregon Specialty Codes, the City of Rockaway Beach does hereby acknowledge that the Oregon Specialty Codes contain certain provisions that apply to the design and construction of buildings and structures located in special flood hazard areas. Therefore, this ordinance is intended to be administered and enforced in conjunction with the Oregon Specialty Codes.
4. **Compliance and Penalties for Noncompliance.**
 - a. **Compliance.** [All development within special flood hazard areas is subject to the terms of this ordinance and required to comply with its provisions and all other applicable regulations.](#)
 - b. **Penalties for Noncompliance.** [No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this ordinance and other applicable regulations. Violations of the provisions of this ordinance by failure to comply with any of its requirements \(including violations of conditions and safeguards established in connection with conditions\) and penalties for noncompliance are established under Section 11.500. Nothing contained herein shall prevent the City of Rockaway Beach from taking such other lawful action as is necessary to prevent or remedy any violation.](#)
5. **Abrogation and Severability.**
 - a. **Abrogation.** [This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.](#)

b. **Severability.**

This ordinance and the various parts thereof are hereby declared to be severable. If any section clause, sentence, or phrase of the ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of this ordinance.

6. **Interpretation.**

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

- a. Considered as minimum requirements;
- b. Liberal construed in favor of the governing body; and
- c. Deemed neither to limit nor repeal any other powers granted under state statutes.

7. **Warning and Disclaimer of Liability.**

a. **Warning.**

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages.

b. **Disclaimer of Liability.**

This ordinance shall not create liability on the part of the City of Rockaway Beach, any officer or employee thereof, or the Federal Insurance Administrator for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

BEFORE AMENDMENT

Section 3.095. Administration.

1. **Establishment of Development Permit.**

A Development Permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 3.094(2). The permit shall be for all structures including manufactured homes, as set forth in the "definitions" and for all developments including fill and other activities, also as set forth in the "definitions". Application for a Development Permit shall be made to the City and shall specifically include the following information:

- a. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures.
- b. Elevation in relation to mean sea level to which any structure has been floodproofed.

- c. Certification by an appropriately qualified registered professional engineer or architect that the floodproofing method for any non-residential structure meets the floodproofing criteria in Section 3.096(6) (b).
- d. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
- e. An engineered or City approved stormwater drainage site plan designed to prevent the increase of adverse impacts caused by development in the flood zone.

2. Duties and Responsibilities.

The duties of the City shall include, but not be limited to permit review:

- a. Review of all development permits to determine that the permit requirements of this ordinance have been satisfied.
- b. Review all development permits to require that all necessary permits have been obtained from those federal, state or local governmental agencies from which prior approval is required.
- c. Review all development permits in the area of special flood hazard to determine if the proposed development adversely affects the flood carrying capacity of the area.
- d. Review all development permit applications to determine if the proposed development qualifies as a “critical facility”, as set forth in the “DEFINITIONS”. If the development qualifies as a “critical facility”, assure that the provisions of section 3.098 are complied with.
- e. Provide Base Flood Elevation and Freeboard
 - i. When base flood elevation has been provided, the local floodplain administrator shall provide it to the Building Official along with freeboard requirements established in Section 3.096.
- f. Requirement to Submit New Technical Data.
 - i. Notify FEMA within six months of project completion when an applicant had obtained a Conditional Letter of Map Revision (CLOMR) from FEMA, or when development altered a watercourse, modified floodplain boundaries, or modified Base Flood Elevations. This notification shall be provided as a Letter of Map Revision (LOMR).
 - ii. The property owner shall be responsible for preparing technical data to support the LOMR application and paying any processing or application fees to FEMA.

3. Uses of Other Base Flood Data.

When base flood elevation data has not been provided in accordance with Section 3.094 (2), Basis for Establishing the Areas of Special Flood Hazard, the City shall obtain, review and reasonably utilize any base flood elevation data available from a federal, state or other source, in order to administer Section 3.096(6) (a), Specific Standards, Residential Construction, and Section 3.096(6)(b), Specific Standards, Non-residential Construction.

4. Information to be Obtained and Maintained.

Where base flood elevation data is provided through the Flood Insurance Study or required as in Section 3.095(3) the city shall:

- a. Verify and record actual elevation (in relation to Mean Sea Level) of the lowest floor (including basement) of all new or substantially improved structures and whether or not the structure contains a basement.
 - b. For all new or substantially improved floodproofed structures:
 - i. verify and record the actual elevation (in relation to Mean Sea Level), and
 - ii. maintain the floodproofing certifications required in Section 3.096(i)(c).
 - c. Maintain for public inspection all records pertaining to the provisions of this ordinance.
 - d. In coastal high hazard areas, certification shall be obtained from a registered professional engineer or architect that the structure is securely anchored to adequately anchored pilings or columns in order to withstand velocity waters.
5. Alterations of Watercourses.

The City shall:

 - a. Notify adjacent communities, the Department of Land Conservation and Development, and other appropriate federal and state agencies prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.
 - b. Require that an engineered stormwater drainage plan and maintenance plan is provided within the altered or relocated portion of said watercourse, so that the flood carrying capacity is not diminished.
6. Interpretation of FIRM Boundaries.

The City shall make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretations as provided in Section 3.095(7).
7. Appeals and Variance Procedures.
 - a. An appeal of a ruling or interpretation regarding a requirement of this ordinance shall be as established in Section 11.070(1).
 - b. The Planning Commission shall hear and decide appeals when it is alleged there is an error in any interpretation, requirement, decision, or determination in the enforcement or administration of this ordinance.
 - c. An action or ruling of the Planning Commission may be appealed pursuant to Section 11.030(2).
 - d. Variances may be issued for the rehabilitation, or restoration of structures listed on the National Register of Historic Places or the Statewide Inventory of Historic Properties, without regard to the procedures set forth in this section, provided that the alteration will not preclude the structure's continued designation as a "historic structure."
 - e. Variances shall not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.
 - f. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - g. Variances shall only be issued upon:

- i. A showing of good and sufficient cause;
 - ii. A determination that failure to grant the variance would result in exceptional hardship to the applicant;
 - iii. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in this section, or conflict with existing local laws or ordinances.
 - h. Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece or property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from the flood elevations should be quite rare.
 - i. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except subsection (1), and otherwise complies with Sections 3.065(1) – 3.065(3).
 - j. The administrative procedure for hearing a variance shall be as established in Section 8.050.
 - k. When a variance is granted, the City shall give written notice that the structure or manufactured home will be allowed to be built or placed with the lowest floor elevation at or below the base flood elevation, and that:
 - i. The issuance of the variance to construct a structure below the base flood level will result in a cost of flood insurance that will be commensurate with the increased risk resulting from the lower floor elevation and
 - ii. Such construction below the base flood level increases risk to life and property. Such notification shall be maintained with a record of all variance actions.
 - l. The local floodplain administrator shall maintain the records of all appeal actions and report any variances to the Federal Insurance Administration upon request.
8. Review of Building Permits.
- Where elevation data is not available either through the Flood Insurance Study or from another administrative source (Section 3.095(3)), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

AFTER AMENDMENT

Section 3.095. Administration.

1. Designation of the Floodplain Administrator.

The City Manager, or their designee, is hereby appointed to administer, implement, and enforce this ordinance by granting or denying development permits in accordance with its provisions. The Floodplain Administrator may delegate authority to implement these provisions.

2. **Duties and Responsibilities of the Floodplain Administrator.**

The duties of the floodplain administrator, or their designee, shall include, but not be limited to:

a. **Permit Review.**

Review of all development permits to determine:

- i. That the permit requirements of this ordinance have been satisfied;
- ii. That all other required local, state, and federal permits have been obtained and approved;
- iii. If the proposed development is located in a floodway. If located in the floodway assure that the floodway provisions of this ordinance in section 3.096.2.d are met; and
- iv. If the proposed development is located in an area where Base Flood Elevation (BFE) data is available either through the Flood Insurance Study (FIS) or from another authoritative source. If BFE data is not available then ensure compliance with the provisions of sections 3.096.1.g; and
- v. If the proposed development qualifies as a substantial improvement as defined in section 3.093.
- vi. If the proposed development activity is a watercourse alteration. If a watercourse alteration is proposed, ensure compliance with the provisions in section 3.096.1.a.
- vii. If the proposed development activity includes the placement of fill or excavation.
- viii. Whether the proposed development activity complies with the no net loss standards in section 3.099.

b. **Information to be Obtained and Maintained.**

The following information shall be obtained and maintained and shall be made available for public inspection as needed:

- i. Obtain, record, and maintain the actual elevation (in relation to mean sea level) of the lowest floor (including basements) and all attendant utilities of all new or substantially improved structures where Base Flood Elevation

(BFE) data is provided through the Flood Insurance Study (FIS), Flood Insurance Rate Map (FIRM), or obtained in accordance with section 3.096.1.g.

- ii. Obtain and record the elevation (in relation to mean sea level) of the natural grade of the building site for a structure prior to the start of construction and the placement of any fill and ensure that the requirements of sections 3.096.2.d, 3.096.3.a.vi, 3.095.2.a.ii are adhered to.
- iii. Upon placement of the lowest floor of a structure (including basement) but prior to further vertical construction, obtain documentation, prepared and sealed by a professional licensed surveyor or engineer, certifying the elevation (in relation to mean sea level) of the lowest floor (including basement).
- iv. Where Base Flood Elevation data are utilized, obtain as-built certification of the elevation (in relation to mean sea level) of the lowest floor (including basement) prepared and sealed by a professional licensed surveyor or engineer, prior to the final inspection.
- v. Maintain all Elevation Certificates (EC) submitted to the community;
- vi. Obtain, record, and maintain the elevation (in relation to mean sea level) to which the structure and all attendant utilities were floodproofed for all new or substantially improved floodproofed structures where allowed under this ordinance and where Base Flood Elevation (BFE) data is provided through the FIS, FIRM, or obtained in accordance with section 3.096.1.g.
- vii. Maintain all floodproofing certificates required under this ordinance;
- viii. Record and maintain all variance actions, including justification for their issuance;
- ix. Obtain and maintain all hydrologic and hydraulic analyses performed as required under section 3.096.2.d.
- x. Record and maintain all Substantial Improvement and Substantial Damage calculations and determinations as required under section 3.095.2.d.
- xi. Documentation of how no net loss standards have been met.
- xii. Maintain for public inspection all records pertaining to the provisions of this ordinance.

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

i. Community Boundary Alterations.

The Floodplain Administrator shall notify the Federal Insurance Administrator in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed authority or no longer has authority to adopt and enforce floodplain management regulations for a particular area, to ensure that all Flood Hazard Boundary Maps (FHBM) and Flood Insurance Rate Maps (FIRM) accurately represent the community's boundaries. Include within such notification a copy of a map of the community suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished floodplain management regulatory authority.

ii. **Watercourse Alterations.**

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. This notification shall be provided by the applicant to the Federal Insurance Administration as a Letter of Map Revision (LOMR) along with either:

1. A proposed maintenance plan to assure the flood carrying capacity within the altered or relocated portion of the watercourse is maintained; or
2. Certification by a registered professional engineer that the project has been designed to retain its flood carrying capacity without periodic maintenance.

The applicant shall be required to submit a Conditional Letter of Map Revision (CLOMR) when required under section 3.095.2.c.iii. Ensure compliance with all applicable requirements in sections 3.095.2.c.iii and 3.096.1.a.

iii. **Requirement to Submit New Technical Data.**

A community's Base Flood Elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, a community shall notify the Federal Insurance Administrator of the changes by submitting technical or scientific data in accordance with Title 44 of the Code of Federal Regulations (CFR), Section 65.3. The community may require the applicant to submit such data and review fees required for compliance with this section through the applicable FEMA Letter of Map Change (LOMC) process.

The Floodplain Administrator shall require a Conditional Letter of Map Revision prior to the issuance of a floodplain development permit for:

1. Proposed floodway encroachments that increase the Base Flood Elevation; and
2. Proposed development which increases the Base Flood Elevation by more than one foot in areas where FEMA has provided Base Flood Elevations but no floodway.

An applicant shall notify FEMA within six months of project completion when an applicant has obtained a Conditional Letter of Map Revision (CLOMR) from FEMA. This notification to FEMA shall be provided as a Letter of Map Revision (LOMR).

d. **Substantial Improvement and Substantial Damage Assessment and Determinations.**

Conduct Substantial Improvement (SI) (as defined in section 3.093) reviews for all structural development proposal applications and maintain a record of SI calculations within permit files in accordance with section 3.095.2.b. Conduct Substantial Damage (SD) (as defined in section 3.093) assessments when structures are damaged due to a natural hazard event or other causes. Make SD determinations

[whenever structures within the special flood hazard area \(as established in section 3.094.2\) are damaged to the extent that the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.](#)

3. Establishment of Development Permit.

a. Floodplain Development Permit Required.

A development permit shall be obtained before construction or development begins within any area [horizontally within the](#) special flood hazard [area](#) established in [section 3.094\(2\)](#). The [development](#) permit shall be [required](#) for all structures, including manufactured [dwellings](#), and for all development, [as defined in section 3.093](#), including fill and other [development](#) activities.

b. Application for Development Permit.

[Application for a development permit may be made on forms furnished by the Floodplain Administrator 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, drainage facilities, and the location of the foregoing. Specifically the following information is required:](#)

- [i. In riverine flood zones, the proposed elevation \(in relation to mean sea level\), of the lowest floor \(including basement\) and all attendant utilities of all new and substantially improved structures; in accordance with the requirements of section 3.095.2.b.](#)
- [ii. In coastal flood zones \(V zones and coastal A zones\), the proposed elevation in relation to mean sea level of the bottom of the lowest structural member of the lowest floor \(excluding pilings and columns\) of all structures, and whether such structures contain a basement;](#)
- [iii. Proposed elevation in relation to mean sea level to which any non-residential structure will be floodproofed.](#)
- [iv. Certification by a registered professional engineer or architect licensed in the State of Oregon that the floodproofing method proposed for any non-residential structure meets the floodproofing criteria for non-residential structures in section 3.096.2.c.iii.](#)
- [v. Description of the extent to which any watercourse will be altered or relocated.](#)
- [vi. Base Flood Elevation data for subdivision proposals or other development when required per sections 3.095.2.a and 3.096.1.f.](#)
- [vii. Substantial improvement calculation for any improvement, addition, reconstruction, renovation, or rehabilitation of an existing structure.](#)
- [viii. The amount and location of any fill or excavation activities proposed.](#)

4. **Variance Procedure.**

The issuance of a variance is for floodplain management purposes only. Flood insurance premium rates are determined by federal statute according to actuarial risk and will not be modified by the granting of a variance.

a. **Conditions for Variances.**

- i. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the provisions of sections 3.095.3.a.iii, 3.095.3.a.v, and 3.095.3.b. As the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases.
- ii. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- iii. Variances shall not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.
- iv. Variances shall only be issued upon:
 1. A showing of good and sufficient cause;
 2. A determination that failure to grant the variance would result in exceptional hardship to the applicant;
 3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- v. Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the criteria of section 3.095.3.a.ii – 3.095.3.a.iv are met, and the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.
- vi. Variances shall not be issued unless it is demonstrated that the development will not result in net loss of the following proxies for the three floodplain functions in the SFHA: undeveloped space; pervious surface; or trees 6 inches dbh or greater (see Section 3.099 and associated options in Table 1).
- vii. The administrative procedure for hearing a variance shall be as established in section 8.050.

b. **Variance Notification.**

Any applicant to whom a variance is granted shall be given written notice that the issuance of a variance to construct a structure below the Base Flood Elevation will

result in [increased premium rates for](#) flood insurance [and](#) that [such construction below the Base Flood Elevation](#) increases risk to life and property. Such notification [and](#) record of all variance actions, [including justification for their issuance shall be maintained in accordance with section 3.095.1.b.](#)

BEFORE AMENDMENT

Section 3.096. Provisions for Flood Hazard Reduction.

General Standards:

In the Flood Hazard Overlay Zone (FHO Zone) the following provisions are required:

1. Anchoring.
 - a. All new construction and substantial improvement shall be anchored to prevent flotation, collapse, or lateral movement of the structure.
 - b. All manufactured dwellings 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 (reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques). A certificate signed by a registered architect or engineer which certifies that the anchoring system is in conformance with FEMA regulations shall be submitted prior to final inspection approval.
2. Construction Materials and Methods.
 - a. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
 - b. All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
 - c. Electrical, heating, ventilation, plumbing, and air-conditioning equipment, and other service facilities shall be elevated a minimum of one (1) foot above base flood elevation so as to prevent water from entering or accumulating within the components during conditions of flooding.
3. Utilities.
 - a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
 - b. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters; and
 - c. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality.
4. Subdivision Proposals.
 - a. All subdivision proposals shall provide engineered plans consistent with the need to minimize flood damage.

- b. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
- c. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.
- d. 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).

5. Specific Standards.

In all areas of special flood hazards (FHO Zone) where base flood elevation data has been provided as set forth in Section 3.094(2), Basis For Establishing The Areas of Special Flood Hazard, or Section 3.095(3), Use of Other Base Flood Data, the following provisions are required:

a. Residential Construction.

New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to a minimum of one (1) foot above the base flood elevation. 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 either be certified by a registered professional engineer or architect and must meet or exceed the following minimum criteria:

- i. 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.
- ii. The bottom of all openings shall be no higher than one foot above grade.
- iii. Openings may be equipped with screens, louvers, or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters.

b. Nonresidential Construction.

New construction and substantial improvement of any commercial, industrial, or other nonresidential structure shall either have the lowest floor, including basement, elevated to a minimum of one (1) foot above the base flood elevation, or, together with attendant utility and sanitary facilities, shall:

- i. Be floodproofed so that the portion of the structure that lies below the base flood level is watertight with walls substantially impermeable to the passage of water.
- ii. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
- iii. 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 as set forth in Section 3.095 (4)(b)(ii).

- iv. Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in Section 3.096(6)(a).
- v. Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g., a building constructed to the base flood level will be rated as one foot below that level).
- vi. Applicants shall supply a comprehensive Maintenance Plan for the entire structure to include but not limited to: exterior envelope of structure; all penetrations to the exterior of the structure; all shields, gates, barriers, or components designed to provide floodproofing protection to the structure; all seals or gaskets for shields, gates, barriers, or components; and, the location of all shields, gates, barriers, and components as well as all associated hardware, and any materials or specialized tools necessary to seal the structure.
- vii. Applicants shall supply an Emergency Action Plan (EAP) for the installation and sealing of the structure prior to a flooding event that clearly identifies what triggers the EAP and who is responsible for enacting the EAP.

c. Manufactured Dwellings.

Manufactured dwellings to be placed or substantially improved within areas of special flood hazard Zones A1-30, AH and AE shall meet the following requirements:

- i. Manufactured dwellings supported on solid foundation walls shall be constructed with flood openings that comply with the provisions of subsection 3.096(A)(6)(a);
- ii. Be elevated so that the bottom of the longitudinal chassis frame beam shall be at or above BFE;
- iii. Be anchored to prevent flotation, collapse, and lateral movement during the base flood. Anchoring methods may include, but are not limited to, use of over-the-top frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques), and;
- iv. Electrical crossover connections shall be a minimum of 12 inches above BFE.

d. Recreational Vehicles.

Recreational vehicles may occupy a site in a Special Flood Hazard Area for periods of 180 consecutive days or less providing they are fully licensed and highway ready. Recreational vehicles that do not meet these criteria become manufactured dwellings and must comply with the standards for manufactured dwellings pursuant to Section 3.096(b)(c) of this ordinance.

6. Coastal High Hazard Area.

Coastal high hazard areas (V Zones) are located within the areas of special flood hazard established in Section 3.094. These areas have special flood hazards associated with high

velocity waters from tidal surges and, therefore, in addition to meeting all provisions in this ordinance, the following provisions shall also apply:

- a. All new construction and substantial improvements in Zones V-1-V30 and VE (V if base flood elevation data is available) shall be elevated on pilings and columns so that:
 - i. the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated at least one foot above the base flood elevation; and
 - ii. the pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one percent (1%) chance of being equaled or exceeded in any given year (100-year mean recurrence interval). A registered professional engineer or architect licensed in the State of Oregon shall certify the structural design, specifications and plans for the construction and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of (i) and (ii) of Section 3.096(7)(a).
- b. Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in zones V1-V30 and VE, and whether or not such structures contain a basement. The City shall maintain a record of all such information.
- c. All new construction shall be located landward of the reach of mean high tide.
- d. Provide that all new construction and substantial improvements have the space below the lowest floor either free of obstruction or screened with nonsupporting open wood latticework or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.
 - i. the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Maximum wind and water loading values to be used in this determination shall each have a one percent (1%) chance of being equaled or exceeded in any given year (100-year mean recurrence interval).
- e. Space below the lowest horizontal structural member of the elevated structure shall be useable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.
- f. Prohibit the use of fill for structural support of buildings.
- g. Prohibit man-made alteration of sand dunes which would increase potential flood damage.
- h. If breakaway walls are utilized, enclosed space shall be useable solely for parking of vehicles, building access, or storage. Space shall not be used for habitation. For the

purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot.

- i. Manufactured dwellings to be placed or substantially improved on sites within Zones V1-30, V, VE, and Coastal A Zones shall meet the following requirements:
 - i. Comply with the provisions for new construction and substantial improvements in subsection 3.096(A)(7)(a) through (g), and (i).
 - ii. The bottom of the longitudinal chassis frame beam shall be elevated at minimum to one foot above the BFE.
 - iii. Electrical crossover connections shall be a minimum of 12 inches above BFE.
- j. Recreational vehicles may occupy a site within Zones V1-V30, V, and VE on the community's FIRM for periods of 180 days or less providing they are fully licensed and highway ready, 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. Recreational vehicles that do not meet these criteria become manufactured dwellings and must meet the standards of this section.

7. Areas of Shallow Flooding (AO Zone).

Areas of shallow flooding appear on FIRMs as AO zones with depth designations. The base flood depths in these zones range from 1 to 3 feet where a clearly defined channel does not exist, or where the path of flooding is unpredictable usually characterized as sheet flow. In these areas, the following provisions apply:

- a. New construction and substantial improvements of residential structures, and manufactured dwellings within AO Zones shall have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, a minimum of one (1) foot above the depth number specified on the FIRM (at least two (2) feet if no depth number is specified).
- b. New construction and substantial improvement of nonresidential structures shall, either:
 - i. have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, a minimum of one (1) foot above the depth number specified on the FIRM (at least two (2) feet if no depth number is specified) or
 - ii. together with attendant utility and sanitary facilities, be completely floodproofed to or above highest adjacent grade of the building so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. If this method is used, compliance shall be certified by a registered professional engineer or architect.
- c. Require the installation of an engineered or City approved stormwater drainage plan to ensure adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures to prevent adverse impacts to surrounding properties.
- d. Recreational vehicles may occupy a site within AO Zones for periods of 180 days or less providing they are fully licensed and highway ready, 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. Recreational vehicles that do not meet these criteria become manufactured dwellings and must meet the standards of 3.096(A)(8)(a).

8. In areas where a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1 – A30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

AFTER AMENDMENT

Section 3.096. Provisions for Flood Hazard Reduction.

1. General Standards.

In [all special flood hazard areas](#), the [no net loss standards and the following standards shall be adhered to](#):

a. Alteration of Watercourses.

[Require that the flood carrying capacity within the altered or relocated portion of said watercourse is maintained. Require that maintenance is provided within the altered or relocated portion of said watercourse to ensure that the flood carrying capacity is not diminished. Require compliance with sections 3.095.2.c.ii and 3.095.2.c.iii.](#)

b. Anchoring.

- i. All new construction and substantial improvement shall be anchored to prevent flotation, collapse, or lateral movement of the structure [resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy](#).
- ii. All manufactured dwellings [shall](#) be anchored [per section 3.095.2.c.iv](#).

c. Construction Materials and Methods.

- i. All new construction and substantial improvements shall be constructed with 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.

d. Utilities and Equipment.

i. Water Supply, Sanitary Sewer, and On-Site Waste Disposal Systems.

1. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
2. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

3. 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.
- ii. **Electrical, Mechanical, Plumbing, and Other Equipment.**
Electrical, heating, ventilating, air-conditioning, plumbing, duct systems, and other equipment and service facilities shall be elevated one-foot or more above the base flood level or shall be designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during conditions of flooding. In addition, electrical, heating, ventilating, air-conditioning, plumbing, duct systems, and other equipment and service facilities shall:
 1. If replaced as part of a substantial improvement shall meet all the requirements of this section.
 2. Not be mounted on or penetrate through breakaway walls.
- e. **Tanks.**
 - i. Underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood.
 - ii. Above-ground tanks shall be installed one-foot or more above the base flood level or shall be anchored to prevent flotation, collapse, and lateral movement under conditions of the base flood.
 - iii. In coastal flood zones (V Zones or coastal A Zones) when elevated on platforms, the platforms shall be cantilevered from or knee braced to the building or shall be supported on foundations that conform to the requirements of the State of Oregon Specialty Code.
- f. **Subdivision Proposals and Other Proposed Developments.**
 - i. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, shall include within such proposals, Base Flood Elevation data.
 - ii. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) shall:
 1. Be consistent with the need to minimize flood damage.
 2. Have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.
 3. Have adequate drainage provided to reduce exposure to flood hazards.
 4. Comply with no net loss standards in section 3.099.
- g. **Use of Other Base Flood Elevation Data.**
When Base Flood Elevation data has not been provided in accordance with section 3.094.2 the local floodplain administrator shall obtain, review, and reasonably utilize any Base Flood Elevation data available from a federal, state, or other source, in order

to administer section 3.096. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) must meet the requirements of section 3.096.1.f.

Base Flood Elevations shall be determined for development proposals that are 5 acres or more in size or are 50 lots or more, whichever is lesser in any A zone that does not have an established base flood elevation. Development proposals located within a riverine unnumbered A Zone shall be reasonably safe from flooding; the test of reasonableness includes use of historical data, high water marks, FEMA provided Base Level Engineering data, and photographs of past flooding, etc... where available. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

h. **Structures Located n Multiple or Partial Flood Zones.**

In coordination with the State of Oregon Specialty Codes:

- i. When a structure is located in multiple flood zones on the community's Flood Insurance Rate Maps (FIRM) the provisions for the more restrictive flood zone shall apply.
- ii. When a structure is partially located in a special flood hazard area, the entire structure shall meet the requirements for new construction and substantial improvements.

2. **Specific Standards for Riverine (Including All Non-Coastal) Flood Zones.**

These specific standards shall apply to all new construction and substantial improvements in addition to the general standards contained in section 3.096.1 of this ordinance and the no net loss standards in section 3.099.

a. **Flood Openings.**

All new construction and substantial improvements with fully enclosed areas below the lowest floor (excluding basements) are subject to the following requirements. Enclosed areas below the Base Flood Elevation, including crawl spaces shall:

- i. Be designed to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters;
- ii. Be used solely for parking, storage, or building access;
- iii. Be certified by a registered professional engineer or architect or meet or exceed all of the following minimum criteria:
 1. A minimum of two openings,
 2. The total net area of non-engineered openings shall be not less than one (1) square inch for each square foot of enclosed area, where the enclosed area is measured on the exterior of the enclosure walls,
 3. The bottom of all openings shall be no higher than one foot above grade.
 4. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they shall allow the automatic flow

of floodwater into and out of the enclosed areas and shall be accounted for in the determination of the net open area.

5. All additional higher standards for flood openings in the State of Oregon Residential Specialty Codes Section R322.2.2 shall be complied with when applicable.

b. Garages.

- i. Attached garages may be constructed with the garage floor slab below the Base Flood Elevation (BFE) in riverine flood zones, if the following requirements are met:

1. If located within a floodway the proposed garage must comply with the requirements of section 3.096.2.d.
2. The floors are at or above grade on not less than one side;
3. The garage is used solely for parking, building access, and/or storage;
4. The garage is constructed with flood openings in compliance with section 3.096.2.a to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater.
5. The portions of the garage constructed below the BFE are constructed with materials resistant to flood damage;
6. The garage is constructed in compliance with the standards in section 3.096.1; and
7. The garage is constructed with electrical, and other service facilities located and installed so as to prevent water from entering or accumulating within the components during conditions of the base flood.

- ii. Detached garages must be constructed in compliance with the standards for appurtenant structures in section 3.096.2.c.vi or non-residential structures in section 3.096.2.c.iii depending on the square footage of the garage.

c. For Riverine (Non-Coastal) Special Flood Hazard Areas with Base Flood Elevations.

In addition to the general standards listed in section 3.096.1 the following specific standards shall apply in Riverine (non-coastal) special flood hazard areas with Base Flood Elevations (BFE): Zones A1-A30, AH, and AE.

i. Before Regulatory Floodway.

1. In areas where a regulatory floodway has not been designated, no new construction, substantial improvement, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's Flood Insurance Rate Map (FIRM), unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community and will not result in the net loss of flood storage volume. When determined that structural elevation is not possible and where the placement of fill cannot meet the above standard, impacts to

[undeveloped space must adhere to the no net loss standards in section 3.099.1.c.](#)

ii. **Residential Construction.**

1. New construction, [conversion to](#), and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one-foot [or more](#) above the Base Flood Elevation (BFE).
2. [Enclosed areas below the lowest floor shall comply with the flood opening requirements in section 3.096.2.a.](#)

iii. **Non-Residential Construction.**

1. New construction, [conversion to](#), and substantial improvement of any commercial, industrial, or other non-residential structure shall:
 - a. [Have the lowest floor, including basement elevated one-foot or more above the Base Flood Elevation \(BFE\);](#)
[Or, together with attendant utility and sanitary facilities:](#)
 - i. Be floodproofed so that below the [base flood level the structure is watertight with walls substantially impermeable to the passage of water.](#)
 - ii. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
 - iii. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this section based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the [Floodplain Administrator](#) as set forth in section [3.095.2.b.](#)
2. Non-residential structures that are elevated, not floodproofed, [shall comply with the standards for enclosed areas below the lowest floor in section 3.096.2.a.](#)
3. Applicants floodproofing non-residential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g. a building [floodproofed to the base flood level](#) will be rated as one foot below.

iv. **Manufactured Dwellings.**

1. Manufactured dwellings to be placed [\(new or replacement\)](#) or substantially improved [that are](#) supported on solid foundation walls shall be constructed with flood openings that comply with section [3.096.2.a;](#)
2. The bottom of the longitudinal chassis frame beam shall be at or above Base Flood Elevation;

3. Manufactured dwellings to be placed (new or replacement) or substantially improved shall be anchored to prevent flotation, collapse, and lateral movement during the base flood. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques), and;
4. Electrical crossover connections shall be a minimum of 12 inches above Base Flood Elevation (BFE).

v. **Recreational Vehicles.**

Recreational vehicles placed on sites are required to:

1. Be on the site for fewer than 180 consecutive days, and
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 section 3.096.2.c.iv, including the anchoring and elevation requirements for manufactured dwellings.

vi. **Appurtenant (Accessory) Structures.**

Relief from elevation or floodproofing requirements for residential and non-residential structures in Riverine (Non-Coastal) flood zones may be granted for appurtenant structures that meet the following requirements:

1. Appurtenant structures located partially or entirely within the floodway must comply with requirements for development within a floodway found in section 3.096.2.d.
2. Appurtenant structures must only be used for parking, access, and/or storage and shall not be used for human habitation;
3. In compliance with State of Oregon Specialty Codes, appurtenant structures on properties that are zoned residential are limited to one-story structures less than 200 square feet, or 400 square feet if the property is greater than two acres in area and the proposed appurtenant structure will be located a minimum of 20 feet from all property lines. Appurtenant structures on properties that are zoned as non-residential are limited in size to 120 square feet.
4. The portions of the appurtenant structure located below the Base Flood Elevation must be built using flood resistant materials;
5. The appurtenant structure must be adequately anchored to prevent flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood.
6. The appurtenant structure must be designed and constructed to equalize hydrostatic flood forces on exterior walls and comply with the requirements for flood openings in section 3.096.2.a;
7. Appurtenant structures shall be located and constructed to have low damage potential;

8. Appurtenant structures shall not be used to store toxic material, oil, or gasoline, or any priority persistent pollutant identified by the Oregon Department of Environmental Quality unless confined in a tank installed in compliance with section 3.096.1.e.
9. Appurtenant structures shall be constructed with electrical, mechanical, and other service facilities located and installed so as to prevent water from entering or accumulating within the components during conditions of the base flood.

d. **Floodways.**

Located within the special flood hazard areas established in section 3.094.2 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of the floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

- i. Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless:
 1. Certification by a registered professional civil engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment shall not result in any increase in flood levels within the community during the occurrence of the base flood discharge; Or,
 2. A community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that conditional approval has been obtained by the Federal Insurance Administrator through the Conditional Letter of Map Revision (CLOMR) application process, all requirements established under 44 CFR 65.12 are fulfilled, and the encroachment(s) comply with the no net loss standards in section 3.099.
- ii. If the requirements of section 3.096.2.d.i are satisfied, all new construction, substantial improvements, and other development shall comply with all other applicable flood hazard reduction provisions of section 3.096.

e. **Standards for Shallow Flooding Areas.**

Shallow flooding areas appear on FIRMs as AO zones with depth designations or as AH zones with Base Flood Elevations. For AO zones the base flood depths range from one to three feet above ground where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. For both AO and AH zones, adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures.

i. **Standards for AH Zones.**

Development within AH Zones must comply with the standards in sections 3.096.1, 3.096.2, and 3.096.2.e.

ii. **Standards for AO Zones.**

In AO zones, the following provisions apply in addition to the requirements in sections 3.096.1 and 3.096.2.e:

1. New construction, conversion to, and substantial improvement of residential structures and manufactured dwellings within AO zones shall have the lowest floor, including basement, elevated above the highest grade adjacent to the building, at minimum of one foot above the depth number specified on the Flood Insurance Rate Maps (FIRM) (at least two (2) feet if no depth number is specified). For manufactured dwellings the lowest floor is considered to be the bottom of the longitudinal chassis frame beam.
2. New construction, conversion to, and substantial improvements of non-residential structures within AO zones shall either:
 - a. Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, at minimum one foot above the depth number specified on the Flood Insurance Rate Maps (FIRMS) (at least two (2) feet if no depth number is specified); or
 - b. Together with attendant utility and sanitary facilities, be completely floodproofed to one foot above the depth number specified on the FIRM or a minimum of two (2) feet above the highest adjacent grade if no depth number is specified, so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. If this method is used, compliance shall be certified by a registered professional engineer or architect as stated in section 3.096.2.c.iii.
3. Recreational vehicles placed on sites within AO Zones on the community's Flood Insurance Rate Maps (FIRM) shall either:
 - a. Be on the site for fewer than 180 consecutive days, and
 - b. Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
 - c. Meet the elevation requirements of section 3.096.2.e.ii.1, and the anchoring and other requirements for manufactured dwellings of section 3.096.2.c.iv.
4. In AO zones, new and substantially improved appurtenant structures must comply with the standards in section 3.096.2.c.vi.
5. In AO zones, enclosed areas beneath elevated structures shall comply with the requirements in section 3.096.2.a.

3. Specific Standards for Coastal High Hazard Flood Zones.

Located within special flood hazard areas established in section 3.094.2 are Coastal High Hazard Areas, designated as Zones V1-V30, VE, V, or coastal A zones as identified on the FIRMs as the area between the Limit of Moderate Wave Action (LiMWA) and the Zone V boundary. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting all provisions of this ordinance and the State of Oregon Specialty Codes, the following provisions shall apply in addition to the general standards provisions in section 3.096.1.

a. Development Standards.

- i. All new construction and substantial improvements in Zones V1-V30 and VE, V, and coastal A zones (where base flood elevation data is available) shall be elevated on pilings and columns such that:
- ii. The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated a minimum of one foot above the base flood level; and
- iii. The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Water loading values used shall be those associated with the base flood. Wind loading values used shall be those specified by the State of Oregon Specialty Codes.
- iv. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of this section.
- v. Obtain the elevation (in relation to mean sea level) of the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures and whether or not such structures contain a basement. The floodplain administrator shall maintain a record of all such information in accordance with section 3.095.2.b.
- vi. Provide that all new construction and substantial improvements have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.

For the purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or state codes) may be permitted only if a registered professional

engineer or architect certifies that the designs proposed meet the following conditions:

- vii. Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and
- viii. If breakaway walls are utilized, such enclosed space shall be useable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.
- ix. Walls intended to break away under flood loads shall have flood openings that meet or exceed the criteria for flood openings in section 3.096.2.a.
- x. The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum water loading values to be used in this determination shall be those associated with the base flood. Maximum wind loading values used shall be those specified by the State of Oregon Specialty Codes.
- xi. Prohibit the use of fill for structural support of buildings.
- xii. All new construction shall be located landward of the reach of mean high tide.
- xiii. Prohibit man-made alteration of sand dunes which would increase potential flood damage.
- xiv. All structures, including but not limited to residential structures, non-residential structures, appurtenant structures, and attached garages shall comply with all the requirements of section 3.096.3.a Floodproofing of non-residential structures is prohibited.

b. Manufactured Dwelling Standards.

All manufactured dwellings to be placed (new or replacement) or substantially improved within Coastal High Hazard Areas (Zones V, V1-30, VE, or Coastal A) shall meet the following requirements:

- i. Comply with all of the standards within section 3.096.3;
- ii. The bottom of the longitudinal chassis frame beam shall be elevated to a minimum of one foot above the Base Flood Elevation (BFE); and
- iii. Electrical crossover connections shall be a minimum of 12 inches above the BFE.

c. Recreational Vehicle Standards.

Recreational Vehicles within Coastal High Hazard Areas (Zones V, V1-30, VE, or Coastal A) shall either:

- i. Be on the site for fewer than 180 consecutive days, and
- ii. 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
- iii. Meet the permit requirements of section 3.095 and the requirements for manufactured dwellings in section 3.096.3.b.

d. Tank Standards.

Tanks shall meet the requirements of section 3.096.1.e and 3.099.

BEFORE AMENDMENT

Section 3.097. Restrictions and Prohibited Uses.

1. **Restrictions.** Restrictions regarding height, rear yards, side yards, front yard setbacks, minimum lot area, signs, vision clearance and parking space shall be the same as set forth in each specific zone located within the Flood Hazard Overlay Zone area.
2. **Prohibited Uses.** It shall be unlawful to erect, alter, maintain or establish in a flood hazard overlay zone any building, use or occupancy not permitted or allowed in the foregoing provisions, except existing nonconforming uses, which may continue as provided in Article 7.

AFTER AMENDMENT

(No Change)

Section 3.097. Restrictions and Prohibited Uses.

1. **Restrictions.** Restrictions regarding height, rear yards, side yards, front yard setbacks, minimum lot area, signs, vision clearance and parking space shall be the same as set forth in each specific zone located within the Flood Hazard Overlay Zone area.
2. **Prohibited Uses.** It shall be unlawful to erect, alter, maintain or establish in a flood hazard overlay zone any building, use or occupancy not permitted or allowed in the foregoing provisions, except existing nonconforming uses, which may continue as provided in Article 7.

BEFORE AMENDMENT

Section 3.098. Critical Facilities.

Construction of new critical facilities shall be, to the extent possible, located outside the limits of the Special Flood Hazard Area (SFHA) (100-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

AFTER AMENDMENT

(No Change)

Section 3.098. Critical Facilities.

Construction of new critical facilities shall be, to the extent possible, located outside the limits of the Special Flood Hazard Area (SFHA) (100-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

BEFORE AMENDMENT

(Non-Existent)

Section 3.099. Standards for Protection of SFHA Floodplain Functions.

AFTER AMENDMENT

Section 3.099. Standards for Protection of SFHA Floodplain Functions.

The standards described below apply to all special flood hazard areas.

1. No Net Loss Standards.

- a. No net loss of the three proxies for the floodplain functions is required for development in the special flood hazard area that would reduce undeveloped space, increase impervious surface, or result in a loss of trees that are 6-inches dbh or greater. No net loss can be achieved by first avoiding negative effects to floodplain functions to the degree possible, then minimizing remaining effects, then replacing and/or otherwise compensating for, offsetting, or rectifying the residual adverse effects to the three floodplain functions. Prior to the issuance of any development authorization, the applicant shall:
 - i. Demonstrate a legal right by the project proponent to implement the proposed activities to achieve no net loss (e.g., property owner agreement);
 - ii. Demonstrate that financial assurances are in place for the long-term maintenance and monitoring of all projects to achieve no net loss;
 - iii. Demonstrate that financial assurances are in place for the long-term maintenance and monitoring of all projects to achieve no net loss;
- b. Compliance with no net loss for undeveloped space or impervious surface is preferred to occur prior to the loss of habitat function but, at a minimum, shall occur

concurrent with the loss. To offset the impacts of delay in implementing no net loss, a 25 percent increase in the required minimum area is added for each year no net loss implementation is delayed.

c. No net loss must be provided within, in order of preference:

- i. The lot or parcel that floodplain functions were removed from;
- ii. The same reach of the waterbody where the development is proposed; or
- iii. The special flood hazard area within the same hydrologically connected area as the proposed development. Table 1 presents the no net loss ratios, which increase based on the preferences listed above.

d. **Undeveloped Space.**

- i. Development proposals shall not reduce the fish-accessible and egress-able undeveloped space within the special flood hazard area.
- ii. A development proposal with an activity that would impact undeveloped space shall achieve no net loss of fish-accessible and egress-able space.
- iii. Lost undeveloped space must be replaced with fish-accessible and egress-able compensatory volume based on the ratio in Table 1 and at the same flood level at which the development causes an impact (i.e., plus or minus 1 foot of the hydraulically equivalent elevation).
 1. Hydraulically equivalent sites must be found within either the equivalent 1-foot elevations or the same flood elevation bands of the development proposal. The flood elevation bands are identified as follows:
 - a. Ordinary High Water Mark to 10-year,
 - b. 10-year to 25-year,
 - c. 25-year to 50-year,
 - d. And 50-year to 100-year
 2. Hydrologically connected to the waterbody that is the flooding source;
 3. Designed so that there is no increase in velocity; and
 4. Designed to fill and drain in a manner that minimizes anadromous fish stranding to the greatest extent possible.

b. **Impervious Surfaces.**

Impervious surface mitigation shall be mitigated through any of the following options:

- i. Development proposals shall not result in a net increase in impervious surface area within the SFHA, or
- ii. Use low impact development or green infrastructure to infiltrate and treat stormwater produced by the new impervious surface, as documented by a qualified professional, or
- iii. If prior methods are not feasible and documented by a qualified professional stormwater retention is required to ensure no increase in peak volume or flow and to maximize infiltration, and treatment is required to minimize pollutant loading. See section 3.099.1.d.iii for stormwater retention specifications.

c. **Trees.**

- i. Development proposals shall result in no net loss of trees 6-inches dbh or greater within the special flood hazard area. This requirement does not apply to silviculture where there is no development.
 - 1. Trees of or exceeding 6-inches dbh that are removed from the RBZ, Floodway, or RBZ-fringe must be replaced at the ratios in Table 1.
 - 2. Replacement trees must be native species that would occur naturally in the Level III ecoregion of the impact area.

d. **Stormwater Management.**

Any development proposal that cannot mitigate as specified in section 3.099.1.b.i-ii must include the following:

- i. Water quality (pollution reduction) treatment for post-construction stormwater runoff from any net increase in impervious area; and
- ii. Water quantity treatment (retention facilities) unless the outfall discharges into the ocean.
- iii. Retention facilities must:
 - 1. Limit discharge to match the pre-development peak discharge rate (i.e., the discharge rate of the site based on its natural groundcover and grade before any development occurred) for the 10-year peak flow using a continuous simulation for flows between 50 percent of the 2-year event and the 10-year flow event (annual series).
 - 2. Treat stormwater to remove sediment and pollutants from impervious surfaces such that at least 80 percent of the suspended solids are removed from the stormwater prior to discharging to the receiving water body.
 - 3. Be designed to not entrap fish and drain to the source of flooding.
 - 4. Be certified by a qualified professional.
- iv. Stormwater treatment practices for multi-parcel facilities, including subdivisions, shall have an enforceable operation and maintenance agreement to ensure the system functions as designed. This agreement will include:
 - 1. Access to stormwater treatment facilities at the site by the City of Rockaway Beach for the purpose of inspection and repair.
 - 2. A legally binding document specifying the parties responsible for the proper maintenance of the stormwater treatment facilities. The agreement will be recorded and bind subsequent purchasers and sellers even if they were not party to the original agreement.
 - 3. For stormwater controls that include vegetation and/or soil permeability, the operation and maintenance manual must include maintenance of these elements to maintain the functionality of the feature.
 - 4. The responsible party for the operation and maintenance of the stormwater facility shall have the operation and maintenance manual on site and available at all times. Records of the maintenance and

repairs shall be retained and made available for inspection by the City of Rockaway Beach for five years.

e. **Activities Exempt from No Net Loss Standards.**

The following activities are not subject to the no net loss standards in section 3.099.1; however, they may not be exempt from floodplain development permit requirements.

- i. Normal maintenance of structures, such as re-roofing and replacing siding, provided there is no change in the footprint or expansion of the roof of the structure;
- ii. Normal street, sidewalk, and road maintenance, including filling potholes, repaving, and installing signs and traffic signals, that does not alter contours, use, or alter culverts. Activities exempt do not include expansion of paved areas;
- iii. Routine maintenance of landscaping that does not involve grading, excavation, or filling;
- iv. Routine agricultural practices such as tilling, plowing, harvesting, soil amendments, and ditch cleaning that does not alter the ditch configuration provided the spoils are removed from special flood hazard area or tilled into fields as a soil amendment;
- v. Routine silviculture practices that do not meet the definition of development, including harvesting of trees as long as root balls are left in place and forest road construction or maintenance that does not alter contours, use, or alter culverts;
- vi. Removal of noxious weeds and hazard trees, and replacement of non-native vegetation with native vegetation;
- vii. Normal maintenance of above ground utilities and facilities, such as replacing downed power lines and utility poles provided there is no net change in footprint;
- viii. Normal maintenance of a levee or other flood control facility prescribed in the operations and maintenance plan for the levee or flood control facility. Normal maintenance does not include repair from flood damage, expansion of the prism, expansion of the face or toe or addition of protection on the face or toe with rock armor; and
- ix. Habitat restoration activities.

2. **Riparian Buffer Zone (RBZ).**

- a. The Riparian Buffer Zone is measured from the ordinary high-water line of a fresh waterbody (lake; pond; ephemeral, intermittent, or perennial stream) or mean higher-high water of a marine shoreline or tidally influenced river reach to 170 feet horizontally on each side of the stream or inland of the MHHW. The riparian buffer zone includes the area between these outer boundaries on each side of the stream, including the stream channel.

- b. Habitat restoration activities in the RBZ are considered self-mitigating and are not subject to the no net loss standards described above.
- c. Functionally dependent uses are only subject to the no net loss standards for development in the RBZ. Ancillary features that are associated with but do not directly impact the functionally dependent use in the RBZ (including manufacturing support facilities and restrooms) are subject to the beneficial gain standard in addition to no net loss standards.
- d. Any other use of the RBZ requires a greater offset to achieve no net loss of floodplain functions, on top of the no net loss standards described above, through the beneficial gain standard.
- e. Under FEMA's beneficial gain standard, an area within the same reach of the project and equivalent to five percent of the total project area within the RBZ shall be planted with native herbaceous and shrub vegetation and designated as open space.

Table 1: No Net Loss Standards

	<u>Undeveloped Space (ft³)</u>	<u>Impervious Surface (ft²)</u>	<u>Trees (6"<dbh<20")</u>	<u>Trees (20"<dbh<39")</u>	<u>Trees (39"<dbh)</u>
Basic Mitigate Ratios					
<u>RBZ and Floodway</u>	<u>2:1*</u>	<u>1:1</u>	<u>3:1*</u>	<u>5:1</u>	<u>6:1</u>
<u>RBZ-Fringe</u>	<u>1:5:1*</u>	<u>1:1</u>	<u>2:1*</u>	<u>4:1</u>	<u>5:1</u>
Mitigation Multipliers					
<u>Mitigation Onsite to Mitigation Offsite, Same Reach</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>
<u>Mitigation Onsite to Mitigation Offsite, Different Reach, Same Watershed</u>	<u>200%*</u>	<u>200%*</u>	<u>200%</u>	<u>200%</u>	<u>200%</u>

Notes:

1. Ratios with asterisks are indicated in the BiOp
2. Mitigation multipliers of 100% result in the required mitigation occurring at the same value described by the ratios above, while multipliers of 200% result in the required mitigation being doubled.
 - a. For example, if only 500 ft² of the total 1000 ft² of required pervious surface mitigation can be conducted onsite and in the same reach, the remaining 500 ft² of required pervious surface mitigation occurring offsite at a different reach would double because of the 200% multiplier.
3. RBZ impacts must be offset in the RBZ, on-site or off-site.
4. Additional standards may apply in the RBZ (See section 3.099.2 Riparian Buffer Zone)