EXHIBIT B

Chapter 9.10
~~AREAS OF~~ SPECIAL FLOOD HAZARD *AREA*

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§ 9.10.010. Purpose.

The purpose of this chapter is to promote public health, safety, and general welfare, and to minimize public and private losses due to flooding in ***special*** flood hazard areas ***through*** ~~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;

~~C~~***D***. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

~~D~~***E***. Minimize prolonged business interruptions;

~~E~~***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 ~~areas of~~ special flood hazard ***areas***;

~~F~~***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;

~~G~~***H***. Notify potential buyers that the property is in a~~n area of~~ special flood hazard ***area***;

~~H~~***I***. Notify those who occupy ~~areas of~~ special flood hazard ***area*** that they assume responsibility for their actions; and

~~I~~***J***. Participate in and maintain eligibility for flood insurance and disaster relief.

9.10.020. Definitions.

Unless specifically defined below, words or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage. These definitions are only applicable to this chapter and Tigard Community Development Code (TCDC) Chapter 18.510, Sensitive Lands.

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

"Area of shallow flooding" means a designated Zone AO, AH, AR/AO or AR/AH (or VO) on the city'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" means the land in the floodplain within the city 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. "Special flood hazard area" is synonymous in meaning and definition with the phrase "area of special flood hazard."

"Base flood" means a flood having a one percent chance of being equaled or exceeded in any given year.

"Base flood elevation (BFE)" means the elevation to which floodwater is anticipated to rise during the base flood.

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

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

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

"Fill" means placement of any materials such as soil, gravel, crushed stone, or other materials that change the elevation of the floodplain. Placement of fill is considered "development" for the purposes of this chapter.

"Fish accessible space" means the volumetric space available to fish to access.

"Fish egress-able space" means the volumetric space available to fish to exit or leave from.

"Flood" or "flooding" means:

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 subsection 1.b 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 subsection 1.a of this definition.

Flood Elevation Study. See "Flood Insurance Study."

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

"Flood Insurance Study (FIS)" means 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) or flood-related erosion hazards.

"Flood proofing" means 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.

"Floodplain functions" mean flood storage, water quality, and riparian vegetation conditions.

"Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. Also referred to as "regulatory floodway."

"Functionally dependent use" means 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" means the use of natural or human-made hydrologic features to manage water and provide environmental and community benefits. Green infrastructure management approaches and technologies use, enhance, or mimic the natural hydrologic cycle processes of infiltration, evapotranspiration, and reuse. At a large scale, green infrastructure is an interconnected network of green spaces that conserve natural systems and provide assorted benefits to human populations. At a local scale, green infrastructure 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 allowing or promoting infiltration of stormwater in an amount equal to or greater than the infiltration lost by the placement of new impervious surface.

"Habitat restoration activities" mean activities that have the sole purpose of restoring habitats, have only temporary impacts, and provide long-term benefits to habitat. Such projects must demonstrate that no rise in the base flood elevation would occur as a result of the project, and must obtain a CLOMR and LOMR and any other required permits (e.g., CWA Section 404 permit). Such projects cannot include ancillary structures such as a storage shed for maintenance equipment.

"Hazard tree" means a:

1. ***Standing dead, dying, or diseased tree;***
2. ***Tree 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***
3. ***A hazard tree as defined in Title 8, Urban Forestry.***

"Highest adjacent grade" means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

"Historic structure" means any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of the Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

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 the Interior; or
4. Individually listed on a City of Tigard Historic Resources list acknowledged by the Secretary of the Interior.

"Hydraulically equivalent elevation" means 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 elevation may be estimated based on a point that is along the same approximate line perpendicular to the direction of flow.

"Hydrologically connected" means 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" means a surface that prevents or hinders the absorption of 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 (LID)" means 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. LID is a subset of green infrastructure.

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

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

"Manufactured dwelling park or subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured dwelling lots for rent or sale.

"Mean higher-high water (MHHW)" means the average of the higher-high water height of each tidal day observed over the National Tidal Datum Epoch.

"Mean sea level" means, 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 the city's Flood Insurance Rate Map are referenced.

"New construction" means, for floodplain management purposes, structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by City of Tigard and includes any subsequent improvements to such structures.

"No net loss" means 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" means mitigation occurring outside of the project area.

"Onsite" means mitigation occurring within the project area.

"Ordinary High Water Mark" means the line on a shore or bank that is 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" means a person who has a minimum of a bachelor's degree in wildlife or fisheries habitat biology, or a related degree in a biological field from an accredited college or university with a minimum of four years' experience as a practicing fish or wildlife habitat biologist; or is listed on the Oregon Department of Transportation's official list of consultants qualified to provide Endangered Species Act Documentation.

"Reach" means 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" means 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" means of, adjacent to, or living on, the bank of a river, lake, pond, or other water body.

"Riparian buffer zone (RBZ)" means the outer boundary of the riparian buffer zone as 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" means the area outside of the RBZ and floodway but still within the SFHA.

"Silviculture" means 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" means, 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" means 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% of the market value of the structure before the damage occurred.

"Substantial improvement" means any reconstruction, rehabilitation, addition, or other improvement of a

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

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

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

"Undeveloped Space" means 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 the "no net loss" standards.

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

9.10.030. Applicability.

A. All development within ~~areas of~~ special flood hazard ***areas*** is subject to the terms of this chapter and is required to comply with its provisions and all other applicable regulations including, but not limited to, TCDC Chapter 18.510, Sensitive Lands.

B. The ~~areas of~~ special flood hazard ***areas*** identified by FEMA in a scientific and engineering report entitled "The Flood Insurance Study for Washington County, Oregon and Incorporated Areas effective October 19, 2018" with accompanying Flood Insurance Map (FIRM Panels: 41067C0529F, 41067C0533E, 41067C0534E, 41067C0541E through 41067C0544E, and 41067C0563E) is hereby adopted by reference and declared to be a part of this chapter.

9.10.040. General Provisions.

A. Coordination with State of Oregon Specialty Codes. Pursuant to the requirement established in ORS 455 that the City of Tigard administers and enforces the State of Oregon Specialty Codes, the City of Tigard does hereby acknowledge that the Oregon Specialty Codes contain certain provisions that apply to the design and construction of buildings and structures located in ~~areas of~~ special flood hazard ***areas***. Therefore, this chapter is intended to be administered and enforced in conjunction with the Oregon Specialty Codes.

B. Warning. The degree of flood protection required by this chapter 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 chapter does not imply that land outside the ~~areas of~~ special flood hazards ***areas*** or uses permitted within such areas will be free from flooding or flood damages.

C. Permit Review. The duties of the Floodplain Administrator, or their designee, ~~shall~~ include, but ***are*** not ~~be~~ limited to, review ***of*** all development permits to ~~determine that~~:

1. ***Determine that the***~~The~~ permit requirements of this ordinance have been satisfied;

2. ***Determine that all***~~All~~ other required local, state, and federal permits have been obtained and approved;

3. ~~Review all development permits to d~~***D***etermine if the proposed development is located in a floodway.

   a. If located in the floodway**,** assure that the floodway provisions are met;

   b.~~4. Review all development permits to d~~***D***etermine if the proposed development is located in an area where base flood elevation data is available either through the Flood Insurance Study or from another authoritative source. If base flood elevation data is not available then ensure compliance with the provisions of Section 9.10.050.J; ***and***

   c.~~5.~~ Provide to building officials the base flood elevation applicable to any building requiring a development permit;

4. ~~6. Review all development permit applications to d~~***D***etermine if the proposed development qualifies as a substantial improvement as defined by Section 9.10.020;

5.~~7. Review all development permits to d~~***D***etermine if the proposed development activity is a watercourse alteration. If a watercourse alteration is proposed, ensure compliance with the provisions in Section 9.10.050.C; ~~and~~

6. ~~8. Review all development permits to d~~***D***etermine if the proposed development activity includes the placement of fill or excavation***; and***~~.~~

7. Determine whether the proposed development activity complies with the "no net loss" standards in Section 9.10.060.

D. Information to be Obtained and Maintained. The following information shall be obtained and maintained and shall be made available for public inspection as needed:

1. 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 data is provided through the Flood Insurance Study, Flood Insurance Rate Map, or obtained in accordance with Section 9.10.050.J.

2. 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 Section 9.10.050.N are adhered to and all other required local, state, and federal permits have been obtained and approved.

3. 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).

4. Where base flood elevation data are utilized, obtain record drawing 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.

5. Maintain all elevation certificates submitted to the City of Tigard.

6. 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 chapter and where base flood elevation data is provided through the FIS, FIRM, or obtained in accordance with Section 9.10.050.J.

7. Maintain all floodproofing certificates required under this chapter.

8. Record and maintain all variance actions, including justification for their issuance.

9. Obtain and maintain all hydrologic and hydraulic analyses performed as required under Section 9.10.050.N.

10. Record and maintain all substantial improvement and substantial damage calculations and determinations as required under ~~subs.~~***S***ection ***9.10.040.***H.

11. Maintain documentation of how the "no net loss" standards have been met (see Section 9.10.060).

12~~11~~. Maintain for public inspection all records pertaining to the provisions of this chapter.

E. City Boundary Alterations. The Floodplain Administrator shall notify the Federal Insurance Administrator in writing whenever the boundaries of the city have been modified by annexation or the city 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 and Flood Insurance Rate Maps accurately represent the city's boundaries. The notification will include a copy of a map of the city suitable for reproduction, clearly delineating the new corporate limits or new area for which the city has assumed or relinquished floodplain management regulatory authority.

F. Watercourse Alterations. The Floodplain Administrator shall 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 along with either a proposed maintenance plan to assure the flood carrying capacity within the altered or relocated portion of the watercourse is maintained; or 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 when required under ~~subsection~~***Section 9.10.040.***G to ensure compliance with all applicable requirements in ~~subsection~~***Sections 9.10.040.***G and ~~Section~~ 9.10.050.C.

G. Requirement to Submit New Technical Data. The city'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, the city must 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 city 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 process. The Floodplain Administrator shall require a Conditional Letter of Map Revision prior to the issuance of a floodplain development permit for proposed floodway encroachments that increase the base flood elevation and 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 from FEMA. This notification to FEMA shall be provided as a Letter of Map Revision.

H. Substantial Improvement and Substantial Damage Assessments and Determinations. The Floodplain Administrator shall:

1. Conduct substantial improvement (as defined in Section 9.10.020) reviews for all structural development proposal applications and maintain a record of Substantial Improvement calculations within permit files in accordance with ~~subsection~~***Section 9.10.040.***D.

2. Conduct substantial damage assessments when structures are damaged due to a natural hazard event or other causes.

2. Make substantial damage determinations whenever structures within the ~~area of~~ special flood hazard ***area*** (as established in Section 9.10.030.B) are damaged to the extent that the cost of restoring the structure to its before damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.

I. Floodplain Development Permit Required. A development permit shall be obtained before construction or development begins within any area horizontally within the ~~area of~~ special flood hazard ***area*** established in Section 9.10.030.B. The development permit shall be required for all structures, including manufactured dwellings, and for all other development, as defined in Section 9.10.020, including fill and other development activities.

J. 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:

1. 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 ~~subsection~~***Section 9.10.040.***D;

2. Proposed elevation in relation to mean sea level to which any nonresidential structure will be floodproofed;

3. Certification by a registered professional engineer or architect licensed in the State of Oregon that

the floodproofing methods proposed for any nonresidential structure meet the floodproofing criteria for nonresidential structures in Section 9.10.050.M.3;

4. Description of the extent to which any watercourse will be altered or relocated;

5. Base flood elevation data for subdivision proposals or other development when required by this chapter;

6. Substantial improvement calculation for any improvement, addition, reconstruction, renovation, or rehabilitation of an existing structure; and

7. The amount and location of any fill or excavation activities proposed.

K. No Net Loss. In accordance with the terms of the NMFS 2016 Biological Opinion, mitigation is necessary to ensure no net loss in floodplain functions. FEMA's 2024 Draft Oregon Implementation Plan identifies proxies that provide measurable actions that can prevent the net loss of the parent floodplain functions. These proxies include undeveloped space, pervious surfaces, and trees to account for no net loss in respective floodplain functions of floodplain storage, water quality, and vegetation. Mitigation of these proxies must be completed to ensure compliance with "no net loss" standards. "No net loss" standards apply to the net change in floodplain functions as compared to existing conditions at the time of proposed development and mitigation must be addressed to the floodplain function that is receiving the detrimental impact. The standards described below apply to all special flood hazard areas as defined in Section 9.10.020.

***L*~~K~~.** Severability. This chapter and the various parts thereof are hereby declared to be severable. If any section clause, sentence, or phrase of this chapter 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 chapter.

***M*~~L~~.** Abrogation. This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another provision, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

9.10.050. National Flood Insurance Program General Standards.

In all ~~areas of~~ special flood hazard ***areas***, the ***"no net loss" standards in Section 9.10.060 and the*** following standards shall be adhered to:

A. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

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

C. Alteration of Watercourses. The Floodplain Administrator shall require that the flood carrying capacity within the altered or relocated portion of said watercourse is maintained and that maintenance is provided within the altered or relocated portion of said watercourse to ensure that the

flood carrying capacity is not diminished. Compliance with Section***s*** 9.10.040.F and G.

D. Anchoring. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. All manufactured dwellings shall be anchored in accordance with ~~subsection~~ ***Section 9.10.050.***M.4.

E. 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 discharge 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 Oregon Department of Environmental Quality regulations.

F. Electrical, Mechanical, Plumbing, and Other Equipment. Electrical, heating, ventilating, air-conditioning, plumbing, duct systems, and other equipment and service facilities shall be elevated at or 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, if replaced as part of a substantial improvement, meet all the requirements of this section.

G. Tanks. Underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood. Above-ground tanks shall be installed at or above the base flood level or shall be anchored to prevent flotation, collapse, and lateral movement under conditions of the base flood.

H. Critical Facilities. Construction of new critical facilities must be, to the extent practicable, located outside ***the***~~areas of~~ special flood hazard ***area***.

1. Construction of new critical facilities, other than critical bridges, are allowed within ***the***~~areas of~~ special flood hazard ***area*** if no feasible alternative site is available and the following applicable criteria are met:

a. Critical facilities constructed within ***the***~~areas of~~ special flood hazard ***area*** must have the lowest floor elevated three feet above base flood elevation or to the height of the 500-year flood, whichever is higher.

b. To the extent practicable, access to and from the critical facility should also be protected to three feet above base flood elevation or to the height of the 500-year flood, whichever is higher.

c. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters.

2. All new and replacement critical bridges must have the lowest extension of the bridge superstructure elevated three feet above base flood elevation or to the height of the 500-year flood, whichever is higher.

3. Where standard ***in*** ~~subs.~~***S***ection ***9.10.050.***H.2 cannot be met, an analysis of alternative bridge designs is required by a registered professional civil engineer. The proposed encroachment will result in the least impact to base flood levels in the ~~area of~~ special flood hazard ***area*** of the practicable alternative bridge designs — as demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice.

I. Subdivision Proposals.

1. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) greater than 50 lots or five acres, whichever is the lesser, shall include within such proposals, base flood elevation data.

2. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) shall:

   a. Be consistent with the need to minimize flood damage.~~;~~

   b. Have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage.~~; and~~

   c. Have adequate drainage provided to reduce exposure to flood hazards.

J. Use of Other Base Flood Data. When base flood elevation data has not been provided in accordance with Section 9.10.030.B 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 9.10.050. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) must meet the requirements of ~~subsection~~***Section 9.10.050.***I. Base flood elevations shall be determined for development proposals that are five 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. When no base flood elevation data is available, the elevation requirement for development proposals within a riverine unnumbered A Zone is a minimum of two feet above the highest adjacent grade, to be reasonably safe from flooding. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

K. Structures Located in Multiple or Partial Flood Zones. In coordination with the State of Oregon Specialty Codes:

1. When a structure is located in multiple flood zones on the city's pertinent Flood Insurance Rate Maps (FIRMs) the provisions for the more restrictive flood zone shall apply.

2. When a structure is partially located in ***the***~~an area of~~ special flood hazard ***area***, the entire

structure shall meet the requirements for new construction and substantial improvements.

L. 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 ~~subsections~~***Sections 9.10.050.***A through K ***and the "no net loss" standards in Section 9.10.060.***

1. 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:

   a. Be designed to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exist of floodwaters;

   b. Be used solely for parking, storage, or building access; and

   c. Be certified by a registered professional engineer or architect or meet or exceed all of the following minimum criteria:

      i. A minimum of two openings,

      ii. The total net area of non-engineered openings shall be not less than one square inch for each square foot of enclosed area, where the enclosed area is measured on the exterior of the enclosure walls,

      iii. The bottom of all openings shall be no higher than one foot above grade,

      iv. 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, and

      v. 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.

2. Garages. Attached garages may be constructed with the garage floor slab below the base flood elevation in riverine flood zones, if the following requirements are met:

   a. If located within a floodway the proposed garage must comply with the requirements of ~~subsection~~ ***Section 9.10.050.***N;

   b. The floors are at or above grade on at least than one side;

   c. The garage is used solely for parking, building access, and/or storage;

   d. The garage is constructed with flood openings in compliance with ~~subsection~~***Section 9.10.050.***L.1 to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater;

   e. The portions of the garage constructed below the base flood elevation are constructed with

materials resistant to flood damage;

f. The garage is constructed in compliance with the general standards ~~subsections~~***Sections 9.10.050.***A through K; and

g. 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.

3. Detached Garages. Detached garages must be constructed in compliance with the standards for appurtenant structures in ~~subsection~~ ***Section 9.10.050.***M.6 or nonresidential structures in ~~subsection~~ ***Section 9.10.050.***M.3 depending on the square footage of the garage.

M. For Riverine (Non-Coastal) ~~Areas of~~ Special Flood Hazard ***Areas*** with Base Flood Elevations. In addition to the general standards in ~~subsections~~***Sections 9.10.050.***A through K, the following specific standards shall apply in riverine (non-coastal) ~~areas of~~ special flood hazard ***areas*** with base flood elevations: Zones A1-A30, AH, and AE:

1. Before Regulatory Floodway. 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 city'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 at any point within the city ***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 9.10.060.***

2. Residential Construction.

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

b. Enclosed areas below the lowest floor shall comply with the flood opening requirements in ~~subsection~~ ***Section 9.10.050.***L.1.

3. Nonresidential Construction.

a. New construction, conversion to, and substantial improvement of, any commercial, industrial, or other nonresidential structure shall have the lowest floor, including basement, elevated at one foot above the base flood elevation. 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; and

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 or review of the structural design, specifications and plans. Such certifications shall be provided to the Floodplain Administrator as set forth Section 9.10.040.D.

b. Nonresidential structures that are elevated, not floodproofed, shall comply with the standards for enclosed areas below the lowest floor in ~~subsection~~ ***Section 9.10.050.***L.1.

c. 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 floodproofed to the base flood level will be rated as one foot below.

4. Manufactured Dwellings.

a. 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 ~~subsection~~ ***Section 9.10.050.***L.1;

b. The bottom of the longitudinal chassis frame beam shall be at or above base flood elevation;

c. 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

d. Electrical crossover connections shall be a minimum of 12 inches above base flood elevation (BFE).

5. Recreational Vehicles. Recreational vehicles placed on sites are required to:

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 requirements of ~~subsection~~ ***Section 9.10.050.***M.4, including the anchoring and elevation requirements for manufactured dwellings.

6. Appurtenant (Accessory) Structures. Relief from elevation or floodproofing requirements for residential and nonresidential structures in Riverine (non-coastal) flood zones may be granted for appurtenant structures that meet the following requirements:

a. Appurtenant structures located partially or entirely within the floodway must comply with requirements for development within a floodway found in ~~subsection~~ ***Section 9.10.050.***N;

b. Appurtenant structures must only be used for parking, access, or storage and shall not be used for human habitation;

c. Appurtenant structures on properties are limited to one-story structures less than 600 square feet in A zones and must meet applicable setbacks from property lines;

d. The portions of the appurtenant structure located below the base flood elevation must be built using flood resistant materials;

e. 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;

f. 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 ~~subsection~~ ***Section 9.10.050.***L.1;

g. Appurtenant structures shall be located and constructed to have low damage potential;

h. 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 incompliance with ~~subsection~~ ***Section 9.10.050.***G; and

i. 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.

N. Floodways. Located within the ~~areas of~~ special flood hazard ***areas*** established in Section 9.10.030.B are areas designated as floodways. Because 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:

1. Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless:

a. 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 city during the occurrence of the base flood discharge; or

b. A city may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that ~~a C~~***c***onditional ~~Letter of Map Revision is applied for and approved~~***approval has been obtained from*** ~~by~~ the Federal Insurance Administrator ***through the Conditional Letter of Map Revision (CLOMR) application process,*** ~~and the requirements for such revision as all~~ ***requirements*** established under Volume 44 of the Code of Federal Regulations, Section 65.12 are fulfilled***, and the encroachments comply with the "no net loss" standards in Section 9.10.060.***

2. If the requirements of ~~subsection~~ ***Section 9.10.050.***N.1 are satisfied, all new construction,

substantial improvements, and other development shall comply with all other applicable flood hazard reduction provisions of Section 9.10.050.

O. 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.

1. Standards for AH Zones. Development within AH Zones must comply with the standards in ~~subsection~~ ***Section 9.10.050.***A through O.

2. Standards for AO Zones. In AO zones, the following provisions apply in addition to the requirements in ~~subsection~~ ***Section 9.10.050.***A through K and O.

   a. 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 to or above the depth number specified on the Flood Insurance Rate Maps or at least two 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.

   b. New construction, conversion to, and substantial improvements of nonresidential structures within AO Zones shall either:

      i. Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, at minimum to or above the depth number specified on the Flood Insurance Rate Maps or at least two feet if no depth number is specified; or

      ii. Together with attendant utility and sanitary facilities, be completely floodproofed to or above the depth number specified on the Flood Insurance Rate Map or a minimum of two 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 ~~subsection~~ ***Section 9.10.050.***M.3.a.iii.

   c. Recreational vehicles placed on sites within AO Zones on the city's Flood Insurance Rate Maps 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 elevation requirements of ~~subsection~~ ***Section 9.10.050.***O.2.a, and the anchoring

and other requirements for manufactured dwellings of ~~subsection~~ ***Section 9.10.050.***M.4.

d. In AO Zones, new and substantially improved appurtenant structures must comply with the standards in ~~subsection~~ ***Section 9.10.050.***M.6.

e. In AO zones, enclosed areas beneath elevated structures shall comply with the requirements in ~~subsection~~ ***Section 9.10.050.***L.1.

9.10.060. No Net Loss Standards.

A. General Provisions.

1. ***All 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 must achieve no net loss of the proxies for the floodplain functions. "No net loss" standards can be achieved by first avoiding negative effects to floodplain functions to the greatest degree practicable, then by minimizing remaining effects, then by replacing and/or otherwise compensating for, offsetting, or rectifying the residual adverse effects to the three floodplain functions.***

2. ***Compliance with "no net loss" standards for undeveloped space or impervious surface must occur prior to the loss of habitat function or concurrent with the loss.***

3. ***Mitigations that meet "no net loss" standards must be provided within, in order of preference: 1) the lot or parcel that floodplain functions were removed from, 2) the same reach of the waterbody where the development is proposed, or 3) the special flood hazard area within the same hydrologically connected area as the proposed development. Table 9.10 presents the no net loss mitigation ratios, which increase based on the preferences listed above.***

B. Undeveloped space. Development proposals must not reduce the fish-accessible and egress-able habitat and flood storage volume created by undeveloped space within the special flood hazard area. A development proposal with an activity that would impact undeveloped space must achieve no net loss of fish-accessible and egress-able space and flood storage volume. Lost undeveloped space must be replaced with fish-accessible and egress-able compensatory volume based on the ratios in Table 9.10; must be hydrologically connected to the waterbody that is the flooding source; and must be designed so that there is no increase in velocity.

C. Impervious surfaces. Impervious surface mitigation must be mitigated through any of the following options:

1. ***Development proposals must not result in a net increase in impervious surface area within the special flood hazard area through the use of ratios prescribed in Table 9.10 or***

2. ***Use low impact development or green infrastructure to infiltrate and treat stormwater produced by the new impervious surface, as documented by a registered professional engineer, or***

3. ***If prior methods are not feasible and documented by registered professional engineer 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 9.10.060.E.3 for stormwater retention specifications.***

D. Trees. Development proposals must result in no net loss of trees 6-inches dbh or greater within the special flood hazard area.

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 9.10 and planted within the special flood hazard area.

2. Replacement trees must be a native species that would occur naturally in the Level III ecoregion of the impact area.

E. Stormwater Management. Any development proposal that cannot mitigate as specified in Sections 9.10.060.C.1 and 9.10.060.C.2 must include the following:

1. Water quality (pollution reduction) treatment for post-construction stormwater runoff from any net increase in impervious area. Water quality facilities must 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; and

2. Water quantity treatment (retention or detention facilities). Retention and detention facilities must:

a. 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 flow event and the 10-year flow event (annual series).

b. Be designed to not entrap fish.

c. Be certified by a registered professional engineer.

d. Drain to the source of flooding.

3. Stormwater treatment facilities serving multiple lots or parcels, including subdivisions, must have an enforceable operation and maintenance agreement to ensure the system functions as designed. This agreement must include:

a. Recorded access to stormwater treatment facilities at the site by the City of Tigard for the purpose of inspection and repair.

b. 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.

c. 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.

d. The responsible party for the operation and maintenance of the stormwater facility must 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 Tigard for five years.

F. Exempt Activities. The following activities are not subject to the "no net loss" standards; however, they may be subject to other floodplain development permit requirements.

1. 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.

2. Normal street, sidewalk, and road maintenance, including but not limited to filling potholes, repaving, and installing signs and traffic signals, that does not alter contours, use or alter culverts, and is less than six inches above grade. Any expansion of paved areas is not an exempt activity.

3. Routine maintenance of landscaping that does not involve grading, excavation, or filling.

4. 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.

5. Routine silvicultural practices (harvesting of trees), including hazardous fuels reduction and hazard tree removal, as long as root balls are left in place.

6. Removal of noxious weeds and hazard trees, and replacement of non-native vegetation with native vegetation.

7. 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.

8. 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.

9. Habitat restoration activities.

10. Pre-emptive removal of documented susceptible trees to manage the spread of invasive species.

11. Projects that are covered under separate consultations under Section 4(d), 7, or 10 of the Endangered Species Act (ESA).

G. Riparian Buffer Zone (RBZ).

1. 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.

2. Functionally dependent uses are only subject to the "no net loss" standards in Sections 9.10.060.A through D 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 of Subsection 9.10.060.G.4, in addition to "no net loss" standards.

3. 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 of Subsection 9.10.060.G.4.

4. Under FEMA's beneficial gain standard, an area within the same reach of the project and equivalent to 5% of the total project area within the RBZ must be planted with native herbaceous, shrub, and tree vegetation.

Table 9.10 "No Net Loss" Mitigation Standards

Basic Mitigate Ratios	***Undeveloped Space (ft3)***	***Impervious Surface (ft2)***	***Trees (6"<dbh≤20")***	***Trees (20"<dbh≤39")***	***Trees (39"<dbh)***
RBZ and Floodway	***2:1***	***1:1***	***3:1***	***5:1***	***6:1***
RBZ-Fringe	***1.5:1***	***1:1***	***2:1***	***4:1***	***5:1***
Mitigation Multipliers:					
Mitigation onsite to Mitigation offsite, same reach	***100%***	***100%***	***100%***	***100%***	***100%***
Mitigation onsite to Mitigation offsite, different reach, same watershed (5th field)	***200%***	***200%***	***200%***	***200%***	***200%***

Notes:

1. ***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. For example, if a development would create 1,000 square feet of new impervious surface, then 1,000 square feet of new pervious surface would need to be created. However, if only 500 square feet can be created within the same reach, the remaining 500 square feet created within a different reach would need to be double the required amount because of the 200 percent multiplier. In other words, another 1,000 square feet of pervious surface would need to be created at the location in the different reach, in addition to the 500 square feet created within the same reach.***

9.10.0~~7~~60. Violations.

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations, including, but not limited to, TCDC Chapter 18.510, Sensitive Lands. Violations of the provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a Class 1 civil infraction, processed according to the procedures in the civil infractions ordinance, set out in TMC Chapter 1.16. Each violation of a separate provision of this chapter shall constitute a separate infraction, and each day that a violation of this chapter is committed or

permitted to continue shall constitute a separate infraction. A finding of a violation of this chapter shall not relieve the responsible party of the duty to abate the violation. The penalties imposed by this section are in addition and not in lieu of any remedies available to the city. If a provision of this chapter is violated by a firm or corporation, the officer or officers, or person or persons responsible for the violation shall be subject to the penalties imposed by this chapter. Nothing contained herein shall prevent the City of Tigard from taking such other lawful action as is necessary to prevent or remedy any violation.