

ORDINANCE NO. 1413-18

AN ORDINANCE RELATING TO THE FLOODPLAIN DISTRICT; AND AMENDING TUALATIN DEVELOPMENT CODE CHAPTER 70 TO ADOPT FEDERAL EMERGENCY MANAGEMENT AGENCY REQUIREMENTS FOR DEVELOPMENT OF THE FLOODPLAIN.

WHEREAS, in order to receive flood insurance through the Federal Emergency Management Agency (FEMA), the City is required to adopt current FEMA requirements with respect to development within the floodplain;

WHEREAS, the Community Development Director initiated Plan Text Amendment PTA18-0002, which was amended to PTA18-0002A;

WHEREAS, the City provided notice of PTA18-0002A to the Oregon Department of Land Conservation and Development, as provided by ORS 197.610;

WHEREAS, the City provided notice of the public hearing to property owners in compliance with ORS 227.186 (Ballot Measure 56);

WHEREAS, notice of public hearing of PTA18-0002A was given as required by Tualatin Development Code (TDC) 1.031; and

WHEREAS, Council approved PTA18-0002A after a public hearing was held where Council heard and considered the testimony and evidence presented by City staff, and those appearing at the public hearing.

THE CITY OF TUALATIN ORDAINS AS FOLLOWS:

**Section 1.** TDC Chapter 70 is amended as follows:

**STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE, OBJECTIVES**

**Section 70.005 – Authorization.**

Under Article XI, section 2 of the Oregon Constitution and the Charter of the City of Tualatin, the City of Tualatin has the authority to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the City of Tualatin adopts this Floodplain Management Chapter.

**Section 70.007 – Findings of Fact.**

(1) The flood hazard areas of the City of Tualatin are subject to periodic inundation which results 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.

(2) These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to the flood loss.

**Section 70.010 – Statement of Purpose.** It is the purpose of this Chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- (1) ~~To~~ Protect human life and health;
- (2) ~~To~~ Minimize expenditure of public money and costly flood control projects;
- (3) ~~To~~ Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) ~~To~~ Minimize prolonged business interruptions;
- (5) ~~To~~ Minimize damage to public facilities and utilities such as water and gas mains; electric, telephone and sewer lines; streets; and bridges located in areas of special flood hazard;
- (6) ~~To~~ Help to maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- (7) ~~To~~ Ensure that potential buyers are notified that property is in an area of special flood hazard; and
- (8) ~~To~~ Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

**Section 70.020 – Methods of Reducing Flood Losses.** In order to accomplish its purposes, this Chapter includes methods and provisions for:

- (1) Restricting or prohibiting uses that are dangerous to health, safety, and property due to water or erosion hazards, or ~~that~~ which result in damaging increases in erosion or in flood heights or velocities;
- (2) Requiring that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- (3) Controlling the alteration of natural flood plains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;

(4) Controlling filling, grading, dredging, and other development ~~that~~ which may increase flood damage; and

(5) Preventing or regulating the construction of flood barriers that will unnaturally divert flood waters or that may increase flood hazards in other areas; and

(6) Coordinating and supplementing the provisions of the state building code with local land use and development ordinances.

**Section 70.030 – Definitions.** ~~Unless specifically defined below, words or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage and to give this chapter most reasonable application. The words and phrases below have the following meanings:~~

~~*Appeal.*~~ A means a request for a review of the City Engineer’s Local Floodplain Administrator’s interpretation of any provision of this Chapter or a request for a variance.

~~*Area of Shallow Flooding.*~~ A designated AO or AH Zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from 1 to 3 feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and velocity flow may be evident. AO is characterized as sheet flow and AH indicates ponding. means a designated AO, or AH Zone on a community’s Flood Insurance Rate Map (FIRM) with a one percent or greater 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 ~~4-percent~~ one percent or greater chance of flooding in any given year. Designation on maps always includes the letters A or V.

~~*Base Flood.*~~ The flood having a ~~4-percent~~ one percent chance of being equaled or exceeded in any given year. Also referred to as the “100-year flood.” Designation on maps always includes the letters A or V.

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

~~*Below-Grade Crawl Space*~~ means an enclosed area below the base flood elevation in which the interior grade is not more than two feet below the lowest adjacent exterior grade and the height, measured from the interior grade of the crawlspace to the top of the crawlspace foundation, does not exceed four feet at any point.

~~*Critical Facility.*~~ The facilities such as hospitals, fire stations, police stations, storage of critical records and similar facilities. means a facility for which even a slight chance of

flooding might be too great. Critical facilities include, but are not limited to schools, nursing homes, hospitals, police, fire and emergency response installations, installations which produce, use or store hazardous material or hazardous waste.

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

*Elevated Building—means for* For insurance purposes, a non-basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.

~~*Existing Manufactured Home Park or Subdivision.* A manufacturing home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.~~

~~*Expansion to an Existing Manufactured Home Park or Subdivision.* The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).~~

~~*Flood or Flooding.* A general and temporary condition of partial or complete inundation of normally dry land areas from:~~

- ~~—(a) The overflow of inland or tidal waters; and/or~~
  - ~~—(b) The unusual and rapid accumulation of runoff of surface waters from any source.~~
- means:

(a) a general and temporary condition of partial or complete inundation of normally dry land areas from:

(1) The overflow of inland or tidal waters.

(2) The unusual and rapid accumulation of runoff of surface waters from any source.

(3) 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.

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

*Flood Insurance Study*—means the ~~The official report provided by the Federal Insurance and Mitigation Administration that includes flood profiles, the Flood Boundary-Floodway Map, and the water surface elevation of the base flood~~ that is 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* means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

*Floodway*—means the ~~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.~~

*Lowest Floor*—means the ~~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~~ Provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this chapter, found in subsection TDC 70.180(1)(c)(Specific Standards for Residential Construction).

*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.

*Manufactured Home Park or Subdivision*—means a ~~A parcel (or contiguous parcels) of land divided into two or more manufactured dwelling home lots for rent or sale.~~

*New Construction*—means Structures ~~structures~~ for which the "start of construction" commenced on or after the effective date of this chapter (a floodplain management regulation adopted by a community) and includes any subsequent improvements to such structures.

~~*New Manufactured Home Park or Subdivision.* A manufacturing home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the floodplain management regulations adopted by a community.~~

*Recreational Vehicle* means a vehicle which is:

(a) Built on a single chassis;

(b) 400 square feet or less when measured at the largest horizontal projection;

(c) Designed to be self-propelled or permanently towable by a light duty truck; and

(d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

~~*Start of Construction* includes~~ includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

~~*Structure*~~ means, for floodplain management purposes, A 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 ~~Damage~~ of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal to or exceed 50 percent of the market value of the structure before the damage occurred.

~~*Substantial Improvement*~~ means any Any repair, 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) Before the improvement or repair is started; or

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

~~The term "substantial improvement" does not, however, include either:~~

~~(c) (a) Any project for improvement of a structure to correct existing violations of comply with existing state or local health, sanitary, or safety code specifications that which have been identified by the local code enforcement official and which are the minimum are solely necessary to assure safe living conditions; or~~

~~(d) (b) Any alteration of a "historic structure" provided that the alteration will not preclude the structure's designation as a "historic structure." structure listed on the National Register of Historic Places or a State Inventory of Historic Places.~~

~~Variance. means a A grant of relief by a community from the requirements terms of this chapter a floodplain management regulations (the requirements of this chapter). that permits construction in a manner that would otherwise be prohibited by this chapter.~~

~~Water Dependent Use. means a A structure for commerce or industry which cannot exist in any other location and is dependent on the water by reason of the intrinsic nature of its operations. 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, but does not include long-term storage or related manufacturing facilities.~~

## **GENERAL PROVISIONS**

### **Section 70.040 – Lands to Which This Chapter Applies.**

This chapter shall apply to all areas of special flood hazards within the jurisdiction of the City of Tualatin.

### **Section 70.050 – Basis for Establishing the Areas of Special Flood Hazard.**

The areas of special flood hazard identified by the Federal Insurance and Mitigation Administration in a scientific and engineering report entitled "'Flood Insurance Rate Map, Washington County, Oregon and Incorporated Areas," effective date November 4, 2016 with superseded panels 41067C0593F and 41067C606F effective October 19, 2018, together with the "Flood Insurance Study for Washington County Oregon and Incorporated Areas," dated October 19, 2018, are hereby adopted by reference and declared to be a part of this Chapter. The Flood Insurance Study is on file at the City of Tualatin City Offices, 18880 SW Martinazzi Avenue, Tualatin, Oregon 97062. The best available information for flood hazard area identification as outlined in TDC 70.140(2) (Duties and Responsibilities of Local Floodplain Administrator) shall be the basis for regulation until a new FIRM is issued which incorporates the data utilized under TDC 70.140(2) (Duties and Responsibilities of Local Floodplain Administrator).

~~The City of Tualatin adopts the maps entitled "Flood Insurance Rate Map, Washington County, Oregon and Incorporated Areas," effective date November 4, 2016 together with the "Flood Insurance Study for Washington County Oregon and Incorporated Areas," dated November 4, 2016. The Flood Boundary and Floodway Maps, as provided for in the regulations of the Federal Emergency Management Agency (FEMA) (44 CFR part 59-60) are adopted by reference as establishing the floodplain, floodway, and drainage hazard areas of the City of Tualatin. Where the maps are not available or where the City Engineer determines more accurate information is available, the City Engineer may use any base flood elevation and floodway data available from a federal or state source, or from a licensed professional engineer, to determine the boundaries of the floodplain, floodway, and drainage hazard areas of the City of Tualatin, as provided in TDC 70.140. The Flood Insurance Study is on file at the City Center, 18880 SW Martinazzi Avenue, Tualatin, Oregon 97062.~~

**Section 70.060 – Penalties for Noncompliance Compliance.**

(1) 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.

(2) 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 civil infraction and subject to a fine of up to \$1,000. Each violation, and each day that a violation continues, is a separate civil infraction.

(3) The civil infraction procedures in Tualatin Municipal Code Chapter 7-01 apply to the prosecution of any violation of this Chapter.

(4) Nothing herein contained shall prevent the City of Tualatin from taking such other lawful action as is necessary to prevent or remedy.

**Section 70.070 – Abrogation and Greater Restrictions and Severability.**

(1) This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and any code, ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(2) 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 Ordinance.

**Section 70.080 – Interpretation.** In the interpretation and application of this Chapter, all provisions shall be:

(1) Considered as minimum requirements;



(2) Liberally construed in favor of the governing body; and

(3) Deemed neither to limit nor repeal any other powers granted under State statutes.

**Section 70.090 – Warning and Disclaimer of Liability.** 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 or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the City of Tualatin, any officer or employee thereof, or the Federal Insurance and Mitigation Administration, for any flood damages that result from reliance on this Chapter or any administrative decision lawfully made hereunder.

#### **ADMINISTRATION**

**Section 70.110 – Development Permit Required.** A development permit shall be obtained before construction or development begins within any area of special flood hazard established by TDC 70.050 (Basis for Establishing the Areas of Special Flood Hazard). The permit shall be for all structures, including manufactured homes, as set forth in ~~the TDC 70.030 (Definitions), "Definitions,"~~ and for all other development, including fill and other activities, also as set forth in TDC 70.030 (Definitions) ~~the "Definitions."~~

**Section 70.120 – Application for Development Permit.** Application for a development permit shall be made on forms furnished by the ~~City Engineer~~ Local 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) Elevation, ~~in relation to mean sea level,~~ of the lowest floor (including basement) of all structures;

(2) Elevation, ~~in relation to mean sea level;~~ of floodproofing of any structure to which any structure has been flood proofed;

(3) Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the flood proofing criteria in TDC 70.180(2)(Specific Standards for Nonresidential Structures); and

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

**Section 70.130 – Designation of the Local Floodplain Administrator.**

The City Engineer ~~Manager, or designee~~, is hereby appointed as the Local Floodplain Administrator to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions.

~~**Section 70.135 Provide Base Flood Elevation and Freeboard to Building Official.**~~

~~The City Engineer will provide the base flood elevation information to the Building Official along with any freeboard requirements in order to administer the Building Codes.~~

**Section 70.140 – Duties and Responsibilities of the Local Floodplain**

**Administrator.** The duties of the City Engineer Local Floodplain Administrator shall include, but not be limited to, ~~those listed in this Section:~~

**(1) Development Permit Application and Permit Review.**

(a) Review all development permits to determine that the permit requirements of this Chapter have been satisfied.

(b) Review all development permits to determine that all necessary permits have been obtained from those Federal, State or local governmental agencies from which prior approval is required.

(c) Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of TDC 70.190(4)(Floodways) are met.

(d) Provide to building officials the base flood elevation and freeboard applicable to any building requiring a building permit

(e) Review all development permit applications to determine if the proposed development qualifies as a substantial improvement, as set forth in the TDC 70.030 (Definitions).

**(2) Use of Other Base Flood Data (In A and V Zones).** When base flood elevation data has not been provided (A and V Zones) in accordance with TDC 70.050 ~~BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD~~ (Basis for Establishing the Areas of Special Flood Hazard), the City Engineer Local Floodplain Administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a Federal, State or other source, in order to administer TDC 70.180, ~~SPECIFIC STANDARDS~~, (Specific Standards) and TDC 70.190 ~~FLOODWAYS~~ (Floodways).

**(3) Review of Building Permits.** Where a FIRM and Flood Insurance Study have not been provided by the Federal Insurance and Mitigation Administration and elevation

date is not available from another authoritative source (TDC 70.140(2) (Use of Other Base Flood Data (In A and V Zones))), 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.

~~(3)~~ **(4) Information to Be Obtained and Maintained.**

(a) Where base flood elevation data is provided through the Flood Insurance Study, FIRM, or as required ~~under~~ by ~~subsection~~ TDC 70.140(2) (Use of Other Base Flood Data (In A and V Zones)), obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement and below-grade crawlspaces) of all new or substantially improved structures, and whether or not the structure contains a basement.

(b) For all new or substantially improved flood proofed structures where base flood elevation data is provided through the Flood Insurance Study, FIRM, or as required in TDC 70.140(2) (Use of Other Base Flood Data (In A and V Zones)):

(i) Verify and record the actual elevation (in relation to mean sea level); and

(ii) Maintain the flood proofing certifications required by TDC 70.120(3).

(c) Maintain for public inspection all records pertaining to the provisions of this Chapter.

~~(4)~~ **(5) Alteration of Watercourses.**

(a) Notify adjacent communities and 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 and Mitigation Administration as required in TDC 70.130(6).

(b) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

**(6) Requirement to Submit New Technical Data.**

(a) 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).

(b) The property owner shall be responsible for preparing technical data to support the LOMR application and paying any processing or application fees to FEMA.

(c) The Floodplain Administrator shall be under no obligation to sign the Community Acknowledgement Form, which is part of the CLOMR/LOMR application, until the applicant demonstrates that the project will or has met the requirements of this code and all applicable State and Federal laws.

~~(5)~~**(7) Interpretation of FIRM Boundaries.** Make interpretations when needed, as to 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 interpretation as provided in TDC 70.150 (City Council as Appeal Board).

**(8) 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.

## **VARIANCE PROCEDURE**

### **~~PROVISIONS FOR FLOOD HAZARD REDUCTION~~**

#### **Section 70.150 – City Council ~~Action as~~ Appeal Board.**

(1) The City Council of the City of Tualatin shall hear and decide appeals and requests for variances from the requirements of this Chapter.

(2) ~~The City Council shall hear the matter in accordance with quasi-judicial evidentiary hearing procedures (TDC) and decide appeals when it is alleged that there is an error in any requirement, decision, or determination made by the City Engineer.~~ Local Floodplain Administrator in the enforcement or administration of this Chapter.

(3) Those aggrieved by the decision of the City Council, or any taxpayer, may appeal such decision in accordance with State law.

(4) In passing upon such applications, the City Council shall consider all technical evaluations, all relevant factors, standards specified in other sections of this Chapter, and:

- (a) The danger that materials may be swept onto other lands to the injury of others;
- (b) The danger to life and property due to flooding or erosion damage;
- (c) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
- (d) The importance of the services provided by the proposed facility to the community;
- (e) The necessity to the facility of a waterfront location, when applicable;
- (f) The availability of alternative locations for the proposed use that which are not subject to flooding or erosion damage;
- (g) The compatibility of the proposed use with existing and anticipated development;
- (h) The relationship of the proposed use to the Comprehensive Plan and flood plain management program for that area;
- (i) The safety of access to the property in times of flood for ordinary and emergency vehicles;
- (j) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
- (k) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

(5) Upon consideration of the factors in TDC 70.150(4)(City Council as Appeal Board) and the purposes of this Chapter, the City Council may attach such conditions to the granting of variances as it deems necessary to further the purposes of this Chapter. The requirements for variances as described in TDC 33 must also be met.

(6) The ~~City Engineer~~ Local Floodplain Administrator shall maintain the records of all appeal actions and report any variances to the Federal Insurance and Mitigation Administration upon request.

### **Section 70.160 – Conditions for Variances.**

(1) Generally, the only condition under which a variance from the elevation standard may be issued is 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, providing items (a) through (k) in TDC

70.150(4)(City Council as Appeal Board) have been fully considered. As the lot size increases the technical justification required for issuing the variance increases.

(2) Variances may be issued for the ~~reconstruction, repair or rehabilitation or restoration~~ of historic structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this section, provided that the alteration will not preclude the structure's designation as an "historic structure" and the variance is the minimum necessary to preserve the historic character and design of the structure.

(3) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

(4) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(5) Variances shall only be issued upon:

(a) A showing of good and sufficient cause;

(b) A determination that failure to grant the variance would result in exceptional hardship to the applicant; and

(c) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, creation of nuisances, fraud on or victimization of the public as identified in TDC 70.150(4)(City Council as Appeal Board) or conflict with existing local laws or ordinances.

(6) Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece of 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.

(7) Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of flood proofing than watertight or dry-flood proofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except 70.160(1)(Conditions for Variances), and otherwise complies with subsections 70.170(1) and (2)(General Standards).

(8) Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation and that such construction below the base flood elevation increases risks to life and property. Such notification shall be permanently maintained with the floodplain development permit.

**Section 70.170 – General Standards.** In all areas of special flood hazards, the following standards are required:

**(1) Anchoring.**

(a) All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.

(b) All manufactured dwellings shall be anchored according to TDC 70.180(3)(Specific Standards for Manufactured Dwellings). ~~must likewise be anchored to prevent flotation, collapse, or lateral movement, and be installed using methods and practices that minimize flood damage. Methods of anchoring 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.)~~

**(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 and substantial improvements shall be constructed using methods and practices that minimize flood damage.

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

~~(d) AH Zone Drainage. Adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures.~~

**(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 discharge from the systems into flood waters; and

(c) On-site waste disposal systems shall be located so as 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 be 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 so as 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) **AH and AO Zone Drainage.** Adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures. **Review of Building Permits.** ~~Where elevation data is not available either through the Flood Insurance Study or from another authoritative source (TDC 70.140(2)), applications for buildings 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.~~

**Section 70.180 – Specific Standards.** In all areas of special flood hazards where base flood elevation data has been provided (Zones A1-30, AH, and AE) as set forth in TDC 70.050 (Basis for Establishing the Areas of Special Flood Hazard), ~~"BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD,"~~ or TDC 70.140(2) (Use of Other Base Flood Data (In A and V Zones)), ~~"USE OF OTHER BASE FLOOD DATA,"~~ the following provisions are required:

**(1) Residential Construction.**

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

(b) New public streets providing vehicle access to residences, including residences within mixed use developments, shall be constructed at or above the base flood elevation. Public street rights-of-way in existence as of January 14, 1993, shall not be subject to this requirement.

(c) Below grade crawl-space construction in the floodplain shall comply with all NFIP specifications and applicable Building Code Requirements.



~~(d) Elevated structures that are not floodproofed, but that have fully~~ 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 or 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.

(iv) If a building has more than one enclosed area below the lowest floor, each area shall be equipped with adequate flood openings.

(2) **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 according to ASCE 24; at least one foot above the base flood elevation;~~ or, together with attendant utility and sanitary facilities, shall:

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

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

(c) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and review of the structural design, specifications and plans. Such certification shall be provided to the official as set forth in TDC 70.140(3)(b)(Duties and Responsibilities of the Local Floodplain Administrator) ;

(d) Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in TDC 70.180(1)(d)(Specific Standards for Residential Construction). ~~Elevated structures that are not floodproofed, but that have fully enclosed areas below the lowest floor that are subject to flooding be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:~~

- ~~(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 be provided.~~
- ~~(ii) The bottom of all openings 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 flood waters.~~

(e) Applicants shall supply a 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. Applicants flood proofing nonresidential buildings be notified that flood insurance premiums will be based on rates that are one foot below the flood proofed level (e.g. a building constructed to the base flood level will be rated as one foot below that level).

(f) 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.

**(3) Manufactured Dwellings.** ~~Manufactured dwellings placed or substantially improved within Zones A1-30, AH, and AE be on a permanent foundation and have the lowest floor, including basement, elevated at least one foot above the base flood elevation and be securely anchored to a foundation system in accordance with TDC 70.170(1)(b). New construction, including placement, and substantial improvement of any manufactured dwelling shall comply with the following:~~

(a) Manufactured dwellings supported on solid foundation walls shall be constructed with flood openings that comply with TDC 70.180(1)(d)(Specific Standards for Residential Construction) above;

(b) The bottom of the longitudinal chassis frame beam in A zones (excluding coastal A zones), shall be at or above BFE;

(c) The manufactured dwelling 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 BFE.

**(4) 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 TDC 70.180(3)(Specific Standards for Manufactured Dwellings) above and the elevation and anchoring requirements for manufactured homes.

In addition, recreational vehicles that are permanently placed or substantially improved within Zones A1-30, AH, and AE shall be on a permanent foundation and shall have the lowest floor, including basement, elevated at least one foot above the base flood elevation and shall be securely anchored to a foundation system in accordance with TDC 70.170(1)(b).

**(5) Small Accessory Structures.** Relief from elevation or floodproofing as required in TDC 70.180(1)(Specific Standards for Residential Structures) or TDC 70.180(2)(Specific Standards for Nonresidential Structures) above may be granted for small accessory structures that are:

(a) Less than 200 square feet and do not exceed one story;

(b) Not temperature controlled;

(c) Not used for human habitation and are used solely for parking of vehicles or storage of items having low damage potential when submerged;

(d) Not used to store toxic material, oil or gasoline, or any priority persistent pollutant identified by the Oregon Department of Environmental Quality shall unless confined in a tank installed in compliance with this ordinance or stored at least one foot above Base Flood Elevation;

(e) Located and constructed to have low damage potential;

(f) Constructed with materials resistant to flood damage;

(g) Anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood;

(h) Constructed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater. Designs for complying with this requirement must be certified by a licensed professional engineer or architect or:

(i) provide a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;

(ii) the bottom of all openings shall be no higher than one foot above the higher of the exterior or interior grade or floor immediately below the opening;

(iii) openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions without manual intervention.

(i) 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.

**(6) Below-Grade Crawl Spaces.** Below-grade crawlspaces are allowed subject to the following standards as found in FEMA Technical Bulletin 11-01, Crawl Space Construction for Buildings Located in Special Flood Hazard Areas:

(a) The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Hydrostatic loads and the effects of buoyancy can usually be addressed through the required openings stated in Section TDC 70.180(1)(Specific Standards for Residential Structures) above. Because of hydrodynamic loads, crawlspace construction is not allowed in areas with flood velocities greater than five (5) feet per second unless the design is reviewed by a qualified design professional, such as a registered architect or professional engineer. Other types of foundations are recommended for these areas.

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

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

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

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

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

(g) There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event. The type of drainage system will vary because of the site gradient and other drainage characteristics, such as soil types. Possible options include natural drainage through porous, well-drained soils and drainage systems such as perforated pipes, drainage tiles or gravel or crushed stone drainage by gravity or mechanical means.

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

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

**Section 70.185 – Before Regulatory Floodway.** In areas where a regulatory floodway has not been designated, and where the Flood Insurance Study indicates that it is possible to calculate a floodway, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's 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.

**Section 70.190 – Floodways.** Located within areas of special flood hazard established by TDC 70.050 (Basis for Establishing the Areas of Special Flood Hazard) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters that carry debris, potential projectiles, and erosion potential, the following provisions apply:

(1) Prohibit encroachments, including fill, new construction, substantial improvements, and other development that will increase in flood levels during the occurrence of the base flood discharge. Except as provided in TDC 70.190(3)(Floodways), prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional civil engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that encroachments shall not result in any increase in base flood or floodway elevations when compared to pre-project conditions.

(2) If TDC 70.190(1)(Floodways) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of TDC

70.170 to and including TDC 70.190, Provisions for Flood Hazard Reduction, or ASCE 24, whichever is more stringent.

(3) Temporary structures placed in the floodway: Relief from no-rise evaluation, elevation or dry flood-proofing standards may be granted for a non-residential structure placed during the dry season (June – October) and for a period of less than 90 days. A plan for the removal of the temporary structure after the dry season or when a flood event threatens shall be provided. The plan shall include disconnecting and protecting from water infiltration and damage all utilities servicing the temporary structure.

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

(a) The civil engineer shall, as a minimum, provide a feasibility analysis and certification that the project was designed to keep any rise in 100-year flood levels as close to zero as practically possible and that no structures will be impacted by a potential rise in flood elevation; and,

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

#### **Section 70.200 – Alterations to Floodplain, Drainage, or Watercourses.**

(1) Applicants proposing to increase the Base Flood Elevation by more than one foot or alter a watercourse must obtain a Conditional Letter of Map Revision (CLOMR) from FEMA before any encroachment, including fill, new constructions, substantial improvement, or other development, in the regulatory floodway is permitted.

(2) Within six months of project completion, an applicant for a Letter of Map Revision (LOMR) must submit a completed application to FEMA and submit evidence to the City that a Letter of Map Revision (LOMR) has been requested that reflects the as-built changes to the Flood Insurance Study (FIS) and/or Flood Insurance Rate Map (FIRM).

(3) The applicant must prepare and submit technical data to support the Conditional Letter of Map Revision (CLOMR) or Letter of Map Revision (LOMR) application and pay any processing or application fees to FEMA.

**Section 2. Findings.** The Council adopts as its findings the *Analysis and Findings* set forth in Exhibit 1, which is attached and incorporated by reference.

**Section 3. Emergency Clause.** This ordinance is necessary of the immediate protection of the public peace, health, safety and welfare and takes effect on October 19, 2018.

ADOPTED by the City Council this \_\_\_\_ day of \_\_\_\_\_, 2018.

CITY OF TUALATIN, OREGON

BY \_\_\_\_\_  
Mayor

APPROVED AS TO FORM

ATTEST:

BY \_\_\_\_\_  
City Attorney

BY \_\_\_\_\_  
City Recorder