

CITY COUNCIL AGENDA ITEM
CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Adoption of Ordinance No. 797 – SMC 13.12 Floodplain Management Code Update for FEMA Requirement
DEPARTMENT:	Public Works
PRESENTED BY:	Uki Dele, Surface Water and Environmental Services Manager
ACTION:	<input checked="" type="checkbox"/> Ordinance <input type="checkbox"/> Resolution <input type="checkbox"/> Motion <input type="checkbox"/> Discussion <input type="checkbox"/> Public Hearing

PROBLEM/ISSUE STATEMENT:

The City is a participating community in the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP). To participate, the City must adopt and enforce a floodplain management ordinance that regulates development in the City's floodplains and that meets state and federal standards.

The NFIP has four goals: (1) provide affordable flood insurance coverage not available in the private market, (2) stimulate local floodplain management to guide future development, (3) emphasize less costly nonstructural flood control regulatory measures over structural measures, and (4) reduce Federal disaster costs by shifting the burden from all taxpayers to floodplain occupants.

On May 19, 2017, FEMA conducted a Community Assistance Contact (CAC) with the City of Shoreline. CACs are cursory assessments of a community's flood plain management program that ensures communities participating in NFIP are properly regulating flood plain management and development.

Part of the assessment included a FEMA review of the City of Shoreline's Floodplain Management regulations contained in Chapter 13.12 of Shoreline Municipal Code (SMC). One of the findings was that SMC Chapter 13.12 requires two updates in order to meet the minimum requirements of the NFIP – a modification to definitions (SMC 13.12.105) and an update to the date of the Flood Insurance Study for King County (SMC 13.12.300).

In response to this finding and direction from FEMA, staff drafted the limited, proposed updates to the SMC Chapter 13.12 as set forth in proposed Ordinance No. 797. Adoption of this ordinance will maintain the City's eligibility for the National Flood Insurance Program (NFIP). On September 11, 2017, the proposed ordinance was discussed with council.

RESOURCE/FINANCIAL IMPACT:

There is no financial impact associated with tonight's action.

RECOMMENDATION

Staff recommends that Council move to adopt Ordinance No. 797

Approved By: City Manager ***DT*** City Attorney ***JA-T***

INTRODUCTION

On May 19, 2017, the Federal Emergency Management Agency (FEMA) conducted a Community Assistance Contact (CAC) with the City of Shoreline. CACs are cursory assessments of a community's flood plain management program, which consists of the following broad tasks: interview with the community Flood Plain Administrator, flood plain management compliance and implementation analysis, and a determination whether a community field survey is needed through FEMA or the Washington State Department of Ecology.

CACs ensure that communities participating in the National Flood Insurance Program (NFIP) are properly regulating flood plain management and development by serving the following purposes:

1. Encourage communication among local flood plain administrators, the State NFIP Coordinator, and FEMA;
2. Ensure community NFIP compliance through ordinance enforcement and permitting procedures;
3. Facilitate discussion of local flood plain management duties and identify discrepancies; and
4. Assess community flood plain administrator training needs.

CACs serve as a vital component in protecting the City of Shoreline from liability of damages sustained during flooding events. The main goal, however, is to protect the public's health, safety, and welfare by ensuring development in the flood plain occurs in a safe manner. To accomplish these objectives, a community's NFIP participation must be effectively administered through accurate flood plain regulations.

Findings from the CAC assessment have been documented in Attachment A. One of the findings was that the City of Shoreline's Floodplain Management regulations contained in Chapter 13.12 of Shoreline Municipal Code (SMC) requires two updates in order to meet the minimum requirements of the NFIP – a modification to definitions (SMC 13.12.105) and an update to the date of the Flood Insurance Study for King County (SMC 13.12.300).

In response to these findings and direction from FEMA, staff drafted Ordinance No. 797 to update SMC Chapter 13.12. Adoption of this ordinance will bring the City in compliance with FEMA regulations and maintain the City's eligibility for the NFIP. On September 11, 2017, the proposed ordinance was discussed with Council and the staff report documenting the discussion can be found at the following link:
<http://cosweb.ci.shoreline.wa.us/uploads/attachments/cck/council/staffreports/2017/staffreport091117-8c.pdf>

BACKGROUND

The City is a participating community in FEMA's NFIP. To participate, the City must adopt and enforce a floodplain management ordinance that regulates development in the City's FEMA designated floodplains. Flood insurance rate maps that delineate high hazard flood areas are subject to floodplain regulation and required flood insurance. In

Shoreline, these FEMA floodplains are currently regulated along the North Fork of Thornton Creek, Boeing Creek, and the Puget Sound shoreline.

Floodplains are areas of land that are inundated by surface water during large storm events. FEMA regulates floodplains on the “base flood” or sometimes referred to as the 100-year flood. The 100-year flood is defined as having a 1% chance of occurrence in any given year. A 100-year flood may seem like a rare occurrence, but has a 26% probability of occurring over the life of a 30-year mortgage for a home located within a 100-year flood zone. FEMA floodplain maps and studies are usually performed along streams, rivers, or coastlines that are subject to development or potential development that are likely to be affected by flooding.

Federal flood insurance is available only in those communities that participate in the NFIP. Flood insurance is required for federally backed loans to purchase or build structures located within a FEMA designated floodplain. Additionally, this insurance can be purchased for any walled or roofed building and its contents anywhere in a participating community, whether or not the building is in a floodplain.

DISCUSSION

The limited proposed updates to SMC Chapter 13.12 are described below and documented in Exhibit A to Attachment B. The updates are administrative in nature so as to provide consistency with the updated FEMA regulations. The proposed amendments do not impact the current operations of the City’s Floodplain management programs.

1. SMC 13.12.105 Definitions
 - a. Revision of the definition of “Elevation Certificate” to reflect the updated version of the referenced document
 - b. Added a definition for “Market Value”
 - c. Revised the definition of “Start of Construction” to match 44 CFR 59.1
2. SMC13.12 300 B Special Flood Hazard Area
 - a. Updated date reference to reflect the most recent date on Flood Insurance Studies.

At the September 11, 2017 Council meeting where this item was discussed, the Council did not express any questions or concerns with the proposed ordinance as written. As such, proposed Ordinance No. 797 remains unchanged since that discussion and is attached for adoption.

COUNCIL GOAL ADDRESSED

This item supports City Council Goal #3: Promote and enhance the City’s safe community and neighborhood programs and initiatives.

RESOURCE/FINANCIAL IMPACT

There is no financial impact associated with tonight’s action.

RECOMMENDATION

Staff recommends that Council move to adopt Ordinance No. 797

ATTACHMENTS

Attachment A: Summary Results from CAC Assessment

Attachment B: Proposed Ordinance No. 797

Attachment B, Exhibit A: Proposed Amendments to SMC Chapter 13.12

**WASHINGTON STATE MODEL ORDINANCE
(EVALUATION SHEET)
UPDATED TO REFLECT NEW EC FORM NO. & MFR HOME PUB**

LOCALITY: ___ CITY OF SHORELINE, KING COUNTY ___

REVIEWER'S NAME: ___ CHARLIE KLINE ___

ORDINANCE NO: ___ 13.12 ___

DATE: ___ MAY 9, 2017 ___

ORDINANCE DATE: ___ SEPTEMBER 2, 2013 ___

REASON FOR REVIEW: ___ CAC ___

CRITERIA & MODEL ORDINANCE REFERENCE		A	B	C	D	E	FEDERAL REGULATION REFERENCE
1	<p>MODEL ORDINANCE 3.2 BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD</p> <p>The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for (___community name___) " dated (___), (20___), and any revisions thereto*, with an accompanying Flood Insurance Rate Map (FIRM), and any revisions thereto*, are hereby adopted by reference and declared to be a part of this ordinance. The Flood Insurance Study and the FIRM are on file at (___community address___). The best available information for flood hazard area identification as outlined in Section 4.3-2 shall be the basis for regulation until a new FIRM is issued that incorporates data utilized under Section 4.3-2.</p> <p>* <i>In some communities, the phrase "and any revisions thereto" is not considered legally binding and should not be adopted.</i></p>						<p>44 CFR 60.3(c)(1)d)(2)</p> <p>X 13.12.300(B) – Cannot find referenced FIRM anywhere. Was it a LOMR? Should be FIS for King County and Incorporated Areas dated 04/19/2005.</p> <p style="text-align: center;"><i>Recommended [UD]</i></p>
1a	<p>MODEL ORDINANCE 3.7 SEVERABILITY</p> <p>If any section, clause, sentence, or phrase of the Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way affect the validity of the remaining portions of this Ordinance.</p>						<p>Mandatory ✓ 13.12.800(H)</p>
2	<p>MODEL ORDINANCE 4.1-1 DEVELOPMENT PERMIT REQUIRED</p> <p>A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 3.2. The permit shall be for all structures including manufactured homes, as set forth in the "Definitions," and for all development including fill and other activities, also as set forth in the "Definitions."</p>						<p>44 CFR 60.3(b)(1) ✓ 13.12.700(A)(1)</p>
3	<p>MODEL ORDINANCE 4.3-1(2) PERMIT REVIEW</p> <p>Review all development permits to determine that all necessary permits have been obtained from those Federal, State, or local</p>						<p>44 CFR 60.3(a)(2) ✓ 13.12.700(A)(2)</p>

A = Flood Hazard Boundary Map

B = Flood Insurance Rate Map without elevation

C = Flood Insurance Rate Map with base flood elevations

D = Flood Insurance Rate Map with floodways

E = Flood Insurance Rate Map with floodways and V zones

OK...(✓) No...(N) Other...(X) and explain

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	governmental agencies from which prior approval is required.					
4	<p>MODEL ORDINANCE 4.3-2 USE OF OTHER BASE FLOOD DATA</p> <p>When base flood elevation data has not been provided (in A or V Zones) in accordance with Section 3.2, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, the (<i>Local Administrator</i>) 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 Sections 5.2, SPECIFIC STANDARDS, and 5.4 FLOODWAYS.</p>					<p>44 CFR 60.3(b)(4) ✓ 31.12.300(C)6</p>
5	<p>MODEL ORDINANCE 4.3-3 INFORMATION TO BE OBTAINED AND MAINTAINED</p> <p>(1) Where base flood elevation data is provided through the Flood Insurance Study, FIRM, or required as in Section 4.3-2, obtain and record the actual (as-built) elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.</p> <p>(2) For all new or substantially improved floodproofed nonresidential structures where base flood elevation data is provided through the FIS, FIRM, or as required in Section 4.3-2:</p> <p>(i) Obtain and record the elevation (in relation to mean sea level) to which the structure was floodproofed,</p> <p>(ii) Maintain the floodproofing certifications required in Section 4.1-2(3).</p> <p>(3) Maintain for public inspection all records pertaining to the provision of this ordinance.</p>					<p>44 CFR 60.3(b)(5)(i) ✓ 13.12.700(D)(5)(c) ✓ 13.12.700(D)(7)(a) for basement</p> <p>44 CFR 60.3(b)(5)(ii) ✓ 13.12.700(D)(8)</p> <p>44 CFR 60.3(b)(5)(iii) ✓ 13.12.800(A)</p>
6	<p>MODEL ORDINANCE 4.3-4(1) ALTERATION OF WATERCOURSES</p> <p>Notify adjacent communities and the Department of Ecology prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.</p>					<p>44 CFR 60.3(b)(6) ✓ 13.12.600(E)(2)</p>
7	<p>MODEL ORDINANCE 4.3-4(2) ALTERATION OF WATERCOURSES</p> <p>Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.</p>					<p>44 CFR 60.3(b)(6) ✓ 13.12.600(E)(3)</p>
8	<p>MODEL ORDINANCE 4.3-5 INTETPRETATION OF FIRM BOUNDARIES</p> <p>Make interpretations where 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 provide in Section 4.4.</p> <p><i>* If you do not include Section 4.4 (VARIANCE PROCEDURE), end the above sentence after the word "interpretation" and add the following sentence: "Such appeals shall be granted</i></p>					<p>OPTIONAL PROVISION</p>

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OK...(✓)

No...(N)

Other...(X) and explain

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	<i>consistent with the standards of Section 60.6 of the Rules and Regulations of the National Flood Insurance Program (44 CFR 59-76)."</i>						
9A	MODEL ORDINANCE 5.1-1(1) ANCHORING All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.						44 CFR 60.3(a)(3)(i) ✓ 13.12.500(B)3
9B	MODEL ORDINANCE 5.1-1(2) ANCHORING All manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors. <i>For more detailed information, refer to guidebook, FEMA P-85, "Protecting Manufactured Homes from Floods and Other Hazards."</i>						44 CFR 60.3(b)(8) ✓ 13.12.500(B)3
9D	MODEL ORDINANCE 5.1-2(1) CONSTRUCTION MATERIALS AND METHODS All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.						44 CFR 60.3(a)(3)(ii) ✓ 13.12.500(B)5
9E	MODEL ORDINANCE 5.1-2(2) CONSTRUCTION MATERIALS AND METHODS All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.						44 CFR 60.3(a)(3)(iii) ✓ 13.12.500(B)(4)
9F	MODEL ORDINANCE 5.1-2(3) CONSTRUCTION MATERIALS AND METHODS 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.						44 CFR 60.3(a)(3)(iv) ✓ 13.12.400(A)(5)
10	MODEL ORDINANCE 5.1-3(1), (2), (3), AND (4) UTILITIES (1) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems; (2) Water wells shall be located on high ground that is not in the floodway* (3) New and replacement sanitary sewerage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters; and (4) Onsite waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding. <i>* FEMA endorses the more restrictive WA floodway standard</i>						44 CFR 60.3(a)(5) ✓ 13.12.500(G)(1) WAC 173-160-171 ✓ 13.12.500(G)(2) 44 CFR 60.3(a)(6)(i) ✓ 13.12.500(G)(3) 44CFR 60.3(a)(6)(ii) ✓ 13.12.500(G)(4)

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	<i>identified in WAC 173-160-171</i>					
11	<p>MODEL ORDINANCE 5.1-4 SUBDIVISION PROPOSALS</p> <p>(1) All subdivision proposals shall be consistent with the need to minimize flood damage;</p> <p>(2) All subdivision proposals shall have public utilities and facilities, such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage;</p> <p>(3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage;</p> <p>(4) Where base flood elevation data has not been provided or is not available from another authorized source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or 5 acres (whichever is less).</p>					<p>44 CFR 60.3(a)(4)(b)(3) ✓ 13.12.400(1)</p> <p>44 CFR 60.3(a)(4)(i) ✓ 13.12.400(5)</p> <p>44 CFR 60.3(a)(4)(iii) ✓ 13.12.400(7)</p> <p>44 CFR 60.3(b)(3) ✓ 12.12.300(E)4</p>
12	<p>MODEL ORDINANCE 5.1-5 REVIEW OF BUILDING PERMITS</p> <p>Where elevation data is not available either through the Flood Insurance Study, FIRM, or from another authoritative source (Section 4.3-2), applications for building permits shall be reviewed to assure that proposed construction will be <i>reasonably safe from flooding</i>. 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 the highest adjacent grade in these zones may result in higher insurance rates.</p>					<p>44 CFR 60.3(a)(3) ✓ 13.12.300(C)(7)</p>
13	<p>MODEL ORDINANCE 5.2 SPECIFIC STANDARDS</p> <p>In all areas of special flood hazards where base flood elevation data has been provided as set forth in Section 3.2, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, or Section 4.3-2, USE OF OTHER BASE FLOOD DATA, the following provisions are required:</p> <p><i>* Additional standards were clarified in FEMA Technical Bulletin 11-01, "Crawlspace Construction for Buildings Located in Special Flood Hazard Areas"</i></p>					<p>44 CFR 60.3(c)(1)</p> <p>OPTIONAL PROVISIONS</p>
14	<p>MODEL ORDINANCE 5.2-1 RESIDENTIAL CONSTRUCTION</p> <p>(1) New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one foot or more* above the base flood elevation (BFE).</p> <p><i>* Minimum standards require the lowest floor to be elevated "to or above" the BFE; however, adding an additional foot of freeboard increases safety and reduces insurance premiums and its adoption is strongly encouraged by FEMA. This note applies throughout the model ordinance.</i></p> <p>(2) Fully enclosed areas below the lowest floor that are subject</p>					<p>44 CFR 60.3(c)(2) ✓ 12.12.500(B)(1)</p> <p>44 CFR 60.3(c)(5)</p>

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No...(N)

Other...(X) and explain

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	<p>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:</p> <p>(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.</p> <p>(ii) The bottom of all openings shall be no higher than one foot above grade.</p> <p>(iii) Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.</p>				13.12.500(B)6
15	<p>MODEL ORDINANCE 5.2-2 NONRESIDENTIAL CONSTRUCTION</p> <p>New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated one foot or more* above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:</p> <p>(1) Be floodproofed so that below one foot or more above the base flood level of the structure is watertight with walls substantially impermeable to the passage of water;</p> <p>(2) Have structural components capable of resisting hydrostatic and hydrodynamic loads including the effects of buoyancy</p> <p>(3) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in Section 4.3-3(2);</p> <p>(4) Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in 5.2-1(2);</p> <p>(5) Applicants who are 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).</p>				<p>44 CFR 60.3(c)(3)(i) ✓ 13.12.500(C)1 – references back to freeboard requirement in section above.</p> <p>44 CFR 60.3(c)(3)(ii) ✓ 13.12.500(C)(2) a - c</p> <p>44 CFR 60.3(c)(4)(i) ✓ 13.12.500(C)(2)d</p> <p>44 CFR 60.3(c)(5) ✓ 13.12.500(C)(1) – references back to section above.</p> <p><i>This bullet is not required per 44 CFR but it is recommended</i></p>
16	<p>MODEL ORDINANCE 5.2-3 MANUFACTURED HOMES</p> <p>(1) All manufactured homes to be placed or substantially improved on sites shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated one foot or more above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement*.</p> <p>* If this phrase is applied to all manufactured homes in the</p>				<p>44 CFR 60.3(c)(6) ✓ 13.12.500(D) – requires MH to meet standards of structures plus anchoring.</p>

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OK...(✓) No...(N) Other...(X) and explain

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	<p>floodplain, then the remaining verbiage is not necessary to adopt.</p> <p>This applies to manufactured homes:</p> <p>(i) Outside of a manufactured home park or subdivision,</p> <p>(ii) In a new manufactured home park or subdivision,</p> <p>(iii) In an expansion to an existing manufactured home park or subdivision, or</p> <p>(iv) In an existing manufactured home park or subdivision on a site which a manufactured home has incurred “substantial damage” as the result of a flood; and</p> <p>(2) Manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision that are not subject to the above manufactured home provisions be elevated so that either:</p> <p>(i) The lowest floor of the manufactured home is elevated one foot or more* above the base flood elevation, or</p> <p>(ii) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.</p>				<p>44 CFR 60.3(c)(6)(i)</p> <p>44 CFR 60.3(c)(6)(ii)</p> <p>44 CFR 60.3(c)(6)(iii)</p> <p>44 CFR 60.3(c)(6)(iv)</p> <p>44 CFR 60.3(c)(12)</p> <p>44 CFR 60.3(c)(12)(i)</p> <p>44 CFR 60.3(c)(12)(ii)</p>
17	<p>MODEL ORDINANCE 5-2-4</p> <p>RECREATIONAL VEHICLES</p> <p>Recreational vehicles placed on sites are required to either:</p> <p>(i) Be on the site for fewer than 180 consecutive days, (or)</p> <p>(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 have no permanently attached additions; or</p> <p>(iii) Meet the requirements of 5.2-3 above and the elevation and anchoring requirements for manufactured homes.</p>				<p>44 CFR 60.3(c)(14)(i-iii)</p> <p>✓ 13.12.500(E)</p>
18	<p>MODEL ORDINANCE 5.3</p> <p>AE AND A1-30 ZONES WITH BASE FLOOD ELEVATIONS BUT NO FLOODWAYS</p> <p>In areas with base flood elevations (but a regulatory floodway has not been designated), 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.</p>				<p>44 CFR 60.3(c)(10)</p> <p>✓ 13.12.600(C)(2)</p>
19	<p>MODEL ORDINANCE 5.4</p> <p>FLOODWAYS</p> <p>Located within areas of special flood hazard established in Section 3.2 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that can carry debris, and increase erosion potential, the following provisions apply:</p>				<p>44 CFR 60.3(d)</p>

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OK...(✓)

No...(N)

Other...(X) and explain

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<p>(1) Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels during the occurrence of the base flood discharge.</p> <p>(2) Construction or reconstruction of residential structures is prohibited within designated floodways*, except for (i) repairs, reconstruction, or improvements to a structure which do not increase the ground floor area; and (ii) repairs, reconstruction or improvements to a structure, the cost of which does not exceed 50 percent of the market value of the structure either, (A) before the repair, or reconstruction is started, or (B) if the structure has been damaged, and is being restored, before the damage occurred. 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 to structures identified as historic places, may be excluded in the 50 percent.</p> <p>* FEMA endorses the more restrictive WA floodway standard adopted in WAC 173-158-070.</p> <p>(3) If Section 5.4(1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Section 5.0, PROVISIONS FOR FLOOD HAZARD REDUCTION.</p>			<p>44 CFR 60.3(d)(3) ✓ 13.12.600(C)(1)</p> <p>WAC 173-158-070 ✓ 13.12.600(C)(1)</p>
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20	<p>MODEL ORDINANCE 5.7 CRITICAL FACILITY</p> <p>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.</p>					<p><i>OPTIONAL PROVISION</i> ✓ 13.12.400(D)</p>
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**APPENDIX A: COMMUNITIES WITH SHALLOW FLOODING
IDENTIFIED AS AO ZONES ON FLOOD INSURANCE RATE MAPS (FIRM)**

CRITERIA & MODEL ORDINANCE REFERENCE	A	B	C	D	E	FEDERAL REGULATION REFERENCE
<p>21 MODEL ORDINANCE 5.5 STANDARDS FOR SHALLOW FLOODING AREAS (AO ZONES)</p> <p>Shallow flooding areas appear on FIRMs as AO zones with depth designations. The base flood depths in these zones range from 1 to 3 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. In these areas, the following provisions apply:</p> <p>(1) New construction and substantial improvements of residential structures and manufactured homes within AO zones shall have the lowest floor (including basement) elevated above the highest adjacent grade to the structure, one foot or more above* the depth number specified in feet on the community's FIRM (at least two feet above the highest adjacent grade to the structure if no depth number is specified).</p> <p>(2) New construction and substantial improvements of nonresidential structures within AO zones shall either:</p> <p>(i) Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, one foot or more above* the depth number specified on the FIRM (at least two feet if no depth number is specified); or</p> <p>(ii) Together with attendant utility and sanitary facilities, be completely flood proofed to or above that level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. If this method is used, compliance shall be certified by a registered professional engineer, or architect as in section 5.2-2(3).</p> <p>(3) Require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.</p> <p>(4) Recreational vehicles placed on sites within AO Zones on the community's FIRM either:</p> <p>(i) Be on the site for fewer than 180 consecutive days, or</p> <p>(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</p> <p>(iii) Meet the requirements of 5.5(1) and 5.5(3) above and the anchoring requirements for manufactured homes (Section 5.1-1(2)).</p>						<p><i>OPTIONAL PROVISION</i></p> <p><i>44 CFR 60.3(c)(7)</i></p> <p><i>44 CFR 60.3(c)(8)</i></p> <p><i>44 CFR 60.3(c)(8)(ii)</i></p> <p><i>44 CFR 60.3(c)(11)</i></p>

A = Flood Hazard Boundary Map

B = Flood Insurance Rate Map without elevation

C = Flood Insurance Rate Map with base flood elevations

D = Flood Insurance Rate Map with floodways

E = Flood Insurance Rate Map with floodways and V zones

OK...(√)

No...(N)

Other...(X) and explain

Revised September 2004

**APPENDIX B: COMMUNITIES WITH COASTAL VELOCITY (V ZONES)
PRESENT ON FIRM AND AN ORDINANCE COMPLIANT WITH 44 60.3(E)**

CRITERIA & MODEL ORDINANCE REFERENCE	E	FEDERAL REGULATION REFERENCE
<p>22 MODEL ORDINANCE 5.6 COASTAL HIGH HAZARD AREAS</p> <p>Located within areas of special flood hazard established in Section 3.2 are Coastal High Hazard Areas, designated as Zones V1-30, VE and/or V. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting all provisions in this ordinance, the following provisions shall also apply:</p> <p>1) All new construction and substantial improvements in Zones V1-30 and VE (V if base flood elevation data is available) on the community's FIRM shall be elevated on pilings and columns so that:</p> <p>i) The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated one foot or more above the base flood level; and</p> <p>ii) The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval).</p> <p>A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of Section 5.6(1)(i) and (ii).</p> <p>2) Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in Zones V1-30, VE, and V on the community's FIRM and whether or not such structures contain a basement. The (<i>Local Administrator</i>) shall maintain a record of all such information.</p> <p>3) All new construction within Zones V1-30, VE, and V on the community's FIRM shall be located landward of the reach of mean high tide.</p> <p>4) Provide that all new construction and substantial improvements within Zones V1-30, VE, and V on the community's FIRM have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. For the purposes of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no</p>		<p><i>OPTIONAL PROVISION</i></p> <p>44 CFR 60.3(e)(4) ✓ 13.12.500(B)(7)</p> <p>44 CFR 60.3(e)(4)(i) ✓ 13.12.500(B)(7)b</p> <p>44 CFR 60.3(e)(4)(ii) ✓ 13.12.500(B)(7)c</p> <p>✓ 13.12.500(B)(7)a</p> <p>44CFR 60.3(e)(2) ✓ 13.12.700(D)(7)(c)</p> <p>44 CFR 60.3(e)(3) ✓ 13.12.500(B)(7)e</p> <p>44 CFR 60.3(e)(5) ✓ 13.12.500(B)(7)d – no obstruction! Good higher standard</p> <p>44 CFR 60.3(e)(5)(i)</p>

A = Flood Hazard Boundary Map

B = Flood Insurance Rate Map without elevation

C = Flood Insurance Rate Map with base flood elevations

D = Flood Insurance Rate Map with floodways

E = Flood Insurance Rate Map with floodways and V zones

OK...(✓) No...(N) Other...(X) and explain

Revised September 2004

<p>more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or State codes) may be permitted only if a registered professional engineer or architect certifies that the design proposed meets the following conditions:</p> <p>i) Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and</p> <p>ii) The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval).</p> <p>If breakaway walls are utilized, such enclosed space shall be useable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.</p> <p>5) Prohibit the use of fill for structural support of buildings within Zones V1-30, VE, and V on the community's FIRM.</p> <p>6) Prohibit man-made alteration of sand dunes within Zones V1-30, VE, and V on the community's FIRM which would increase potential flood damage.</p> <p>7) All manufactured homes to be placed or substantially improved within Zones V1-30, V, and VE on the community's FIRM on sites:</p> <p>i) Outside of a manufactured home park or subdivision,</p> <p>ii) In a new manufactured home park or subdivision,</p> <p>iii) In an expansion to an existing manufactured home park or subdivision, or</p> <p>iv) In an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood;</p> <p>shall meet the standards of paragraphs 5.6(1) through (6) of this section and manufactured homes placed or substantially improved on other sites in an existing manufactured home park or subdivision within Zones V1-30, V, and VE on the FIRM shall meet the requirements of Section 5.2-3(2).</p> <p>8) Recreational vehicles placed on sites within Zones V1-30, V, and VE on the community's FIRM either:</p> <p>i) Be on the site for fewer than 180 consecutive days, or</p> <p>ii) Be fully licensed and ready for highway use, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions; or</p> <p>iii) Meet the requirements of Section 4.1-1(<i>development permit Required</i>) and paragraphs 5.6(1) through (6) of this section.</p>	<p>44 CFR 60.3(e)(6) ✓ 13.12.500(B)(7)f</p> <p>44 CFR 60.3(e)(7) ✓ 13.12.400(E)</p> <p>44 CFR 60.3(e)(8)(i-iv) ✓ 13.12.500(D) – requires MHs meet all standards for regular structures.</p> <p>44 CFR 60.3(e)(9)(i-iii) ✓ 13.12.500(E)</p>
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OK...(✓) No...(N) Other...(X) and explain

Revised September 2004

DEFINITIONS

CRITERIA & MODEL ORDINANCE REFERENCE COMMUNITY: _____		INCLUDED IN ORD:		FEDERAL REGULATION REFERENCE <i>44 CFR 59.1</i>
		Yes	No	
23	<p>APPEAL: a request for a review of the interpretation of any provision of this ordinance or a request for a variance.</p> <p>AREA OF SHALLOW FLOODING: designated as AO, or AH Zone on the Flood Insurance Rate Map (FIRM). AO zones have base flood depths that range from one to three feet above the natural ground; 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; AH indicates ponding, and is shown with standard base flood elevations.</p> <p>AREA OF SPECIAL FLOOD HAZARD: is the land in the flood plain within a community subject to a one percent or greater chance of flooding in any given year. Designation on maps always includes the letters A or V.</p> <p>BASE FLOOD: the flood having a 1% chance of being equaled or exceeded in any given year (also referred to as the "100-year flood"). Designated on Flood Insurance Rate Maps by the letters A or V.</p> <p>* BASEMENT: means any area of the building having its floor sub-grade (below ground level) on all sides.</p> <p>BREAKAWAY WALL: means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.</p> <p>COASTAL HIGH HAZARD AREA: means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. The area is designated on the FIRM as Zone V1-30, VE or V.</p> <p>CRITICAL FACILITY: means a facility for which even a slight chance of flooding might be too great. Critical facilities include (but are not limited to) schools, nursing homes, hospitals, police, fire and emergency response installations, and installations which produce, use, or store hazardous materials or hazardous waste.</p> <p>* DEVELOPMENT: means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials located within the area of special flood hazard.</p> <p>** ELEVATION CERTIFICATE: means the official form (FEMA Form 086-0-33) used to track development, provide elevation information necessary to ensure compliance with community floodplain management ordinances, and determine the proper</p>	✓		DEFINITIONS IN 13.12.105
		✓		<i>Required</i>
		✓		<i>Required</i>
		✓		<i>Optional insurance provision - Recommended [UD]</i>

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E = Flood Insurance Rate Map with floodways and V zones

OK... (✓)

No... (N)

Other... (X) and explain

<p>insurance premium rate with Section B completed by Community Officials.</p> <p>ELEVATED BUILDING: means for insurance purposes, a non-basement building that has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.</p> <p>EXISTING MANUFACTURED HOME PARK OR SUBDIVISION: means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the adopted floodplain management regulations.</p> <p>EXPANSION TO AN EXISTING MANUFACTURED HOME PARK OR SUBDIVISION: means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).</p> <p>FLOOD or FLOODING: means a general and temporary condition of partial or complete inundation of normally dry land areas from:</p> <ol style="list-style-type: none"> 1) The overflow of inland or tidal waters and/or 2) The unusual and rapid accumulation or runoff of surface waters from any source. <p>FLOOD INSURANCE RATE MAP (FIRM): means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.</p> <p>FLOOD INSURANCE STUDY (FIS): means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Insurance Rate Maps, and the water surface elevation of the base flood.</p> <p>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.</p> <p>** INCREASED COST OF COMPLIANCE: A flood insurance claim payment up to \$30,000 directly to a property owner for the cost to comply with floodplain management regulations after a direct physical loss caused by a flood. Eligibility for an ICC claim can be through a single instance of "substantial damage" or as a result of a "cumulative substantial damage." (more information can be found in FEMA ICC Manual 301)</p> <p>* 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</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>		<p><i>Optional insurance provision</i></p> <p><i>Not Recommended [UD]</i></p> <p><i>Required</i></p>
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OK...(✓) No...(N) Other...(X) and explain

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<p>area, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance found at Section 5.2-1(2), (i.e. provided there are adequate flood ventilation openings).</p> <p>MANUFACTURED HOME: means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "manufactured home" does not include a "recreational vehicle."</p> <p>MANUFACTURED HOME PARK OR SUBDIVISION: means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.</p> <p>NEW CONSTRUCTION: means structures for which the "start of construction" commenced on or after the effective date of this ordinance.</p> <p>NEW MANUFACTURED HOME PARK OR SUBDIVISION: means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of adopted floodplain management regulations.</p> <p>RECREATIONAL VEHICLE: means a vehicle,</p> <ol style="list-style-type: none"> 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. <p>START OF CONSTRUCTION: includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>X</p>		<p>Ordinance missing 180 day requirement per 44 CFR 59.1. Shoreline's definition also lacks many of the specifics from the CFR definition. Recommend adopting this definition verbatim.</p> <p><i>Recommended [UD] – However, need to discuss how this may impact vesting language and development.</i></p>
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OK...(✓) No...(N) Other...(X) and explain

Revised September 2004

<p>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.</p> <p>STRUCTURE: a walled and roofed building, including a gas or liquid storage tank that is principally above ground.</p> <p>* 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 percent of the market value of the structure before the damage occurred.</p> <p>* SUBSTANTIAL IMPROVEMENT: means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:</p> <ol style="list-style-type: none"> 1) Before the improvement or repair is started; or 2) If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition “substantial improvement” is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. <p>The term can exclude:</p> <ol style="list-style-type: none"> 1) Any project for improvement of a structure to correct pre-cited existing violations of state or local health, sanitary, or safety code specifications which have been previously identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or 2) Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places. <p>VARIANCE: means a grant of relief from the requirements of this ordinance that permits construction in a manner that would otherwise be prohibited by this ordinance.</p> <p>WATER DEPENDENT: means a structure for commerce or industry that cannot exist in any other location and is dependent on the water by reason of the intrinsic nature of its operations.</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>		<p><i>Required</i></p> <p><i>Required</i></p>
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ORDINANCE NO. 797**AN ORDINANCE OF THE CITY OF SHORELINE, WASHINGTON,
AMENDING THE CHAPTER 13.12 FLOODPLAIN MANAGEMENT OF
THE SHORELINE MUNICIPAL CODE.**

WHEREAS, the City of Shoreline is a participating community in the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program; and

WHEREAS, on May 19, 2017, FEMA conducted a Community Assistance Contact (CAC) to ensure the City was properly regulating its floodplain management and development; and

WHEREAS, part of the CAC assessment was a review of the City's Floodplain Management regulations set forth in Chapter 13.12 of the Shoreline Municipal Code; and

WHEREAS, FEMA determined that SMC Chapter 13.12 required nominal updates to ensure the City's continued participation in the National Flood Insurance Program and protect the public's health, safety, and welfare; and

WHEREAS, SMC Chapter 13.12 needs to be amendment to reflect FEMA's determination and allow for continued participation in the National Flood Insurance Program;

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF SHORELINE, WASHINGTON, DO ORDAIN AS FOLLOWS:

Section 1. Amendment – Chapter 13.12 Floodplain Management. Chapter 13.12 Floodplain Management is amendment as set forth in Exhibit A to this Ordinance.

Section 2. Corrections by City Clerk or Code Reviser. Upon approval of the City Attorney, the City Clerk and/or the Code Reviser are authorized to make necessary corrections to this ordinance, including the corrections of scrivener or clerical errors; references to other local, state, or federal laws, codes, rules, or regulations; or ordinance numbering and section/subsection numbering and references.

Section 3. Severability. Should any section, subsection, paragraph, sentence, clause, or phrase of this ordinance or its application to any person or situation be declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of this ordinance or its application to any person or situation.

Section 4. Publication and Effective Date. A summary of this Ordinance consisting of the title shall be published in the official newspaper. This Ordinance shall take effect five days after publication.

PASSED BY THE CITY COUNCIL ON OCTOBER 2, 2017

Mayor Christopher Roberts

ATTEST:

APPROVED AS TO FORM:

Jessica Simulcik Smith
City Clerk

Margaret King
City Attorney

Date of Publication: _____, 2017

Effective Date: _____, 2017

Chapter 13.12

FLOODPLAIN MANAGEMENT

13.12.105 Definitions.

Unless specifically defined below, terms 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 its most reasonable application. The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

“Adversely affect” or “adverse effect” means an effect that is a direct or indirect result of the proposed action or its interrelated or interdependent actions and the effects are not discountable, insignificant or beneficial. A discountable effect is extremely unlikely to occur. An insignificant effect relates to the size of the impact and should never reach the scale where a take occurs. Based on best judgment, a person would not: (A) be able to meaningfully measure, detect, or evaluate an insignificant effect; or (B) expect a discountable effect to occur.

“Appurtenant structure” means a structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure.

“Base flood” means the flood having a one percent chance of being equaled or exceeded in any given year (also referred to as the “100-year flood”). The area subject to the base flood is the special flood hazard area designated on flood insurance rate maps as Zone “A” or “V” including AE, AO, AH, A1-99 and VE.

“Base flood elevation” means the elevation of the base flood above the datum of the effective flood insurance rate map (FIRM).

“Basement” means any area of the structure having its floor subgrade (below ground level) on all sides.

“Beneficial effect” means a contemporaneous positive effect without any adverse effect. In the event that the overall effect of the proposed action is beneficial, but is also likely to cause some adverse effect, then the proposed action is considered to result in an adverse effect.

“Channel migration zone” means the area within the lateral extent of likely stream channel movement due to a destabilization and erosion, rapid stream incision, aggradations, avulsions, and shifts in location of stream channels.

“Critical facility” means a facility necessary to protect the public health, safety, and welfare during a flood. Critical facilities include, but are not limited to, schools, nursing homes, hospitals, police, fire and emergency operations installations, water and wastewater treatment plants, electric power stations, and installations which produce, use, or store hazardous materials or hazardous waste (other than consumer products containing hazardous substances or hazardous waste intended for household use).

“Development” means any manmade change to improved or unimproved real estate in the regulatory floodplain, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, storage of equipment or materials, subdivision of land, removal of more than five percent of the native vegetation on the property, or alteration of natural site characteristics.

“Director” means the public works director or designee.

“Dry floodproofing” means any combination of structural and nonstructural measures that prevent floodwaters from entering a structure.

“Elevation certificate” means the most current version of the FEMA National Flood Insurance Program form that documents the elevation of a structure within a Special Flood Hazard Area relative to the ground level so as to ensure compliance with this chapter, to determine the flood insurance premium rate, and/or to support a map amendment or revision. ~~means the official form (FEMA Form 81-31) used to provide elevation information~~

~~necessary to ensure compliance with provisions of this chapter and determine the proper flood insurance premium rate. means the official form (FEMA Form 81-31) used to provide elevation information necessary to ensure compliance with provisions of this chapter and determine the proper flood insurance premium rate.~~

“ESA” means the Endangered Species Act.

“Federal Emergency Management Agency (FEMA)” means the agency responsible for administering the National Flood Insurance Program.

“FEMA” means Federal Emergency Management Agency.

“FIRM” means flood insurance rate map.

“Fish and wildlife habitat conservation area” means lands needed to maintain species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. These areas are designated in SMC 20.80.260 through 20.80.300.

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

- A. The overflow of inland or tidal waters; and/or
- B. The unusual and rapid accumulation of runoff of surface waters from any source.

“Flood insurance rate map (FIRM)” means the official map on which the Federal Emergency Management Agency has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

“Flood insurance study” means the official report provided by the Federal Emergency Management Agency that includes flood profiles, the flood insurance rate map, and the water surface elevation of the base flood.

“Flood protection elevation (FPE)” means the elevation above the datum of the effective FIRM to which new and substantially improved structures must be protected from flood damage.

“Floodway” means the channel of a stream 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 at any point.

“Functionally dependent use” means a use that must be located or carried out close to water, for example docking or port facilities necessary for the unloading of cargo or passengers, or shipbuilding and ship repair.

“Historic structure” means a structure that:

- A. Is listed on the National Register of Historic Places, the Washington Heritage Register, or the Washington Heritage Barn Register; or
- B. Has been certified to contribute to the historical significance of a registered historic district.

“Hyporheic zone” means a saturated layer of rock or sediment beneath and/or adjacent to a stream channel that contains some proportion of channel water or that has been altered by channel water infiltration.

“Impervious surface” means a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled macadam or other surfaces which similarly impede the natural infiltration of stormwater.

“Lowest floor” means the lowest floor of the lowest enclosed area (including basement or crawl space) of a structure. An unfinished or flood-resistant enclosure, used solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a structure’s lowest floor; provided, that such enclosure is compliant with SMC 13.12.500(B)(6), so that there are adequate openings to allow floodwaters into the area.

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

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

“Market Value” means either the true and fair value of the property as established by the county assessor or by a Washington State certified or licensed appraiser.

“Native vegetation” means plant species that are indigenous to the community’s area and that reasonably could be expected to naturally occur on the site.

“Natural floodplain functions” means the contribution that a floodplain makes to support habitat, including but not limited to providing flood storage and conveyance, reducing flood velocities, reducing sedimentation, filtering nutrients and impurities from runoff, processing organic wastes, moderating temperature fluctuations, and providing breeding and feeding grounds, shelter, and refugia for aquatic or riparian species.

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

“NMFS” means National Marine Fisheries Service.

“Protected area” means the lands that lie within the boundaries of the floodway, the riparian habitat zone, and the channel migration area. Because of the impact that development can have on flood heights and velocities and habitat, special rules apply in the protected area.

“Recreational vehicle” means a vehicle:

- A. Built on a single chassis; and
- B. Four hundred square feet or less when measured at the largest horizontal projection; and
- C. Designed to be self-propelled or permanently towable by an automobile or light duty truck; and
- D. Designed primarily for use as temporary living quarters for recreational, camping, travel, or seasonal use, not as a permanent dwelling.

“Regulatory floodplain” means the area of the special flood hazard area plus the protected area, as defined in SMC 13.12.300. The term also includes newly designated areas that are delineated pursuant to SMC 13.12.300(E).

“Riparian” means of, adjacent to, or living on the bank of a river, lake, pond, ocean, sound, or other water body.

“Riparian habitat zone” means the water body and adjacent land areas that are likely to support aquatic and riparian habitat as detailed in SMC 13.12.300(D)(2).

“Special flood hazard area (SFHA)” means the land subject to inundation by the base flood. Special flood hazard areas are designated on flood insurance rate maps with the letter “A” or “V” including AE, AO, AH, A1-99 and VE. The special flood hazard area is also referred to as the area of special flood hazard or SFHA.

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

“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 percent of the market value of the structure before the damage occurred.

“Substantial damage” also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

“Substantial improvement” means any repair, reconstruction, rehabilitation, addition, replacement, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:

- A. Before the “start of construction” of the improvement; or
- B. Before damage occurred, if the structure has been damaged or is being restored.

Substantial improvement occurs with the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not the alteration affects external dimensions.

Substantial improvement includes structures that have incurred “substantial damage,” regardless of the actual repair work performed.

Substantial improvement does not include 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.

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

“Water typing” means a system for classifying water bodies according to their size and fish habitat characteristics. The Washington Department of Natural Resources’ forest practices water typing classification system is hereby adopted by reference. The system defines four water types:

- A. Type “S” – Shoreline. Streams that are designated “shorelines of the state,” including marine shorelines.
- B. Type “F” – Fish. Streams that are known to be used by fish or meet the physical criteria to be potentially used by fish.
- C. Type “Np” – Non-fish perennial streams.
- D. Type “Ns” – Non-fish seasonal streams.

“Waters of the state” includes lakes, rivers, ponds, streams, inland waters, underground water, salt waters, estuaries, tidal flats, beaches, and lands adjoining the seacoast of the state, sewers, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

“Zone” means one or more areas delineated on the FIRM. The following zones may be used on the adopted FIRM. The special flood hazard area is comprised of the A and V zones.

A	SFHA where no base flood elevation is provided.
A#	Numbered A Zones (e.g., A7 or A14), SFHA with a base flood elevation.
AE	SFHA with a base flood elevation.
AO	SFHA subject to inundation by shallow flooding usually resulting from sheet flow on sloping terrain, with average depths between one and three feet. Average flood depths are shown.
AH	SFHA subject to inundation by shallow flooding (usually pond areas) with average depths between one and three feet. Base flood elevations are shown.
B	The area between the SFHA and the 500-year flood of the primary source of flooding. It may also be an area with a local, shallow flooding problem or an area protected by a levee.
C	An area of minimal flood hazard, as above the 500-year flood level of the primary source of flooding. B and C zones may have flooding that does not meet the criteria to be mapped as a special flood hazard area, especially pond and local drainage problems.
D	Area of undetermined but possible flood hazard.
V	The SFHA subject to coastal high hazard flooding including waves of three feet or greater in height. There are three types of V zones: V, V#, and VE, and they correspond to the A zone designations.
X	The area outside the mapped SFHA.
X – Shaded	The same as a Zone B, above.

13.12.300 Regulatory data.

A. Regulatory Floodplain. The regulatory floodplain is comprised of the special flood hazard area and all protected areas within the jurisdiction of city of Shoreline. The term also includes areas delineated pursuant to subsection E of this section.

B. Special Flood Hazard Area. The special flood hazard area (SFHA) is the area subject to flooding by the base flood and subject to the provisions of this chapter. It is identified by the Federal Emergency Management Agency in a scientific and engineering report entitled “Flood Insurance Study for King County and Incorporated Areas,” dated ~~November 6, 2010~~ April 19, 2005 ~~Flood Insurance Study Number 53033CV001B~~, and any revisions thereto, with an accompanying flood insurance rate map (FIRM), and any revisions thereto, hereby adopted by reference and declared to be a part of this chapter. The flood insurance study and the FIRM are on file at 17500 Midvale Avenue N, Shoreline, WA 98133.

C. Flood Hazard Data.

1. The base flood elevation for the SFHAs of the city of Shoreline shall be as delineated on the 100-year flood profiles in the flood insurance study for King County.
2. The base flood elevation for each SFHA delineated as a “Zone AH” or “Zone AO” shall be that elevation (or depth) delineated on the flood insurance rate map. Where base flood depths are not available in Zone AO, the base flood elevation shall be considered two feet above the highest grade adjacent to the structure.
3. The base flood elevation for all other SFHAs shall be as defined in subsections (C)(6) and (E)(4) of this section.
4. The flood protection elevation (FPE) shall be the base flood elevation plus one foot.
5. The floodway shall be as delineated on the flood insurance rate map or in accordance with subsections (C)(6) and (E)(4) of this section.
6. Where base flood elevation and floodway data have not been provided in special flood hazard areas, the director shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other source.
7. Where elevation data are not available either through the flood insurance study, FIRM, or from another authoritative source, applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness includes use of historical data, high water marks, photographs of past flooding, etc. Failure to elevate at least two feet above the highest adjacent grade in these zones may result in higher insurance rates.

D. Protected Area. The protected area is comprised of those lands that lie within the boundaries of the floodway, the riparian habitat zone, and the channel migration area.

1. In riverine areas, where a floodway has not been designated in accordance with subsection (C)(5), (C)(6), or (E)(5) of this section, the protected area is comprised of those lands that lie within the boundaries of the riparian habitat zone, the channel migration area, and the SFHA.
2. The riparian habitat zone includes those watercourses within the SFHA and adjacent land areas that are likely to support aquatic and riparian habitat. The size and location of the riparian habitat zone is dependent on the type of water body. The riparian habitat zone includes the water body and adjacent lands, measured perpendicularly from ordinary high water on both sides of the water body:
 - a. Type S – Streams that are designated “shoreslines of the state”: 250 feet.

- b. Type F – Fish-bearing streams greater than five feet wide and marine shorelines: 200 feet.
- c. Type F – Streams less than five feet wide and lakes: 150 feet.
- d. Type N – Non-salmonid-bearing perennial and seasonal streams with unstable slopes: 225 feet.
- e. All other Type N – Non-salmonid-bearing perennial and seasonal streams: 150 feet.

3. Channel Migration Area.

- a. The channel migration area shall be the channel migration zone plus 50 feet.
- b. Where a channel migration zone has not yet been mapped, the provisions of subsection (E)(6) of this section shall apply at the time of permit application.
- c. Where more than one channel migration zone has been delineated, the director shall use the delineation that has been adopted for other local regulatory purposes.

E. New Regulatory Data.

1. All requests to revise or change the flood hazard data, including requests for a letter of map revision and a conditional letter of map revision, shall be reviewed by the director.
 - a. The director shall not sign the community acknowledgment form for any requests based on filling or other development, unless the applicant for the letter documents that such filling or development complies with this chapter.
 - b. The director shall not approve a request to revise or change a floodway delineation until FEMA has issued a conditional letter of map revision that approves the change.
2. The director shall use the most restrictive data available for the channel migration zone, floodways, future conditions, and riparian habitat areas.
3. If an applicant disagrees with the regulatory data prescribed by this chapter, he/she may submit a detailed technical study needed to replace existing data with better data in accordance with FEMA mapping guidelines or Regional Guidance for Hydrologic and Hydraulic Studies in Support of the Model Ordinance for Floodplain Management and the Endangered Species Act, 2010, FEMA Region 10. If the data in question are shown on the published FIRM, the submittal must also include a request to FEMA for a conditional letter of map revision.
4. Where base flood elevation data are not available in accordance with subsection C of this section, applicants for approval of new subdivisions and other proposed developments, including proposals for manufactured home parks and subdivisions greater than 50 lots or five acres, whichever is smaller, shall include such data with their permit applications.
5. Where floodway delineation is not available in accordance with subsection C of this section, the floodway will be designated to be one-half the distance of the mapped 100-year floodplain at any point, and the prohibition on floodway development applies, unless a floodway study indicates otherwise. This provision applies to any floodplain development permit, including those for substantial improvements.
6. Where channel migration zone data are not available in accordance with subsection (D)(3) of this section, the permit applicant shall either:
 - a. Designate the entire SFHA as the channel migration zone; or

b. Identify the channel migration area in accordance with Regional Guidance for Hydrologic and Hydraulic Studies in Support of the Model Ordinance for Floodplain Management and the Endangered Species Act, 2010, FEMA Region 10.

7. All new hydrologic and hydraulic flood studies conducted pursuant to this section shall consider future conditions and the cumulative effects from anticipated future land use changes in accordance with Regional Guidance for Hydrologic and Hydraulic Studies in Support of the Model Ordinance for Floodplain Management and the Endangered Species Act, 2010, FEMA Region 10.