

**WHATCOM COUNTY COUNCIL
SURFACE WATER
WORK SESSION**

July 18, 2017

**WHATCOM COUNTY
PUBLIC WORKS DEPARTMENT**

JON HUTCHINGS
Director



NATURAL RESOURCES

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MEMORANDUM

TO: The Honorable Jack Louws, Whatcom County Executive, and
Honorable Members of the Whatcom County Council

THROUGH: Jon Hutchings, Director

FROM: Gary S. Stoyka, Natural Resources Program Manager

DATE: July 10, 2017

RE: July 18, 2017 Council Surface Water Work Session

Please refer to the proposed agenda below for the next Surface Water Work Session. Additional supporting documents may be distributed at or before the meeting.

AGENDA

Date:	Tuesday, July 18, 2017		
Time:	10:30 a.m. to 12:30 p.m.		
Place:	Civic Center Garden Level Conference Room		
Time	Topic	Council Action Requested	Background Information Attached
10:30 AM – 10:45 AM	Water Planning Update	Discussion	None
10:45 AM – 11:45 AM	Flood Code Update	Discussion	Proposed Title 17.04, Staff Report
11:45 AM – 12:30 PM	Lake Whatcom Comprehensive Stormwater Plan Update	Discussion	None

If you have questions, please feel free to call me at (360) 778-6218.

cc: Mike McFarlane Joe Rutan Paula Harris John Wolpers Mike Donahue
Beth Bushaw Jeff Hegedus John Thompson Kraig Olason Erika Douglas
Tyler Schroeder Josh Fleischmann Karen Frakes Jennifer Schneider Jill Nixon
Sue Blake Kirk Christensen Dana Brown-Davis Atina Casas Cathy Craver
George Boggs Roland Middleton Lonni Cummings Kristi Felbinger Mark Personius
Ryan Ericson

Title 17

FLOOD DAMAGE PREVENTION

Chapters:

- 17.04 General Provisions
- 17.08 Definitions
- [17.10 Regulatory Data](#)
- 17.12 Administration
- 17.16 Flood Hazard Reduction [Standards](#)
- ~~17.20 Repealed~~
- 17.24 Unauthorized Use of Motorized Vehicles Upon Flood Control Structures

Chapter 17.04

GENERAL PROVISIONS

Sections:

- 17.04.010 Findings of fact.
- 17.04.020 Statement of purpose and liability disclaimer.
- 17.04.030 Methods of reducing flood losses.
- 17.04.040 Application of title.
- ~~17.04.050 Basis for establishing areas of special flood hazard.~~
- 17.04.060 Abrogation and greater restrictions.
- 17.04.070 Interpretation.
- 17.04.080 Compliance required.
- 17.04.090 Penalty for noncompliance.
- 17.04.100 Severability.

17.04.010 Findings of fact.

The findings of fact are the following:

A. The flood hazard areas of Whatcom County 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.

~~B. Without taking appropriate care and precautions, development in floodplains and watersheds may increase flood heights, frequencies, and velocities, and may result in a greater threat to humans, damage to property, destruction of natural floodplain functions, and adverse impacts to water quantity, quality, and habitat. 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. (Ord. 96-050 Exh A; Ord. 87-25 (part)).~~

17.04.020 Statement of purpose and liability disclaimer.

This title is enacted as an exercise of the police power of the county for the benefit of the public at large. It is not intended to create a special relationship with any individual, or individuals, nor to identify and protect any particular class of persons. The purpose of this title is to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas in a manner that does not adversely affect endangered species or their habitats. The degree of ~~property and habitat flood~~ protection required by this title is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on occasion. Flood heights may be increased by manmade or natural causes. This title does not imply that land outside of the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This title shall not create liability on the part of Whatcom County, any officer or employee thereof, or the Federal Insurance Administration, for any ~~flood~~ damages to property or habitat that result from reliance on this title or any administrative decision lawfully made thereunder. Nor shall the county or any officer, agent, or employee thereof incur or be held as assuming any liability by reason or in consequence of any permission, certificate of inspection, inspection or approval authorized herein, or issued or given as herein provided, or by reasons or consequence of any things done or acts performed pursuant to the provisions of this title. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.04.030 Methods of reducing flood losses.

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

A. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;

- B. Requiring that uses vulnerable to floods, including facilities which serve such uses, shall be protected against flood damage at the time of initial construction;
- C. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
- D. Controlling filling, grading, dredging, and other development which may increase flood damage; and
- E. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.04.040 Application of title.

This title shall apply to all Special Flood Hazard Areas within the jurisdiction of Whatcom County as defined in Section 17.08. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

~~17.04.050 Basis for establishing areas of special flood hazard.~~

~~The areas of special flood hazard identified by the Federal Insurance Administration are contained in a scientific and engineering report entitled "The Flood Insurance Study for the County of Whatcom, Washington" (effective date September 30, 1977). The accompanying Flood Insurance Rate Maps, dated September 30, 1977, and September 28, 1990, including accompanying reports and any subsequent amendments made by the Federal Emergency Management Agency, are adopted by reference and declared to be a part of this title. The flood insurance study is on file at the department of public works. (Ord. 96-050 Exh A; Ord. 90-94; Ord. 87-25 (part)).~~

Comment [DMD1]: Moved to new section 17.10

17.04.060 Abrogation and greater restrictions.

This title is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this title and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.04.070 Interpretation.

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

- A. Considered as minimum requirements;
- B. Liberally construed in favor of the governing body; and
- C. Deemed neither to limit nor repeal any other powers granted under state statutes. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.04.080 Compliance required.

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this title and other applicable regulations. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.04.090 Penalty for noncompliance.

Any person, firm or corporation violating any of the provisions of this title shall be subject to enforcement actions pursuant to WCC 16.16.285, ~~deemed guilty of a misdemeanor and each day during which such violation is continued or committed shall constitute a separate offense, and upon conviction thereof, shall be punished by a fine of not more than \$500.00 or by imprisonment in the county jail for a period not exceeding 90 days, or by both such fine and imprisonment. Nothing contained herein shall prevent Whatcom County from taking such other lawful action as is necessary to prevent or remedy any violation.~~ (Ord. 96-050 Exh A; Ord. 87-25 (part)).

Comment [PC2]: Revised language makes consistent with how we do enforcement for all permits – through PDS

17.04.100 Severability.

The provisions and sections of this ordinance shall be deemed separable and the invalidity of any portion of this ordinance shall not affect the validity of the remainder.

Comment [PC3]: This section required by FEMA

Chapter 17.08

DEFINITIONS

Sections:

- 17.08.010 Generally.
- [17.08.013 Accessory Structure.](#)
- 17.08.015 Administrator.
- 17.08.020 Appeal.
- 17.08.030 Area of shallow flooding.
- 17.08.040 Area of special flood hazard.
- 17.08.050 Base flood.
- [17.08.051 Base flood elevation.](#)
- [17.08.053 Basement.](#)
- 17.08.055 Breakaway wall.
- 17.08.057 Coastal high hazard area.
- [17.08.058 Critical facility.](#)
- 17.08.060 Development.
- [17.08.062 Dry floodproofing.](#)
- [17.08.064 Elevation certificate.](#)
- [17.08.066 FEMA.](#)
- 17.08.070 Flood or flooding.
- 17.08.080 Flood Insurance Rate Map (FIRM).
- 17.08.090 Flood insurance study.
- [17.08.092 Flood protection elevation.](#)
- 17.08.095 Floodway.
- [17.08.097 Historic structure.](#)
- 17.08.100 Lowest floor.
- 17.08.110 Manufactured home.
- 17.08.120 Manufactured home park or subdivision.
- 17.08.130 New construction.
- 17.08.140 Recreational vehicle.
- 17.08.160 Start of construction.
- 17.08.170 Structure.
- [17.08.178 Substantial damage.](#)
- 17.08.180 Substantial improvement.
- 17.08.190 Variance.
- [17.08.193 Watercourse.](#)
- [17.08.195 Wet floodproofing.](#)
- [17.08.200 Zone.](#)

17.08.010 Generally.

Unless specifically defined below, words or phrases used in this title shall be interpreted so as to give them the meaning they have in common usage or to give this title its most reasonable application. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

[17.08.013 Accessory Structure.](#)

["Accessory 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.](#)

17.08.015 Administrator.

Whenever the term "administrator" is used it means the director of public works or his designee. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.020 Appeal.

“Appeal” means a request for a review of the administrator’s interpretation of any provision of this title or a request for a variance. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.030 Area of shallow flooding.

“Area of shallow flooding” means a designated AO or AH Zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from one to three 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. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.040 Area of special flood hazard.

“Area of special flood hazard” means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. [Areas of special flood hazard are designated on Flood Insurance Rate Maps with the letters “A” or “V” including AE, AO, AH, A1-99 and VE. The area of special flood hazard is also referred to as the special flood hazard area or SFHA.](#) (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.050 Base flood.

“Base flood” means the flood having a one percent chance of being equalled or exceeded in any given year. Also referred to as “100-year flood.” Designation on maps always includes the letters A or V. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.051 Base Flood Elevation.

[“Base flood elevation” is the elevation of the base flood above the datum of the effective FIRM.](#)

17.08.053 Basement.

[“Basement” is any area of the structure having its floor sub-grade \(below ground level\) on all sides including a subgrade crawlspace.](#)

Comment [PC4]: Required by FEMA

17.08.055 Breakaway wall.

“Breakaway wall” means a wall that is not a part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damages to the elevated portion of the building or supporting foundation system. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.057 Coastal high hazard area.

“Coastal high hazard area” means the area subject to high velocity waters, including but not limited to, storm surge or tsunamis. The area is designated on the FIRM as Zone V1-V30, VE or V. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.058 Critical Facility.

[“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 \(other than consumer products containing hazardous substances or hazardous waste intended for household use\).](#)

Comment [DMD5]: Recommended by FEMA and previous FCZDAC

17.08.060 Development.

“Development” means any manmade 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, [storage of equipment or materials, subdivision of land, removal of substantial amounts \(>5%\) of vegetation, or alteration of natural site characteristics](#) located within the area of special flood hazard. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

Comment [DMD6]: Added to be consistent with BiOp

17.08.062 Dry Floodproofing.

"Dry floodproofing" means any combination of structural and non-structural measures that prevent flood waters from entering a structure.

17.08.064 Elevation Certificate.

"Elevation Certificate" means the official form from FEMA used to provide elevation information necessary to ensure compliance with provisions of this ordinance and determine the proper flood insurance premium rate.

Comment [PC7]: Required by FEMA

17.08.066 FEMA.

"FEMA" means the Federal Emergency Management Agency, the agency responsible for administering the National Flood Insurance Program.

17.08.070 Flood or flooding.

"Flood or flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters; and/or the unusual and rapid accumulation or runoff of surface waters from any source. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.080 Flood Insurance Rate Map (FIRM).

"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. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.090 Flood insurance study.

"Flood insurance study" means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Boundary Map, and the water surface elevation of the base flood. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.092 Flood Protection Elevation (FPE).

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

Comment [DMD8]: Recommended by FCZDAC previously and consistent with how we administer code so nothing is damaged below first floor

17.08.095 Floodway.

"Floodway" means the channel of a river or other watercourse or land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.097 Historic structure.

"Historic structure" means a structure that is:

A. Listed on the National Register of Historic Places, the Washington Heritage Register, or the Washington Heritage Barn Register; or

B. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as a historic district; or

C. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

17.08.100 Lowest floor.

"Lowest floor" means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access, or storage, in an area other than a basement area, is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this title found at WCC 17.16.080(2). (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.110 Manufactured home.

“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 connected to the required utilities. For floodplain management purposes the term “manufactured home” also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than ~~480~~120 consecutive days. For insurance purposes the term “manufactured home” does not include park trailers, travel trailers, and other similar vehicles. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

Comment [DMD9]: Consistent with Title 20

17.08.120 Manufactured home park or subdivision.

“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. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.130 New construction.

“New construction” means structures for which the start of construction commenced on or after the effective date of the ordinance codified in this title. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.140 Recreational vehicle.

“Recreational vehicle” is a vehicle which is:

- A. Built on a single chassis;
- B. Four hundred 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;
- D. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use. (Ord. 96-050 Exh A).

17.08.155 Special flood hazard area (SFHA).

See 17.08.040 “Area of special flood hazard.”

17.08.160 Start of construction.

“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 foundation 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. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.170 Structure.

“Structure” means a walled and roofed building including a gas or liquid storage tank that is principally above ground. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.178 Substantial damage.

“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.

Comment [PC10]: Required by FEMA

Comment [PC11]: Enables residents to have greater access to Increased Cost of Compliance coverage under flood insurance policy

17.08.180 Substantial improvement.

“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:

- A. Before the improvement or repair is started; or
- B. Before the damage occurred, if the structure has been damaged and is being restored.

For the purpose 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 does not, however, include either:

- C. 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 comply with existing state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions; or~~
- D. Any alteration of a ~~Historic S~~structure ~~per the definition in 17.08.097, listed on the National Register of Historic Places or a State Inventory of Historic Places. (Ord. 96-050 Exh A; Ord. 87-25 (part)).~~

17.08.190 Variance.

“Variance” means a grant of relief from the requirements of this title which permits construction in a manner that would otherwise be prohibited by this title. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.08.193 Watercourse.

“Watercourse” means only the channel and banks of an identifiable watercourse, and not the adjoining floodplain areas. The flood carrying capacity of a watercourse refers to the flood carrying capacity of the channel (except in the case of alluvial fans, where a channel is not typically defined).

17.08.195 Wet Floodproofing.

“Wet Floodproofing” means permanent or contingent measures applied to a structure and/or its contents that prevent or provide resistance to damage from flooding by using flood-resistant materials and by allowing water to enter and exit the structure.

17.08.200 Zone.

“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 areas of ponding) 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 ponding and local drainage problems.

– D: area of undetermined but possible flood hazard.

– V: the SFHA subject to coastal high hazard flooding including waves of 3 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.

– Shaded X: the same as Zone B, above.

Chapter 17.10

REGULATORY DATA

Sections:

17.10.010 Basis for establishing Special Flood Hazard Area.

17.10.020 Flood hazard data.

17.10.030 New regulatory data.

17.10.010. Basis for establishing Special Flood Hazard Area.

A. The areas of special flood hazard identified by the Federal Emergency Management Agency in a scientific and engineering report entitled "Flood Insurance Study for Whatcom County, Washington (All Jurisdictions)" dated November 16, 2007 and any revisions thereto, with an accompanying Flood Insurance Rate Map (FIRM) for "Whatcom County, Washington (All Jurisdictions)" dated January 16, 2004 and November 16, 2007 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 the department of public works.

BC. The administrator shall make interpretations where needed as to the exact location of the boundaries of the SFHA where there appears to be a conflict between the mapped SFHA boundary and actual field conditions, as determined by the base flood elevation and ground elevations. The applicant may appeal the administrator's interpretation of the location of the boundary in accordance with WCC 17.12.040.

C. The applicant may officially have a structure or property removed from the SFHA by obtaining a Letter of Map Amendment (LOMA) with FEMA. A LOMA establishes a structure or property's location in relation to the SFHA. LOMAs are usually issued because a property has been inadvertently mapped as being in the floodplain, but is actually on natural high ground above the Base Flood Elevation (BFE).

17.10.020. Flood hazard data.

A. The base flood elevation for the SFHAs of Whatcom County, Washington shall be as delineated on the 100-year flood profiles in the "Flood Insurance Study for Whatcom County, Washington (All Jurisdictions)."

B. 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 to be two feet above the highest grade adjacent to the structure.

C. The base flood elevation for all other SFHAs shall be as defined in Sections 17.10.020.F and 17.10.030.C.

D. The Flood Protection Elevation (FPE) shall be the base flood elevation plus one foot.

E. The floodway shall be as delineated on the Flood Insurance Rate Map or in accordance with Sections 17.10.020.F and 17.10.030.C.

F. Where base flood elevation and floodway data have not been provided in Special Flood Hazard Areas, the administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a Federal, State, local, or other source. In cases where the administrator is unable to obtain any base flood elevation the flood protection elevation shall be two feet above the highest adjacent grade.

17.10.030. New regulatory data.

A. 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 administrator.

Comment [DMD12]: Added to clarify regulatory process and requirements

Comment [PC13]: David referenced both 04 and 07 FIRMS

Comment [TB14]: Recommended by FCZDAC

Comment [PC15]: Recommended by FEMA and previously by FCZDAC and what we require to ensure no damage to subfloor materials; also will get more CRS credit

1. The administrator shall not sign the Community Acknowledgement Form for any requests based on filling or other development, unless the applicant for the letter documents that such filling or development is in compliance with this ordinance.

2. The administrator shall not approve a request to revise or change a floodway delineation until FEMA has issued a Conditional Letter of Map Revision (CLOMR) that approves the change.

B. If an applicant disagrees with the regulatory data prescribed by this ordinance, he/she may submit a detailed technical study needed to replace existing data with better data in accordance with FEMA mapping guidelines. 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.

C. Where base flood elevation or floodway delineation is not available in accordance with WCC 17.10.020, applicants for approval of new subdivisions and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, shall include such data with their permit applications, unless waived by the administrator. This provision does not apply to applications for permits for small projects on large lots, such as constructing a single family home.

Chapter 17.12

ADMINISTRATION

Sections:

- 17.12.010 Establishment of floodplain development permit.
- 17.12.012 Requirements for floodplain development permit application within a SFHA.
- 17.12.020 Administrative department – Designated.
- 17.12.030 Administrative department – Duties and responsibilities.
- 17.12.040 Variances – Appeals board established – Factors taken into account – Maintenance of records.
- 17.12.050 Variances – Conditions for issuance.

17.12.010 Establishment of floodplain development permit.

A floodplain development permit shall be obtained before construction or development begins within any area of special flood hazard established in WCC 17.10.01004.050. 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 Section 17.08.060. In situations where another County permit is required for development, the floodplain development permit may be issued in the form of conditions within the other County permit.

17.12.012 Requirements for development permit application within a SFHA.

–Application for a development permit within a SFHA shall be made through the development application process administered by the department of Planning and Development Services or on forms furnished by the department of public works if other local permits are not required. and may include, but not be limited to:

A. –One or more site plans in duplicate drawn to scale showing:

1. –The nature, location, dimensions, and elevations of the area property;
2. Names and locations of all water bodies, waterways, and drainage facilities within 200 feet of the site;
3. E in question, existing and/or proposed structures, fill, pavement and other impervious surfaces, and sites for storage of materials;
4. Existing and proposed drainage facilities including but not limited to swales, storm sewers, overland flow paths and detention facilities;
5. The elevation of the 100-year floods, where the data are available, and the location of the foregoing. Specifically, the following information is required
6. Existing and proposed contours at intervals sufficient to accurately determine the extent of proposed changes if the proposed project involves grading, excavation or filling.
7. Existing vegetation and proposed vegetation removal and revegetation.

B. If the proposed project includes a new structure, substantial improvement, or repairs to a substantially damaged structure that will be elevated, the application shall include the Flood Protection Elevation for the building site and the proposed elevations of the following:

1. The top of lowest floor (including basement, crawlspace, or enclosure floor)
2. The top of the next higher floor
3. The bottom of the lowest horizontal structural member (in V Zones only)
4. The top of the slab of an attached garage
5. The lowest elevation of machinery or equipment servicing the structure
6. The lowest adjacent (finished) grade next to structure
7. The highest adjacent (finished) grade next to structure
8. The lowest adjacent grade at the lowest elevation of a deck or stairs, including structural support

C. If the proposed project includes a new structure, substantial improvement, or repairs to a substantially damaged nonresidential structure that will be wet or dry floodproofed, the application shall include the FPE for the building site and the elevation in relation to the datum of the effective FIRM to which the structure will

Comment [PC16]: Clarifying what we need for the applicant

be floodproofed and a certification by a registered professional engineer or licensed architect that the floodproofing methods meet the floodproofing criteria in Section 17.16.090 or 17.16.110.

D. The application shall include a description of the extent to which any watercourse will be altered or relocated as a result of proposed development. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

E. The applicant shall submit a finished construction Elevation Certificate (EC) completed and certified by a licensed professional surveyor prior to occupancy.

~~F. Compliance with FEMA's National Flood Insurance Program (NFIP), including the protection standards for critical habitats for listed species, shall be demonstrated through submittal of a habitat assessment, and if necessary, a mitigation plan prepared by a qualified professional, done in accordance with the FEMA Regional Guidance for the Puget Sound Basin. The plan shall identify any federally listed species and associated habitats, and demonstrate that no harm will occur to such species or habitats as a result of development within frequently flooded areas.~~

17.12.020 Administrative department – Designated.

The department of public works is appointed to administer and implement this title by granting or denying floodplain development permit applications in accordance with its provisions. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.12.030 Administrative department – Duties and responsibilities.

The duties of the department of public works shall include, but not be limited to:

A. Permit Review. The department of public works shall:

1. Review all floodplain development permit applications to determine that the permit requirements of this title have been satisfied;
2. Review all floodplain development permits applications to determine that all necessary permits have been obtained from those federal, state or local governmental agencies from which prior approval is required;
3. Review all floodplain development permits applications to determine if the proposed development adversely affects the flood-carrying capacity of the area of special flood hazard, and prohibit those developments that are determined to adversely affect the capacity. For purposes of this chapter section, "adversely affects flood-carrying capacity" means 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.

~~4. Review and approve all Elevation Certificates to ensure the development is compliant with this ordinance and notify building services of recommendation to issue occupancy if approved.~~

~~54. Review all development permit applications within the SFHA to ensure the proposed development is compliant with FEMA's National Flood Insurance Program (NFIP) protection standards for critical habitats of species listed under the Endangered Species Act.~~

B. Use of Other Base Flood Data. When base flood elevation data has not been provided in accordance with WCC 17.0410.050, Basis for establishing the areas of special flood hazard, the department of public works 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 WCC 17.16.070, Specific standards, and 17.16.120, Floodways.

C. Information to be Obtained and Maintained. The department of public works shall:

1. When base flood elevation data is provided through the flood insurance study or required as in WCC 17.12.030B, obtain and record the actual elevation (in relation to mean sea level) of the lowest habitable floor (including basement) of all new or substantially improved structures;

Comment [TB17]: Because we are a Door #3 community all development located within the SFHA technically requires a Habitat Assessment (HA) in accordance with FEMA's Regional Guidance for compliance with the ESA... This language still enables the permit administrator to handle the assessment in house if it can be demonstrated the project is exempt or existing site conditions are void of any habitat function (already developed) or doesn't drain to Puget sound, etc.

Comment [TB18]: FEMA required

Comment [PC19]: Consistent with FEMA Bi-Op and draft WC CAO (WCC 16.16.400)

2. For all new or substantially improved floodproofed structures:

- a. Verify and record the actual elevation to which the structure has been floodproofed (in relation to datum specified on the FIRM mean sea level), and
- b. Maintain ~~the floodproofing certifications required in WCC 17.12.010A~~ by a registered professional engineer that the floodproofing methods for any structure meet the criteria as provided in WCC 17.16.090;

3. Maintain for public inspection all records pertaining to the provisions of this title.

4. Submit reports as required by FEMA for the National Flood Insurance Program.

D. Alteration of Watercourse. ~~The department of buildings and codes administration shall:~~

1. In addition to the requirements of Section 17.12.012, an applicant for a project that will alter or relocate a watercourse shall also submit a request for a Conditional Letter of Map Revision (CLOMR), where required by the Federal Emergency Management Agency. The project will not be approved unless FEMA issues the CLOMR and the provisions of the letter are made part of the permit requirements.

2. Prior to any alteration or relocation of a watercourse, the department of planning and development services shall:

a. Notify adjacent communities and the Washington State Department of Ecology through the State Environmental Policy Act process prior to any alteration or relocation of a watercourse, and The department of public works will provide submit evidence of such notification to ~~FEMA~~ the Federal Insurance Administration if requested;

~~2-b.~~ Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

~~E. Interpretation of FIRM Boundaries. The department of public works shall make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in WCC 17.12.040.~~

F. Required Submission of Additional Information. The administrator shall have authority to require the applicant to submit information certified by licensed professional land surveyors, architects, or engineers as may be reasonably necessary to assure conformance with the standards of this title. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.12.040 Variances – Appeals board established – Factors taken into account – Maintenance of records.

A. The hearing examiner as established by Whatcom County shall hear and decide appeals and requests for variances from the requirements of this title.

B. The hearing examiner shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the administrator in the enforcement or administration of this title.

C. Those aggrieved by the decision of the hearing examiner, or any taxpayer, may appeal such decision to the ~~superior court~~ Whatcom County Council, as provided in ~~RCW Chapter 36.70~~ WCC 20.92.

D. In passing judgement upon such applications appeals and variance requests, the hearing examiner shall consider all technical evaluations, all relevant factors, standards specified in other sections of this title, and:

Comment [DMD20]: incorporated into new section WCC 17.10

1. The danger that materials may be swept onto other land to the injury of others;
2. The danger of life and property due to flooding or erosion damage;
3. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
4. The importance of the services provided by the proposed facility to the community;
5. The necessity to the facility of a waterfront location, where applicable;
6. The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
7. The compatibility of the proposed use with existing and anticipated development;
8. The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
9. The safety of access to the property in times of flood for ordinary and emergency vehicles;
10. The expected heights, velocity, duration, rate of rise, the sediment transport of the flood waters, and the effects of wave action, if applicable, expected at the site; and
11. 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, water systems, and streets and bridges.

12. The potential of the proposed development to adversely affect endangered species and proposed mitigation measures to ensure compliance with the Endangered Species Act.

E. Upon consideration of the factors of subsection D of this section and the purposes of this title, the hearing examiner may attach such conditions to the granting of variances as ~~it~~ deems necessary to further the purposes of this title.

F. The hearing examiner shall maintain the records of all appeal actions and report any variances to the Federal Insurance Administration upon request. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.12.050 Variances – Conditions for issuance.

A. 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, provided items 1 through 11 in WCC 17.12.040D have been fully considered. As the lot size increases the technical justification required for issuing the variance increases.

B. Variances may be issued for the reconstruction, rehabilitation, or restoration of ~~Historic Structures listed on the National Register of Historic Places or the State Inventory of Historic Places,~~ 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.

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

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

E. Variances shall only be issued upon:

1. A showing of good and sufficient cause;

2. A determination that failure to grant the variance would result in exceptional hardship to the applicant; and

3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in WCC 17.12.040D, or conflict with existing local laws or ordinances.

4. A determination that the proposed development is compliant with the Endangered Species Act.

F. 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.

G. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except WCC 17.12.050A, and otherwise complies with WCC 17.16.020 and 17.16.030 of the general standards.

H. 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. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

Chapter 17.16

FLOOD HAZARD REDUCTION STANDARDS

Sections:

- 17.16.010 ~~General s~~Standards.
- 17.16.020 Anchoring.
- 17.16.030 Construction materials and methods.
- 17.16.040 Utilities.
- 17.16.050 Subdivision proposals.
- 17.16.060 Review of building permits.
- ~~17.16.070 Specific standards.~~
- 17.16.080 Residential construction.
- 17.16.090 Nonresidential construction.
- 17.16.095 Critical facilities.
- 17.16.100 Manufactured homes.
- ~~17.16.110 Agricultural buildings~~Wet floodproofing.
- 17.16.115 Recreational vehicles.
- 17.16.120 Floodways.
- 17.16.130 Standards for shallow flooding areas (AO Zones).
- 17.16.140 Coastal high hazard areas.

17.16.010 General Standards.

~~In all areas of special flood hazards~~ The standards set forth in WCC 17.16.020 through 17.16.~~060-140~~ are required in all areas of special flood hazards. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

Comment [PC21]: Because we always derive BFE per WCC 17.10, these standards apply to all floodplains

17.16.020 Anchoring.

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

B. All manufactured homes must likewise be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques). (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.16.030 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. Locating such equipment below the base flood elevation may cause flood insurance premiums to be increased. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.16.040 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.

C. On-site waste [storage and](#) disposal systems shall be located to avoid impairment to them, or contamination from them, during flooding. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

~~D. Water supply wells associated with new development shall be located where it is not subject to ponding and is not in the floodway.~~

Comment [TB22]: Required per State law WAC 173-160-171

17.16.050 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 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 [developed generated for subdivision proposals and other proposed development which contain at least 50 lots or five acres \(whichever is less\)-in accordance with WCC 17.10.030.C.](#) (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.16.060 Review of building permits.

Where elevation data is not available, either through the flood insurance study or from another authoritative source (WCC 17.10.010 and WCC 17.12.030B), 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 [the highest adjacent](#) grade in these zones may result in higher insurance rates. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

~~17.16.070 Specific standards.~~

~~The provisions set forth in WCC 17.16.080 through 17.16.140 are required in all areas of special flood hazards where base flood elevation data has been provided, as set forth in WCC 17.04.05010.020. Basis for establishing the areas of special flood hazards, or WCC 17.12.030B, Use of other base flood data, the provisions set forth in WCC 17.16.080 through 17.16.140 are required. (Ord. 96-050 Exh A; Ord. 87-25 (part)).~~

Comment [PC23]: This section used to define specific standards that applied only when there was a BFE – we always derive one within SFHA's so these apply to all SFHAs

17.16.080 Residential construction.

A. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above [the base-flood protection](#) elevation (FPE), as determined in [accordance with WCC 17.10.020.D.](#)

B. 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 flood waters. 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:

1. A minimum of two openings [on different sides of each enclosed area](#) 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;
2. The bottom of all openings shall be no higher than one foot above grade;
3. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of flood waters. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

[C. Subgrade crawl spaces are prohibited unless the following conditions are met:](#)

1. The interior grade of a crawlspace below the base flood elevation must not be more than 2 feet below the lowest adjacent exterior grade;

2. The height of the subgrade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall must not exceed 4 feet at any point;

3. A drainage system designed to adequately drain the subgrade crawl space area (e.g. sub-surface drains or sump pump system) once floodwaters have receded must be provided; and

4. The crawlspace must comply with applicable FEMA guidance (FEMA Technical Bulletin 11, Crawlspace Construction for Buildings Located in Special Flood Hazard Areas or updated guidance).

The administrator will notify the applicant that construction of a subgrade crawl space will likely impact flood insurance premiums.

17.16.090 Nonresidential construction.

New construction and substantial improvement of any commercial, accessory, agricultural, industrial or other nonresidential structure together with attendant utility and sanitary facilities:

A. Shall have the lowest floor, including basement, elevated to the level of the flood protection elevation. The space below the lowest floor must meet the standards in WCC 17.16.080B and 17.16.080C; or

B. Shall be dry floodproofed so that:

1. Below the flood protection elevation the structure is watertight with walls substantially impermeable to the passage of water; and

2. Structural components are capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

3. The design and methods of construction are certified by a registered professional engineer 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 as set forth in WCC 17.12.030F and shall be provided by the applicant ~~or as~~ required by the department of public works; ~~or-~~

C. Shall be wet floodproofed in compliance with the requirements of WCC 17.16.110.

~~Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in WCC 17.16.080B.~~

~~D.~~ Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g., a building constructed to the base flood level will be rated as one foot below that level). (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.16.095 Critical facilities (Essential Facilities).

Construction of new critical facilities shall be, to the extent possible, located outside the limits of the SFHA (100-year floodplain). Construction of new critical facilities shall be permissible within the floodplain if no feasible alternative site is available. Critical facilities constructed within the floodplain shall have the lowest floor elevated two feet above the base flood elevation. 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 without adversely affecting the flood-carrying capacity of the SFHA.

17.16.100 Manufactured homes.

All manufactured homes to be placed or substantially improved shall be:

Comment [DMD24]: Moved this to under A.

Comment [PC25]: Section recommended by FEMA

Comment [PC26]: Recommended by FCZDAC previously

~~A. within Zones A1-30, AH, and AE shall be e~~levated on a permanent foundation such that the lowest floor of the manufactured home is at or above the base flood elevation and in accordance with WCC 17.16.080 if within zones A, AE, AH, and AO, and subject to WCC Chapter 15.

B. Elevated on a permanent foundation in accordance with WCC 17.16.140 if within zones V or VE.

~~C. be s~~ecurely anchored to an adequately anchored foundation system in accordance with the provisions of Section WCC 17.16.020B. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.16.110 Agricultural buildingsWet floodproofing.

~~Agricultural buildings shall comply with WCC 17.16.090. (Ord. 96-050 Exh A; Ord. 87-25 (part))~~A. Wet floodproofing is allowed for the following types of nonresidential construction:

1. Wet floodproofing is allowed without a variance for enclosed areas below the FPE that are used solely for parking, access, or limited storage including attached and detached garages.
2. Wet floodproofing is allowed with a variance for the types of structures listed below; however, the administrator may waive the requirement for a formal variance provided the proposal meets the conditions of WCC 17.16.110B and applicable FEMA guidance (*FEMA Technical Bulletin 7 Wet Floodproofing Requirements* or updated guidance).
 - a. Structures functionally dependent on close proximity to water.
 - b. Historic structures.
 - c. Residential accessory structures that do not exceed a maximum value of \$25,000 for the cost of construction and are designed to have a low potential for structural damage. The market value of construction shall be determined by the administrator in accordance with the valuation procedure used when setting building permit fees.
 - d. Agricultural structures used exclusively in connection with the production, harvesting, storage, drying or raising of agricultural commodities including livestock, if they are designed to have a low potential for structural damage.

B. Each structure that is wet floodproofed shall meet the following standards:

1. It shall comply with the floodway encroachment provisions of WCC 17.16.120.
2. It shall be anchored to prevent flotation, collapse and lateral movement.
3. All portions of the structure below the FPE shall be constructed of flood-resistant materials.
4. Service utilities such as mechanical, electrical, and heating equipment shall meet the standards of WCC 17.16.030.C and 17.16.040.
5. It shall have openings to allow free flowage of water that meet the criteria in WCC 17.16.080.B.
6. It shall be designed to have a low potential for structural damage from flood inundation, scouring, velocities, and debris impact.
7. The intended use of the structure shall have a low damage potential for content damage or an emergency operation plan to remove the contents.
8. The project shall meet all other requirements of this ordinance.

17.16.115 Recreational vehicles.

Recreational vehicles placed on sites within Zones ~~A1-30, AH, AE and all V, A, AE, AH, AO, V, and VE~~ Zones ~~on the community's FIRM~~ shall either:

- A. Be on the site for fewer than ~~180-120~~ consecutive days; and
- B. 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 having no permanently attached additions; or
- C. Meet the requirements of WCC 17.16.100 and anchoring requirements for manufactured homes. (Ord. 96-050 Exh A).

Comment [TB27]: Revised to be consistent with Title 20

17.16.120 Floodways.

Located within areas of special flood hazard established in WCC ~~17.10.010 17-04-050~~ are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

A. Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer ~~or architect~~ is provided demonstrating through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

B. Construction or reconstruction of residential structures is prohibited within designated floodways, except for the following:

1. Repairs, reconstruction, or improvements to a structure which do not increase the ground floor area, provided that 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, reconstruction, or improvement is started; or (b) before the damage occurred, if the structure has been damaged, and is being restored. Work done on structures 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 to comply with existing health, sanitary, or other safety codes or to structures identified as historic places shall not be included in the 50 percent.

2. Repairs, replacement, reconstruction, or improvements to existing farmhouses located in designated floodways and located on designated agricultural lands that do not increase the building's total square footage of encroachment and are consistent with all requirements of WAC 173-158-075;

3. Repairs, replacement, reconstruction, or improvements to substantially damaged residential dwellings other than farmhouses that do not increase the building's total square footage of encroachment and are consistent with all requirements of WAC 173-158-076; or

4. Repairs, reconstruction, or improvements to residential structures identified as historic structures that do not increase the building's dimensions.

C. If the provisions of WCC 17.16.120 A or B are met or satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this chapter. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

Comment [PC28]: These are two other relaxations of the prohibition on residences in the floodway allowed by state law.

17.16.130 Standards for shallow flooding areas (AO Zones).

Shallow flooding areas appear on FIRMs as AO Zones with depth designations. The base flood depths in these zones range from one to three feet 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:

A. New construction and substantial improvements of residential structures within AO Zones shall have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, ~~to or one foot~~ above the depth number specified on the FIRM (at least two feet if no depth number is specified).

B. New construction and substantial improvements of nonresidential structures within AO Zones shall either:

1. Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, to ~~or one foot~~ above the depth number specified on the FIRM (at least two feet if no depth number is specified); or
2. Together with attendant utility and sanitary facilities, be completely floodproofed 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 WCC 17.16.090BA.3.

C. Adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures shall be provided. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

17.16.140 Coastal high hazard areas.

Located within areas of special flood hazard established in WCC 17.~~44.050-10.020~~ are coastal high hazard areas, designated as Zones ~~V4-V30, VE and/or V~~ and VE. These areas have special flood hazards associated with high velocity waters from tidal surges and, therefore, in addition to meeting all applicable provisions in this title, the following provisions shall also apply:

A. All new construction and substantial improvements in Zones ~~V4-V30~~ and VE (~~V if base flood elevation data is available~~) shall be elevated on pilings and columns so that:

1. The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level FPE; and
2. 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 equalled or exceeded in any given year (100-year mean recurrence interval). 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 1 and 2 of this subsection.

B. Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in Zones ~~V4-30~~ and VE, and whether or not such structures contain a basement. The local administrator shall maintain a record of all such information.

C. All new construction shall be located landward of the reach of mean high tide.

D. Provide that all new construction and substantial improvements have the space below the lowest floor either free of obstruction or constructed with nonsupporting breakaway walls, open wood latticework, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. For the purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or state codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:

1. Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and

2. The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being ~~equalled~~equaled or exceeded in any given year (100-year mean recurrence interval).

E. If breakaway walls are utilized, such enclosed space shall be usable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.

F. Prohibit the use of fill for structural support of buildings.

G. Prohibit manmade alteration of sand dunes which would increase potential flood damage. (Ord. 96-050 Exh A; Ord. 87-25 (part)).

Chapter 17.20

FLOOD CONTROL MAINTENANCE PROGRAM

(Repealed by Ord. 2008-047)

Chapter 17.24

UNAUTHORIZED USE OF MOTORIZED VEHICLES UPON FLOOD CONTROL STRUCTURES

Sections:

- 17.24.010 Definitions.
- 17.24.020 Unauthorized use of motorized vehicle.
- 17.24.030 Violation – Penalty.

17.24.010 Definitions.

The definitions set forth in this section shall apply throughout this chapter.

- A. “County” means Whatcom County, unless otherwise noted.
- B. “Flood control structure” means any structure, whether natural or man-made in origin that operates, or is intended, to contain, channelize, direct or otherwise control the flow of water along or near the banks of the Nooksack River.
- C. “Motorized vehicle” means any vehicle that is motor-driven, whether by internal combustion engine or electric motor, and any attachments thereto.
- D. “Nooksack River” means the river commonly known as the Nooksack River, along with its North, Middle, and South Forks, as more precisely defined in WAC 173-18-410 as now written or hereinafter amended, and the channels within which this river and its forks flow, within Whatcom County.
- E. “Proper authorization” means use of a motorized vehicle for purposes of inspection, maintenance, improvement, or construction of flood control structures, or for access for legitimate agricultural purposes:
 - 1. By immediate family members or current employees of the owner or tenant of the land upon which the flood control structure is located, under the authority and direction of that owner or tenant, or
 - 2. Under the authority and with the current permission of the public agencies responsible for flood control activities within the county.

The claim of proper authorization is an affirmative defense which must be pled prior to hearing or trial, and which the defendant must prove by a preponderance of the evidence. (Ord. 2003-002).

17.24.020 Unauthorized use of motorized vehicle.

It is unlawful for any person to operate, or to ride upon, a motorized vehicle on any flood control structure within 3,000 feet of the Nooksack River, unless done with proper authorization. (Ord. 2003-002).

17.24.030 Violation – Penalty.

Violation of this chapter shall constitute a Class 1 civil infraction under the authority granted the county in Chapter 7.80 RCW. Each violation hereof shall be punishable by a maximum penalty or default amount as set forth in RCW 7.80.120, or any successor statute thereto. All violations shall be charged, heard, and determined in accordance with the procedures set forth in Chapter 7.80 RCW. Employees of the Whatcom County public works department, river and flood division, or its successor agency, if any there be, as well as all others who are otherwise authorized to enforce ordinances of this county, are hereby authorized to enforce the provisions of this title, consistent with the provisions of Chapter 7.80 RCW.

After having been found to have committed two infractions for violations of the provisions of this chapter, any person who further violates the provisions of this chapter shall be guilty of a misdemeanor, and shall be subject to criminal penalties including a fine of not more than \$1,000, together with statutory assessments and any costs of action, and imprisonment in the county jail for a period of not more than 90 days.

In addition to the civil and criminal remedies provided for above, the county or the owner(s) of the land affected by the violation of the provisions of this chapter may bring such injunctive, declaratory or other actions as deemed necessary, and as otherwise allowed by law, to ensure that violations are prevented or cease, and to otherwise enforce the provisions of this chapter. (Ord. 2003-002).

**Public Works
DRAFT - Staff Report
July 6, 2017**

I. BACKGROUND INFORMATION

Summary of Request:

Adopt amended version of Whatcom County Code, Title 17, Flood Damage Prevention (see Attachment A).

After a National Flood Insurance Program (NFIP) Community Assistance Visit (audit) in 2015, FEMA determined that our current version of Title 17 does not meet the minimum requirements of the NFIP and/or Code of Federal Regulations (CFR's).

FEMA requires communities to demonstrate their compliance with the minimum criteria in order to participate in the NFIP. The NFIP is administered locally by Whatcom County Public Works through Title 17, Flood Damage Prevention.

In addition to changes made in response to the audit findings, the proposed amended Title 17 includes changes recommended by the Flood Control Zone District Advisory Committee (FCZDAC) and language clarifications recommended by Staff.

Location: Title 17 and the proposed amendments apply to Special Flood Hazard Areas (areas within the 100-year floodplain) within the unincorporated areas of Whatcom County.

SEPA: the State Environmental Policy Act (SEPA) Official for Whatcom County issued a Determination of Non-Significance on ???.

II. ANALYSIS OF THE PROPOSED AMENDMENT

A detailed analysis of each of the proposed revisions is as follows.

Chapter 17.04 GENERAL PROVISIONS

17.04.010 Findings of Fact

The proposed revision to WCC 17.04.010.B clarifies reasons for flood losses and relates lack of adequate precautions to impacts on habitat.

17.04.020 Statement of purpose and liability disclaimer

All development within Special Flood Hazard Areas must comply with the Endangered Species Act. The proposed revision includes protection of endangered species and their habitats.

17.04.040 Application of title

The proposed revision adds a reference to a new definition for “Special Flood Hazard Area.”

17.04.050 Basis for establishing areas of special flood hazard

This section has been removed; the content in this section was moved to 17.10.020.A under the new section 17.10 Regulatory Data.

17.04.090 Penalty for noncompliance and enforcement

The proposed revision makes the enforcement of Title 17 consistent with the enforcement process used for the Critical Areas Ordinance (CAO), as the CAO includes conformance with the provisions of Title 17 as part of the general standards for Frequently Flooded Areas.

17.04.100 Severability

This section is proposed for addition to the code based on legal review.

Chapter 17.08 DEFINITIONS

17.08.013 Accessory structure

This definition was added to provide clarification as to what constitutes an accessory structure, as portions of the existing and proposed codes use the term.

17.08.051 Base Flood Elevation

This definition was added to provide clarification as to what the term means, as portions of the existing and proposed codes use the term.

17.08.053 Basement

This definition was added to provide clarification as to what constitutes a basement, as portions of the existing and proposed codes use the term.

17.08.058 Critical facility

This definition was added along with section WCC 17.16.095 to provide a higher level of flood protection for public facilities that are considered essential to protecting public health, safety and welfare during a flood event. The language was taken from FEMA’s model ordinance.

17.08.062 Dry floodproofing

This definition was added to provide clarification as to the difference between dry and wet floodproofing, as new language is proposed in WCC 17.16.110 to allow for wet floodproofing in accordance with FEMA guidance. The current code allows for dry floodproofing in some situations but does not specifically allow for wet floodproofing.

17.08.064 Elevation certificate

This definition was added to provide clarification as to what the term means, as portions of the existing and proposed codes use the term.

17.08.066 FEMA

This definition was added to provide clarification as to what the term means, as portions of the existing and proposed codes use the term.

17.08.092 Flood Protection Elevation (FPE)

This definition was added for easier reference when defining elevation standards throughout the code. WCC 17.10.030.D was also added and specifies that the FPE is one foot above the base flood elevation; new and substantially improved structures are required to elevate to the FPE. The current code only requires elevation to the base flood elevation. The higher standard is required to be consistent with the International Residential Code (IRC).

17.08.097 Historic structure

This definition was added to provide clarification as to what constitutes a historic structure, as portions of the existing and proposed codes use the term.

17.08.178 Substantial damage

This definition was added to enable more flood insurance policy holders to qualify for Increased Cost of Compliance (ICC) funding through flood insurance claims. ICC funding of up to \$30,000 is available to policy holders whose residences have been substantially damaged for modifications to the structure which will reduce future damage. The definition includes provisions for smaller damage amounts on multiple occasions to enable more homeowners to be able to qualify for the ICC funding.

17.08.180 Substantial improvement

This definition was reformatted to provide clarity.

17.08.193 Watercourse

This definition was added to provide clarification as to what the term means, as portions of the existing and proposed codes use the term.

17.08.195 Wet floodproofing

This definition was added to enable the addition of wet floodproofing standards for certain types of nonresidential construction as detailed in WCC 17.16.110.

17.08.200 Zone

This definition was added to provide clarification as the term is used in portions of the existing and proposed codes.

Chapter 17.10 REGULATORY DATA

This entire section was added to provide an organized presentation of the various types of data used in administering the code.

17.10.010 Basis for establishing Special Flood Hazard Area

Item A in this section was moved from 17.04 General Provisions (previously was WCC 17.04.050), updated to reference the current release of the flood insurance study and map, and slightly reworded. Item B clarifies how the administrator interprets the boundaries of the regulatory limits. Item C explains the Letter of

Map Amendment (LOMA) process as a possible way of removing property from the SFHA.

17.10.020 Flood hazard data

This section clarifies the sources of base flood elevation and floodway data used in administering the code. Item D in this section defines the “Flood protection elevation” as one foot above the base flood elevation; this is a change from the current code which only requires structures to be elevated to the base flood elevation. Recommended by FEMA and FCZDAC and what is required to ensure no damage to subfloor materials and equipment.

17.10.030 New regulatory data

This section is required in order to comply with the Code of Federal Regulations (CFR). The section includes provisions for processing requests for Letters of Map Revision and describes how new flood elevation and floodway data are to be developed. It also describes the methods applicants should use if they do not agree with the current regulatory data.

Chapter 17.12 ADMINISTRATION

One new section has been added to this chapter and other existing sections have been modified to provide clarification and to incorporate recommendations by the FCZDAC, and compliance with ESA.

17.12.012 Requirements for development permit application within a SFHA

This section was added to clarify what should be submitted as part of a development permit application. Language from the existing code WCC 17.12.010 was used in this new section along with additional language from FEMA’s model ordinance to address ESA compliance and recommended revisions by the FCZDAC.

17.12.020 Administrative department - Designated

The proposed revision clarifies that the section only applies to development permit applications within the SFHA.

17.12.030 Administrative department – Duties and responsibilities

Proposed revisions throughout this section clarify that the section applies only to development within the SFHA, and to address ESA compliance and the CFR.

17.12.040 Variances – Appeals board established – Factors taken into account – Maintenance of records

Section 17.12.040.C was revised to be consistent with the variance process used for other Whatcom County codes. Section 17.12.040.D.12 was added to address the ESA.

17.12.050 Variances – Conditions for issuance

Section 17.12.050.E.4 was added to address ESA compliance.

Chapter 17.16 FLOOD HAZARD REDUCTION STANDARDS

One new section has been added along with revisions proposed by staff to clarify how the standards are applied and for compliance with the CFR. Recommended changes by the FCZDAC are also incorporated throughout this chapter.

17.16.010 Standards

Language was changed to clarify that these standards apply to all floodplain designations.

17.16.030 Construction materials and methods

Language was added as recommended by FEMA to notify applicants of potential impacts to flood insurance premiums.

17.16.040 Utilities

Part D was added to comply with state law.

17.16.050 Subdivision proposals

This section was revised to reference the new regulatory data section which includes the requirement in this section of the current code.

17.16.060 Review of building permits

The proposed revision clarifies how the code is currently administered and is consistent with FEMA guidance.

17.16.070 Specific standards

This section has been removed; the reference to another code section was revised to reflect that the section was moved in the proposed code.

17.16.080 Residential construction

Section 17.16.080.A was revised to reference the FPE rather than the BFE for the elevation standard to be consistent with the IRC. Section 17.16.080.B was clarified to be consistent with FEMA guidance. New language was added under section 17.16.080.C to allow for sub-grade crawlspaces in accordance with FEMA guidance.

17.16.090 Nonresidential construction

Sections 17.16.090.A and B were revised to reference the FPE rather than the BFE for elevation standards, as this is consistent with the IRC. Section C was added to allow for wet floodproofing of some nonresidential structures as long as they comply with FEMA requirements (see WCC 17.16.110).

17.16.095 Critical facilities (Essential Facilities)

This section was added to provide a higher level of flood protection to facilities that would be critical during a flood event. The FCZDAC recommended the elevation standard for critical facilities be 2 feet above the BFE.

17.16.100 Manufactured homes

This section was revised to comply with the CFR.

17.16.110 Wet-floodproofing

This section was previously titled “Agricultural buildings” and only allowed for elevation or dry floodproofing consistent with the requirements for other nonresidential structures. The section was renamed to allow wet-floodproofing construction techniques for agricultural structures as well as other nonresidential structures that meet the criteria in FEMA technical guidance. The original draft of this section was derived from a FEMA technical guidance document. The current version includes revisions recommended by the FCZDAC.

17.16.115 Recreational vehicles

This section was revised to reflect the current flood zone designations used by FEMA on the Flood Insurance Rate Maps. Section 17.16.115.A was revised to be consistent with the zoning code, Title 20.

17.16.120 Floodways

Reference to another code section was revised as that section was moved in the proposed code. Revisions to section 17.16.120.A clarify who is qualified to perform floodway analyses and how it should be completed. Additional language was added to section 17.16.120.B to allow for repairs, replacement, reconstruction, or improvements to existing farmhouses and historic structures without having to go through a formal variance process and is consistent with state law (WAC 173-158-075 and WAC 173-158-076).

17.16.130 Standards for shallow flooding areas (AO zones)

The proposed revisions are consistent with the requirement to elevate to one foot above the BFE, but are applicable to shallow flooding areas where a BFE has not been defined.

17.16.140 Coastal high hazard areas

This section was revised to address the requirement to elevate one foot above BFE requirement (or FPE), consistent with the IRC. Revisions were also made to reference the flood zone designations currently used by FEMA

III. PROPOSED FINDINGS OF FACT AND REASONS FOR ACTION

1. The proposed ordinance has been revised to address the deficiencies found as a result of a Community Assistance Visit (audit) by FEMA.
2. Recommendations from the FCZDAC have been incorporated.
3. Revisions by staff have been incorporated to help improve administration of the code and to clarify code for easier use by all.
4. Language was added to demonstrate compliance with ESA.
5. Language was added to be consistent with State law.
6. The FCZDAC reviewed and discussed the revised code at their meetings on January 12, February 16, March 9 and April 20, 2017. At the April 20 meeting, they unanimously recommended approval of the revised version of the code with their recommended revisions. Two minor revisions based on

the state's review were made subsequently, and redistributed to the FCZDAC for their comment. No comments were received.

7. A determination of non-significance was issued ???, 2017 under the State Environmental Policy Act.
8. Notice of the public hearing was published in the Bellingham Herald on ???, 2017.

IV. RECOMMENDATION

The deadline for Whatcom County to remain in good standing with the NFIP and to have the revised code adopted is September 30, 2017. Failure to adopt an ordinance that is consistent with the minimum requirements of the NFIP and/or CFR's will jeopardize the County's ability to receive funding for projects and ultimately jeopardize the County's ability to participate in the NFIP which makes flood insurance available to the community. Furthermore, the proposed version of code also benefits the community by:

- Making it easier for property owners to qualify for ICC funding to help recover structures that have been substantially damaged by a flood.
- Allowing for wet floodproofing for agricultural structures.
- Providing further protection of critical facilities and all other structures from flood damage.
- Adding language for the protection of listed species and their habitat as necessary for compliance with ESA.

Staff recommends that the County Council adopt the amendments to Title 17 as proposed. The State NFIP Coordinator has reviewed and approved these amendments to code for compliance with the NFIP and CFR's.

VI. ATTACHMENTS

1. Whatcom County Title 17, Flood Damage Prevention