Burien
Washington, USA
400 SW 152nd Street, Suite 300 Burien, WA 98166 Phone: (206) 241-4647 ● FAX: (206) 248-5539 www.burienwa.gov

FLOOD DAMAGE PREVENTION FOR SINGLE FAMILY RESIDENCE SUBMITTAL CHECKLIST

Applicants wishing to obtain a Building Permit for structures to be built within the shoreline areas of Puget Sound and other FEMA (Federal Emergency Management Agency) Special Flood Hazard Areas (SFHA) must comply with the FEMA and NFIP (National Flood Insurance Program) *requirements, current International Residential or Building Code, and Burien Municipal Code* Flood Damage Prevention regulations (BMC 15.55)

FEMA Flood Elevation Certificate Forms along with FEMA instructions for completing the form are available upon request. Staff is available to assist you with the necessary information needed to complete Section A and B of the form. The form must be stamped by a Washington State licensed Surveyor per FEMA regulations.

An Architect or designer must verify that construction drawings, site plan, section drawings, foundation plan, and elevation plan match the elevations noted in C2 of the flood elevation certificate.

FEMA Flood Elevation Certificate (required)

- ☐ The form must be stamped by a Washington State licensed Surveyor per National Flood Insurance Program regulations.
- ☐ An Architect or designer must verify that construction drawings, site plan, section drawings, foundation plan, and elevation plan match the elevations noted in C2 of the elevation certificate.

HABITAT ASSESSMENT CHECKLIST

Anytime the proposed work will cause the area with the flood zone to be disturbed, such as excavation, grading, fill, or equipment staging, a Habitat assessment may need to be performed by a qualified Biologist.

- ☐ Habitat Assessment Checklist (Completed by a qualified Biologist) https://www.fema.gov/media-library-data/1521082188266-40651225e6d536a82c5b995a9d4723d2/Floodplain-Habitat-Assessment-Worksheet_v1_6_Revised_508.pdf

In addition to the FEMA Flood Elevation Certificate, the following information should be included on the construction drawings and site plan:

Site Plan

Provide current survey of property performed by a Washington State Licensed Surveyor which includes the following:

- ☐ Reference datum point elevation identified in NAVD and NGVD.
- ☐ Show topographic elevations in 1 foot increments.
- ☐ Identify FEMA base flood elevation per February 2013 Map revision available at City Hall.
- ☐ Show footprint of the proposed structure.
- ☐ Show finished grade in the crawl space of the proposed structure.
- ☐ Show proposed elevation of the first floor above crawl space.
- ☐ Where no crawl space is proposed, show the proposed elevations of all slabs, including garage.

Cover sheet

- ☐ Include the data found in section C2 of the elevation certificate.
- ☐ Indicate new FEMA flood elevation certificate is to be completed and submitted to the City of Burien Building Inspector prior to:
  - Underfloor inspection where crawl space is proposed

- Under slab / Footing inspection where Slab on grade is proposed
- Prior to Final Inspection Approval.

Foundation Plan

☐ Include elevation notes based on requirements of section C of the elevation certificate for crawl space, and foundation wall heights.

☐ Include calculation showing flood vent area will be at least 1 square inch for every square foot of crawl space and will be located on at least two sides of the structure. Show location of flood vents.

Floor Framing Plan

☐ Include elevation notes based on requirements of section C of the elevation certificate.

☐ Indicate all materials placed below the Design Flood Elevation will be as follows:

- All wood, including floor sheathing, must be pressure treated in accordance with AWPA C1, C2, C3, C4, C9, C15, C18, C22, C23, C24, C28, P1, P2 and P3 or decay-resistant heartwood or redwood, black locust, or cedars.
- Materials and installation methods used for flooring and interior and exterior walls and wall coverings must conform to the provisions of FEMA/FIA-TB-2 available at www.FEMA.gov.
- Indicate all utilities placed below the design flood elevation will be as follows:
  - Electrical systems, equipment and components, and heating, ventilating, air conditioning and plumbing appliances, plumbing fixtures, duct systems, and other service equipment are permitted to be located below the design flood elevation provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation in compliance with the flood-resistant construction requirements. Electrical wiring systems are permitted to be located below the design flood elevation provided they conform to the provisions of the National Electrical Code for wet locations.
- Indicate all insulation materials placed below the design flood elevation will be foam or closed-cell types of insulation only. No batt or blanket type insulation is allowed.

Cross-Sections

☐ Identify all elevation requirements of section C2 of the elevation certificate in the foundation / first floor cross section.

☐ Indicate what construction material will be used at all locations below the Design Flood Elevation.

☐ Show utilities placed below the design flood elevation and describe how they will be flood proofed.

☐ Show insulation materials placed below the design flood elevation and describe the material and R-factor which will be installed.

☐ Provide detail to show bottom of flood vents will be no more than 1 foot above finished grade.

☐ Show crawl space will not be lower than exterior finished grade at the lowest finished grade elevation.

Elevation plans

Height measurement to include:

☐ Average **existing** grade datum elevation.

☐ Highest point of structure datum elevation.

☐ Overall height of structure as measured from average **existing** grade.

☐ Show all elevations points from Section C of flood elevation certificate.

☐ Show location of all flood vents and crawl space vents.

Additional Requirements for structures located in VE zones

Structures located within areas of special flood hazard established in BMC 15.55.070 are coastal high hazard areas, designated as zones V1-V30, VE and/or V. These areas have special flood hazards associated with high velocity waters from surges and must meet additional requirements.

All new allowable construction and substantial improvements in zones V1-V30 and VE (V if base flood elevation data is available) shall be elevated on pilings and columns so that:

- ☐ 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
- ☐ 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). 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 these provisions.
- ☐ Provide the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in zones V1-V30 and VE, and indicate whether or not such structures contain a basement.
- ☐ All new construction shall be located landward of the reach of mean high tide.
- ☐ All new construction and substantial improvements must have the space below the lowest floor either free of obstruction or constructed with non-supporting 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.
- ☐ 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 design proposed meets the following conditions:
  - o Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
  - o 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 equaled or exceeded in any given year (100-year mean recurrence interval).
- ☐ 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.
- ☐ Fill for structural support of buildings is not allowed
- ☐ Manmade alteration of sand dunes that would increase potential flood damage is not allowed.

After the permit is issued a new FEMA flood elevation certificate will need to be completed and submitted to the City of Burien Building Inspector prior to:

- Underfloor framing inspection where crawl space is proposed and/or under-slab inspection where Slab on grade is proposed to be placed
  AND
- Prior to Final Inspection Approval. The Final FEMA Flood Elevation Certificate must be accompanied by photographs of the structure from at least two different elevations showing the structure complies with the FEMA requirements and is consistent with the Flood Elevation Certificate. If a Biological Assessment required mitigation provide a Final Habitat Assessment with an evaluation as to whether the mitigation measures were successful, unsuccessful, or inconclusive.

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Owner's Name: _____ Permit #: _____

Site Address: _____ Parcel #: _____

This form is to be completed by a qualified biologist. Please provide the applicable response.

Habitat Assessment Completed?		Yes
		Not Required
Brief description of Project and Habitat:		
Anticipated Effects on Habitat?		No Effect
		May Affect, Not Likely to Adversely Affect
		Likely to Adversely affect
Increase in Impervious Surface?		No
		Yes – Amount to nearest 1/10 acre: _____
Any Trees Removed?		No
		Yes Number of Small Trees _____ Number of Medium Trees _____ Number of Large Trees _____
Identified Activities to Complete Project?		None
		Vegetation Removal
		Channel straightening
		Bank Armoring
		Habitat Isolation
		Reduced Flood Storage Capacity
		Degraded Water Quality
		Construction Effects
		Other (describe)
Was Mitigation Required to Preserve Habitat?		Yes
		No
		In Progress
Mitigation Activities Required to Preserve Habitat?		None
		Avoidance
		Restoration
		Compensation
		Combination
		Other (describe)
Evaluation of Mitigation Success?		Successful
		Unsuccessful
		Inconclusive
		Mitigation not required
Floodplain filled?		No
		Yes – Amount to nearest 1/10th Acre: _____
Floodplain Partially restored?		No
		Yes – Amount to nearest 1/10th Acre: _____
Was a Letter of Map Change Requested?		Yes
		No
LOMC Case Number?		

Comments:

Prepared by: _____ Date: _____