

6a. Staff Report - Floodplain Management Amendments

Planning Commission Meeting Date: May 7, 2020

Agenda Item: 6a.

PLANNING COMMISSION AGENDA ITEM CITY OF SHORELINE, WASHINGTON

AGENDA TITLE: Amendments to Floodplain Management, SMC Chapter 13.12
DEPARTMENT: Planning & Community Development
PRESENTED BY: Andrew Bauer, Senior Planner

Public Hearing
 Discussion

Study Session
 Update

Recommendation Only
 Other

INTRODUCTION

On February 19, 2020 the Federal Emergency Management Agency (FEMA) issued a Letter of Final Determination for new Flood Insurance Rate Maps (FIRMs) for cities in King County. The City now has six-months to amend its floodplain management regulations to reflect the new FIRMs which will take effect on August 19, 2020. Amending the floodplain management regulations will ensure the City remains a participating community in the National Flood Insurance Program (NFIP), allowing residents to purchase flood insurance.

At the May 7, 2020 Planning Commission meeting staff will:

- Provide background for the countywide FIRM updates
- Provide overview of the NFIP
- Discuss key concepts of floodplain management
- Give an overview of the draft amendments to the City's floodplain management regulations

BACKGROUND

The Letter of Final Determination issued by FEMA on February 19, 2020 is the result of years of work to update FIRMs in King County. Through the nation-wide Risk MAP effort, FEMA is updating coastal FIRMs. King County was identified as a priority for update based on factors such as population at risk to hazards, recent events, and community interest. As such, the most substantive map changes within the City are along the Puget Sound shoreline.

Preliminary FIRMs for the City were first published in 2013. Outreach to affected properties and stakeholders was conducted to share the preliminary FIRMs and get input on them. City staff also worked closely with FEMA to ensure the best technical data was used in the mapping updates. Since 2013 the FIRMs have been refined and other areas of the county have had preliminary FIRMs released. The infographic in **Attachment A** illustrates the FIRM update process.

Approved By: Project Manager AG Planning Director _____

6a. Staff Report - Floodplain Management Amendments

With the Letter of Final Determination now issued, the City has six-months to amend its floodplain management regulations to adopt the new FIRMs and meet the minimum standards to participate in the NFIP.

National Flood Insurance Program

Flooding is the most common natural disaster in the US, affecting nearly every community. To help minimize and mitigate the impacts of flooding, the NFIP was established by Congress in 1968 and been modified numerous times since its inception. FEMA is responsible for administering the NFIP.

The City of Shoreline became a NFIP member community in 1997. The NFIP is a voluntary federal program enabling property owners in participating communities to purchase flood insurance. In exchange, member communities must adopt and enforce minimum regulations developed by the NFIP intended to reduce flood damage. FEMA can only provide flood insurance to those communities that adopt and enforce floodplain management regulations that meet or exceed minimum NFIP requirements. There are approximately 5 million policyholders in more than 22,000 NFIP-participating communities.

The three components of the NFIP are:

- Flood risk mapping
- Floodplain management regulations
- Insurance

This report will discuss the first two components (flood risk mapping and flood management regulations) as they relate to the topic before the Planning Commission. More information about the NFIP can be found at www.fema.gov/national-flood-insurance-program.

Flood Risk Mapping

FEMA works closely with NFIP-participating communities to identify flood hazards from riverine, coastal, ponding, lakes, and other flood sources using scientific and engineering modeling. Special Flood Hazard Areas (“flood hazard areas”) are then mapped on FIRMs. A FIRM is an official map that displays the flood hazard areas, zones within the hazard areas, and associated flood risks. FIRMs are used to inform floodplain management regulations as well as to convey risk to lenders, insurers, and property owners.

There are approximately 110 properties with mapped flood hazard areas in the City. Flood hazard areas citywide are shown on **Attachment B** and are focused to the Puget Sound shoreline, Boeing Creek, and Thornton Creek (including Ronald Bog and Twin Ponds). The new FIRMs do not significantly expand the flood hazard areas but instead include more detail regarding base flood elevations. For example, the new FIRMs include base flood elevations for the coastal flood hazards on Puget Sound which means a property owner would no longer be responsible for conducting an independent study to determine the base flood elevation when one is needed.

6a. Staff Report - Floodplain Management Amendments

Floodplain Management Regulations

Floodplain management is a community-based effort to prevent or reduce the risk of current and future flooding, with the goal of establishing flood resiliency. Floodplain management includes a variety of functional areas within the City such as zoning, building, and code enforcement. FEMA has minimum floodplain management regulations for communities participating in the NFIP.

The City's floodplain management regulations are adopted in Chapter 13.12 of the Shoreline Municipal Code (SMC). Amendments to SMC 13.12 are necessary to adopt the latest Flood Insurance Study and FIRMs, as well as to include the minimum necessary regulations required as a condition of participating in the NFIP. Failure to adopt the minimum regulations would result in the City being suspended from the NFIP.

KEY TERMS AND CONCEPTS

Floodplain Function

Floodplains are a natural feature which are part of the broader natural water system. Floodplains provide several flood risk reduction benefits by slowing runoff and storing floodwater and can also provide groundwater recharge, improve water quality, and provide fish habitat, among others. Many of the floodplain areas within the City have been altered and developed, but actions through preservation and enhancement can provide a net benefit to natural floodplain functions.

Floodplain

Figure 1 below shows the characteristics of a floodplain. At its most basic, the floodplain is any land area that is susceptible to being inundated by water. Development within the floodplain is typically required to be elevated at least one foot above the base flood elevation.

Base Flood

The base flood elevation is the elevation which floodwater is anticipated to rise during the base flood. The base flood is sometimes referred to as the 100-year flood, which some have interpreted as occurring every 100 years. However, the term has nothing to do with calendar years. Instead, this term means there is a 1% (or 1 in 100) chance of a flood happening in any given year.

Floodway

The floodway is the stream/river channel and the adjacent area needed to discharge floodwaters during a base flood. Development in the floodway is typically prohibited or strictly regulated.

6a. Staff Report - Floodplain Management Amendments

Flood Protection Elevation (FPE) or Design Flood Elevation (DFE)

The elevation that new and substantially improved structures must be protected from flood damage is referred to as either the flood protection elevation or design flood elevation. The City's flood protection elevation (or design flood elevation) is one foot above the base flood elevation.

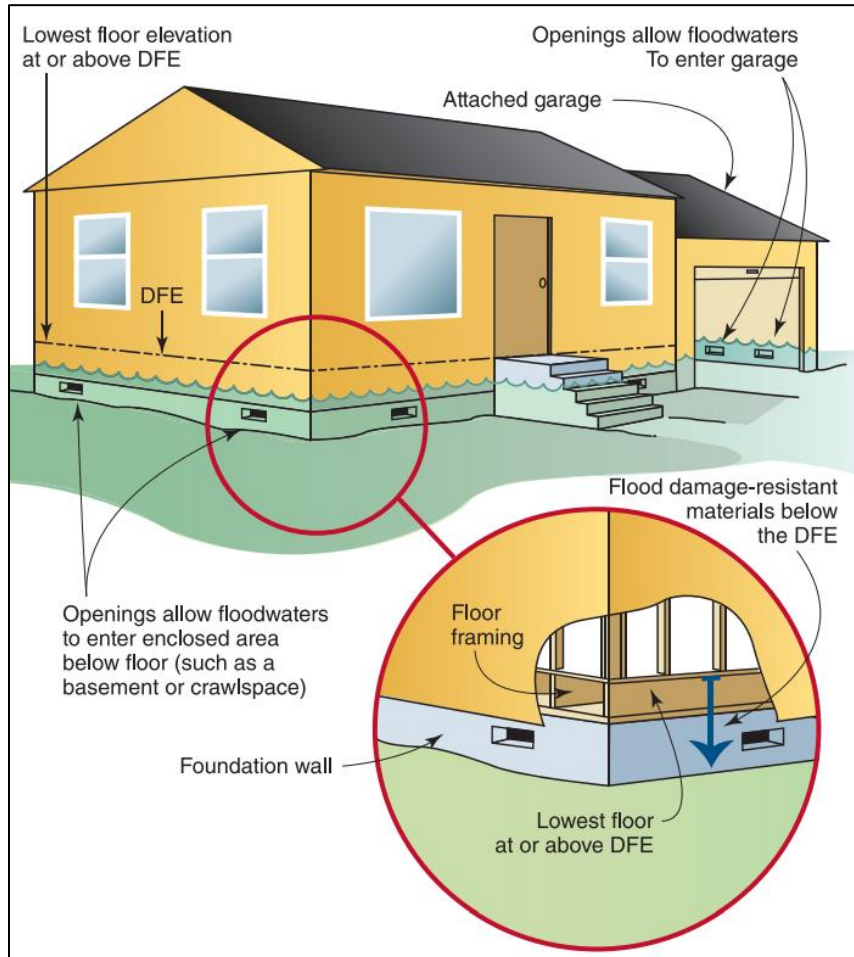


Figure 3: Typical Wet Floodproofing
DFE – “Design Flood Elevation”

Source: FEMA P-312, *Homeowner's Guide to Retrofitting 3rd Edition* (2014)

Coastal Flood Areas (V Zones)

Coastal flood areas are designated as V zones on the FIRMs. These areas have special flood hazards associated with high velocity waters from surges and high winds. The V zones in the City occur along the Puget Sound shoreline. The City's floodplain management regulations typically require structures in V zones be elevated one foot above the base flood elevation (Figure 4). However, flood proofing standards for portions of the structure below the base flood elevation differ than in other flood zones because of the potential for higher water velocities associated with the shoreline.

6a. Staff Report - Floodplain Management Amendments

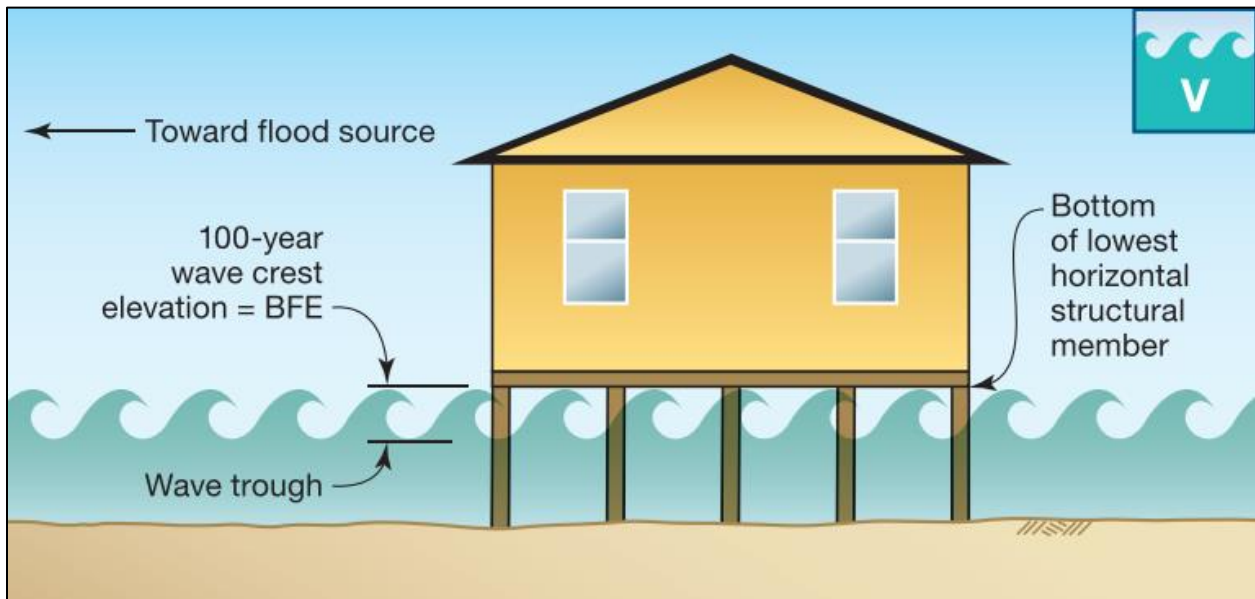


Figure 4: Typical Coastal Floodproofing

Source: FEMA P-55, Vol I, Coastal Construction Manual: Principles and Practices of Planning, Siting, Designing, Constructing, and Maintaining Residential Buildings in Coastal Areas, 4th Edition (2011)

FLOODPLAIN MANAGEMENT AMENDMENTS

The City's floodplain management regulations are in SMC 13.12. The last substantive update to the regulations occurred in 2012. The Washington Department of Ecology (Ecology), in partnership with FEMA, has published a statewide "model ordinance" containing minimum floodplain management regulations and take into account the latest round of countywide FIRM updates effective August 19, 2020. City staff have worked closely with Ecology and FEMA to ensure the amendments comply with the minimum standards of the model ordinance. Failure to adopt the minimum standards would result in the City's suspension from the NFIP and subsequent inability by residents to purchase flood insurance.

The draft amendments to floodplain management regulations in **Attachment C** include the current regulations with new text shown in underline and removed text shown with strikethrough. Highlighted sections are those that have been relocated from another section. The amendments:

- Include new and updated definitions for key terms;
- Include minimum flood protection standards for structures in coastal hazard areas (V zones);
- Include minimum flood protection standards for structures in all other hazard areas (A zones);
- Clarify that habitat assessments are not required for development outside the special flood hazard area;
- Maintain the requirement that most new structures are elevated at least one foot above the base flood elevation; and
- Maintain the existing Floodplain Development Permit review process.

6a. Staff Report - Floodplain Management Amendments

Relationship to Other Regulations

There are approximately 110 properties with mapped flood hazard areas within the City – generally focused to the Puget Sound shoreline, Boeing Creek, and Thornton Creek. These areas are also typically subject to other environmental protection regulations such as the Shoreline Master Program (SMC 20.240) and the Environmentally Critical Areas regulations (SMC 20.80). In many instances these existing environmental regulations work in conjunction with the floodplain management regulations to require protection to the environment, mitigation for impacts, and minimization of the potential for flood damage. Often, setback or buffer requirements associated with shorelines or critical area regulations will also force development outside of flood hazard areas.

ANALYSIS

Staff has prepared the draft floodplain management amendments (**Attachment C**) to be consistent with the minimum requirements to continue membership in the NFIP. The Shoreline Comprehensive Plan sets out goals and policies that are implemented through specific actions, plans, and regulations, such as the floodplain management regulations.

The amendments are consistent with the following goals and policies of the Comprehensive Plan:

- *Goal FG7: Conserve and protect our environment and natural resources, and encourage restoration, environmental education, and stewardship.*

The floodplain management regulations continue to protect flood hazard areas by prohibiting most activities within floodways and by regulating the way development occurs in areas with a 1% annual chance of flooding. The amendments also continue to require development activities within flood hazard areas to consider potential impacts to habitat. These regulations help protect natural floodplain functions which provide benefits such as habitat and water quality while also protecting people and property from harm during a flood event.

- *Goal FG8: Apply innovative and environmentally sensitive development practices.*

The regulations continue to require new development activities within flood hazard areas to consider impacts to habitat and to provide mitigation measures where necessary to develop in an environmentally sensitive manner.

- *Policy LU73: Maintain and enhance natural drainage systems to protect water quality, reduce public costs, protect property, and prevent environmental degradation.*

The regulations require that new development (including utilities) within flood hazard areas be flood proofed in order to minimize risk to people and damage to property. Flood proofing also helps protect natural drainage by allowing flood waters to flow in their natural course.

6a. Staff Report - Floodplain Management Amendments

- *Goal NEI: Minimize adverse impacts on the natural environment through leadership, policy, and regulation, and address impacts of past practices where feasible.*

The regulations require new development to meet the standards for flood proofing. They also continue to require that substantial improvements to existing structures be brought into compliance with current flood proofing standards.

- *Goal NEIII: Regulate land disturbances and development to conserve soil resources and protect people, property, and the environment from geologic hazards, such as steep slope, landslide, seismic, flood, or erosion hazard areas.*

One of the primary purposes of the regulations is to protect people and property from flood events by requiring new development and substantial improvements to existing development within flood hazard areas be flood proofed. Floodproofing also provides environmental benefits by helping maintain natural functions of floodplain areas.

- *Goal NEVI: Manage the stormwater system through the preservation of natural systems and structural solutions in order to:*
 - *Protect water quality;*
 - *Provide for public safety and services;*
 - *Preserve and enhance fish and wildlife habitat, and critical areas;*
 - *Maintain a hydrologic balance; and*
 - *Prevent property damage from flooding and erosion.*

Streams and their floodplain areas are usually integrated with the City's stormwater system. The regulations require new development and substantial improvements to existing development within flood hazard areas be flood proofed in order to minimize and prevent property damage from flood events.

- *Policy NE12: Seek to minimize risks to people and property in hazard areas through education and regulation.*

One of the primary purposes of the regulations is to minimize risks to people and property from flood events by requiring development within flood hazard areas to be flood proofed.

- *Policy NE32: Preserve and protect natural surface water storage sites, such as wetlands, aquifers, streams, and water bodies that help regulate surface flows and recharge groundwater.*

The floodplain management regulations help to minimize impact to floodplains and maintain their ability to function as natural water storage sites which provide countless benefits for water quality and habitat.

6a. Staff Report - Floodplain Management Amendments

Pros to Approval of Amendments

At their core purpose, the amendments are intended to incorporate the latest standards to protect the general safety and welfare of people and minimize property damage during a flood event. If approved, the amendments would also maintain the City's membership in the NFIP which allows residents to purchase flood insurance.

The amendments also clarify that habitat assessments are not required for development occurring outside of flood hazard areas and implement standards for the flood risk designations on the FIRMs that will go into effect on August 19, 2020.

Cons to Approval of Amendments

Like with any regulations, there can be an argument made that they do not go far enough, while some may argue they go too far. The amendments mostly include the minimum standards published by FEMA and Ecology as part of the statewide model ordinance. Cities have the option to adopt stricter requirements should they choose when there is a compelling reason to do so.

Likewise, the amendments include requirements for flood proofing structures which has a direct impact on how a property is improved and, in some instances, could increase project costs. However, failing to adopt the amendments would jeopardize the City's membership status in the NFIP.

STAKEHOLDER NOTIFICATION

The preliminary FIRMs were first published in 2013. At that time, outreach to affected properties and stakeholders was conducted as part of a joint effort by FEMA, Ecology, and the City. As part of the outreach in 2013 FEMA facilitated a public meeting (with Ecology and City staff participating) with properties mapped in the coastal hazard areas (V zones).

Subsequent refinements to the preliminary FIRMs in 2014 were again shared with those properties directly affected in the coastal hazard areas.

There are approximately 110 properties mapped with a flood hazard area in the City. Notification to all property owners mapped within flood hazard areas has been provided to inform them of the amendments to the floodplain management regulations and the upcoming effective date for the new FIRMs.

A public hearing (tentatively scheduled for June 4th) will also be held by the Planning Commission at which time stakeholders may submit formal comments on the regulations.

TIMING AND SCHEDULE

The new FIRMs and floodplain management regulations must be adopted prior to August 19, 2020 for the City to remain a member in the NFIP. A public hearing and study session is tentatively scheduled for the June 4th Planning Commission meeting. Following a Commission recommendation, the City Council will need to adopt an ordinance to enact the new FIRMs and regulations.

6a. Staff Report - Floodplain Management Amendments

RECOMMENDATION AND NEXT STEPS

This meeting is for background and discussion. Commissioners should identify if there are specific areas or questions for further focus that were not addressed as part of this report. Staff will present a formal recommendation at the public hearing, tentatively scheduled for June 4th.

ATTACHMENTS

Attachment A – Flood Map Update Infographic

Attachment B – City of Shoreline Floodplain Map

Attachment C – Floodplain Management Amendments (SMC 13.12)

FLOOD MAPS: Know Your Risk and Take Action Against Flooding

WHAT IS A FLOOD MAP?

A Flood Map informs your community about the local flood risk. It helps set minimum floodplain standards so that your community builds safely and resiliently. It determines the cost of flood insurance, which helps property owners to financially protect themselves against flooding. The lower your degree of risk, the lower your flood insurance premium will be. In areas with a high risk of flooding, you might be required to get flood insurance.

To ensure the public knows their flood risk and insurance is priced accurately, FEMA works with communities and property owners at all steps of the process to incorporate the best available data into the nation's Flood Maps. The Flood Maps are developed using the sound science generated by engineering experts, and FEMA always accepts additional, validated flood hazard information from property owners and communities. Through this collaborative process, a community can review, appeal, and contribute to the development of a Flood Map before it is adopted by the community.

HOW IS A FLOOD MAP MADE?

● Identify Area to Map or Re-Map



A watershed is reviewed for development of a new map or to update/re-map the watershed.

Federal Emergency Management Agency (FEMA), state, local and tribal officials develop local partnerships and identify available data, which are used to aid discussions of flood risk in the watershed.



WHY WOULD A COMMUNITY NEED TO "RE-MAP"?



Population Growth & Development



Better Science



Changing Conditions

2 Select the Project Area

A watershed is selected for Discovery based on evaluations of risk, need, availability of elevation data, regional knowledge of issues, and input from the state, community, and other stakeholders.



Watershed

An area or ridge of land that separates waters flowing to different rivers, basins, or seas.

DID YOU KNOW? Flooding occurs in all 50 states with nearly **12.5 MILLION** square miles at risk.

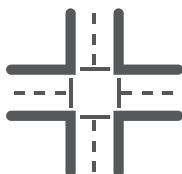


3 Gather Information

FEMA, state, local, and tribal officials collect current and historic flood-related data including:



Hydrology



Infrastructure



Hydraulics



Land use



Existing maps such as:

- ▶ Floodplain
- ▶ Base map
- ▶ Flood Map, if existent

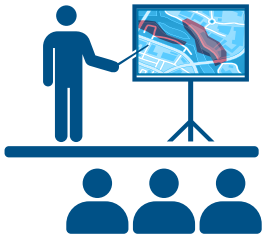
A Flood Map:

- ▶ Also known as a Flood Insurance Rate Map (FIRM)
- ▶ Communicates flood risk to a community and its residents
- ▶ Informs local floodplain management regulations
- ▶ Identifies flood insurance risk zones called Special Flood Hazard Areas (SFHA)
- ▶ Determines insurance rates and the need to purchase insurance through the National Flood Insurance Program (NFIP)
- ▶ Sets minimum floodplain standards and building standards for the community
- ▶ Is modified when there are changes in population growth and development, and improved science including changes in climate and weather patterns

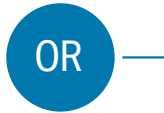


FLOOD RISKS

FEMA, state, local, and tribal officials hold a Discovery meeting with the community to review the analysis of flood risk data; identify and address concerns; and inform residents of the status of the project.



If a Flood Map is needed, a “Kick Off” meeting marks the official start of the risk identification and assessment for the project area.



If the data and research does not support the need for a Flood Map project, the final Discovery Report is updated to reflect that decision. In lieu of a Flood Map, state, local, and tribal officials may opt to undertake mitigation action to reduce the community’s risk of flood damage. Common types of mitigation projects include the elevation of infrastructure, construction of dams, levees or seawalls, or the control of soil erosion.



FEMA, state, local, and tribal officials develop a Risk MAP Project Plan. Risk MAP is a FEMA program that provides communities with flood information and tools to enhance knowledge of local flood risk and help advance mitigation actions. Other resources such as a “Kick-off” Newsletter and Discovery Report are developed at this point in the process, to help keep stakeholders engaged.



4 Hold the Flood Risk Review and Resilience Meetings



If a project is required, FEMA, state, local and tribal officials meet to validate mapping data and supporting research which helps identify areas more prone to flooding and provides spatial orientation to project planners. As well, the mapping data informs Risk MAP products such as the Flood Risk Report, Flood Depth Grids, and Areas of Mitigation Interest.



During the Flood Risk Review Meeting, it may be determined that a Flood Map project is no longer required.

Community leaders host events to inform residents of their community’s current risk of flooding.



The Resilience Meeting is a collaborative discussion with local residents about the risks of flooding. It provides a platform for risk communication and mitigation planning. Resources such as the Resilience Newsletter and the Digital Flood Map Database are created.



If Flood Maps don’t require updating, state, local, and tribal officials may consider ways to reduce flood risk using the newly acquired data.



The project team reviews the Flood Maps and Flood Insurance Study (FIS), making updates where necessary.



5 Issue Preliminary Map

An Open House Meeting is facilitated with the help of a FEMA Consultation Coordination Officer (CCO). The CCO engages stakeholders and the public, explains the potential implications of the preliminary Flood Map, and provides information on the public appeal and comment process.



Community leaders host events to inform residents of their community's current risk of flooding.

The Preliminary Map is uploaded to the Map Service Center, making it easily accessible to the public. The Map Service Center can be found at: <http://www.fema.gov/national-flood-insurance-program/map-service-center>



OR



If new or refined data is available from FEMA, the community or other stakeholders, it can continue to be incorporated at this time.

DID YOU KNOW?

A 6-inch deep creek in the mountains can swell to a 10-foot deep raging river in less than an hour.



6 Facilitate Public Comment and Appeal Period



Stakeholders have 90 days to submit comments and/or appeals.

If a property owner thinks their property has been inadvertently mapped in a Special Flood Hazard Area, they may submit a request to FEMA for a Letter of Map Change (LOMC) which is an official revision/amendment to an effective Flood Map. If the LOMC request is granted, property owners may be eligible for lower flood insurance premiums, or the option to not purchase flood insurance.

DID YOU KNOW?

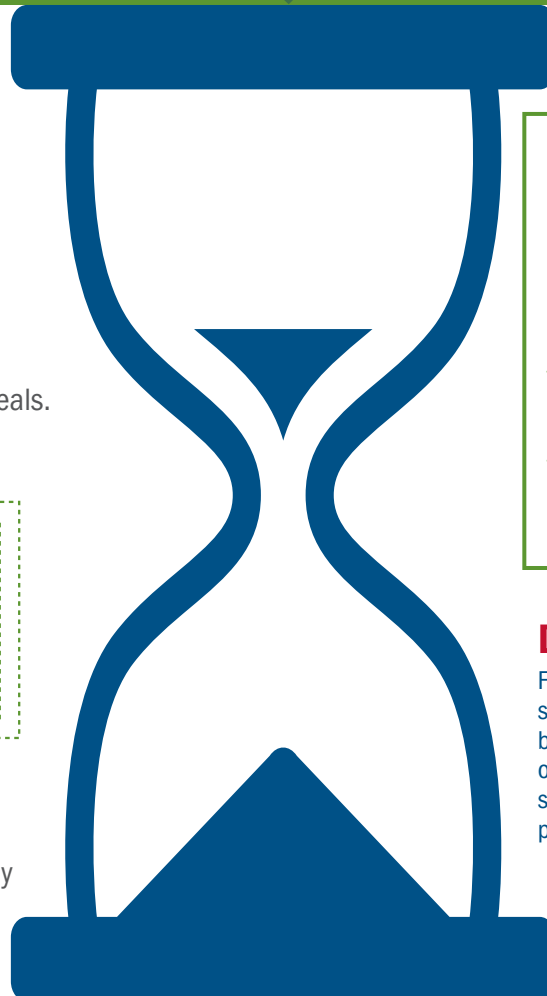
Flood Maps are created from sound science. They inform homeowners, business, and local communities of their risk of flood—potentially saving lives and damage to personal property.



Comments and/or appeals are reviewed and Flood Maps may be updated appropriately.



If needed, a Scientific Resolution Panel may be called upon to independently review appeals.



WE ARE HERE



7 Issue Letter of Final Determination



Once a Flood Map is finalized, community leaders hold a vote to decide to adopt the map. A six month adoption and compliance period begins to allow communities time to adopt or amend its floodplain management regulations to reflect flood hazard information shown on the new Flood Map. Additional mitigations may be taken, including adopting higher floodplain management standards than the required minimum for NFIP participation.



Local insurance and lender training is held.

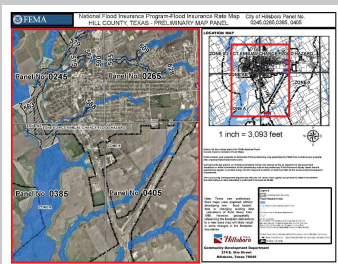
DID YOU KNOW?

Community Rating System (CRS) is a voluntary incentive program that recognizes communities for implementing floodplain management practices that exceed the Federal minimum requirements of the National Flood Insurance Program (NFIP). Policyholders in communities that participate in the CRS program can receive reduced flood insurance premiums for their buildings within the community.

When your community participates in CRS, you can qualify for an insurance premium discount of up to 45% if you live in a high-risk area and up to 10% in moderate- to low-risk areas.

8 Issue Flood Map

Community leaders monitor and track local developments. Letters of Map Revision (LOMRs) are required within 6 months of project completion for projects that change flood hazards in a specific area.



DID YOU KNOW?



People outside of mapped high-risk flood areas file nearly 25% of all National Flood Insurance Program (NFIP) flood insurance claims and receive one-third of Federal Disaster Assistance for flooding. Floods are the most common natural disaster in the U.S. and since standard homeowners insurance doesn't cover flooding, it's important to have protection.

The NFIP was created by Congress in 1968 to help provide a means for property owners to financially protect themselves against flooding. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. To learn more about the NFIP and flood insurance, visit www.floodsmart.gov.

9 Improve Resiliency of Watershed



Final Flood Maps are posted to the online Map Service Center, making them easily accessible to the public. The Map Service Center can be found at: <http://www.fema.gov/national-flood-insurance-program/map-service-center>



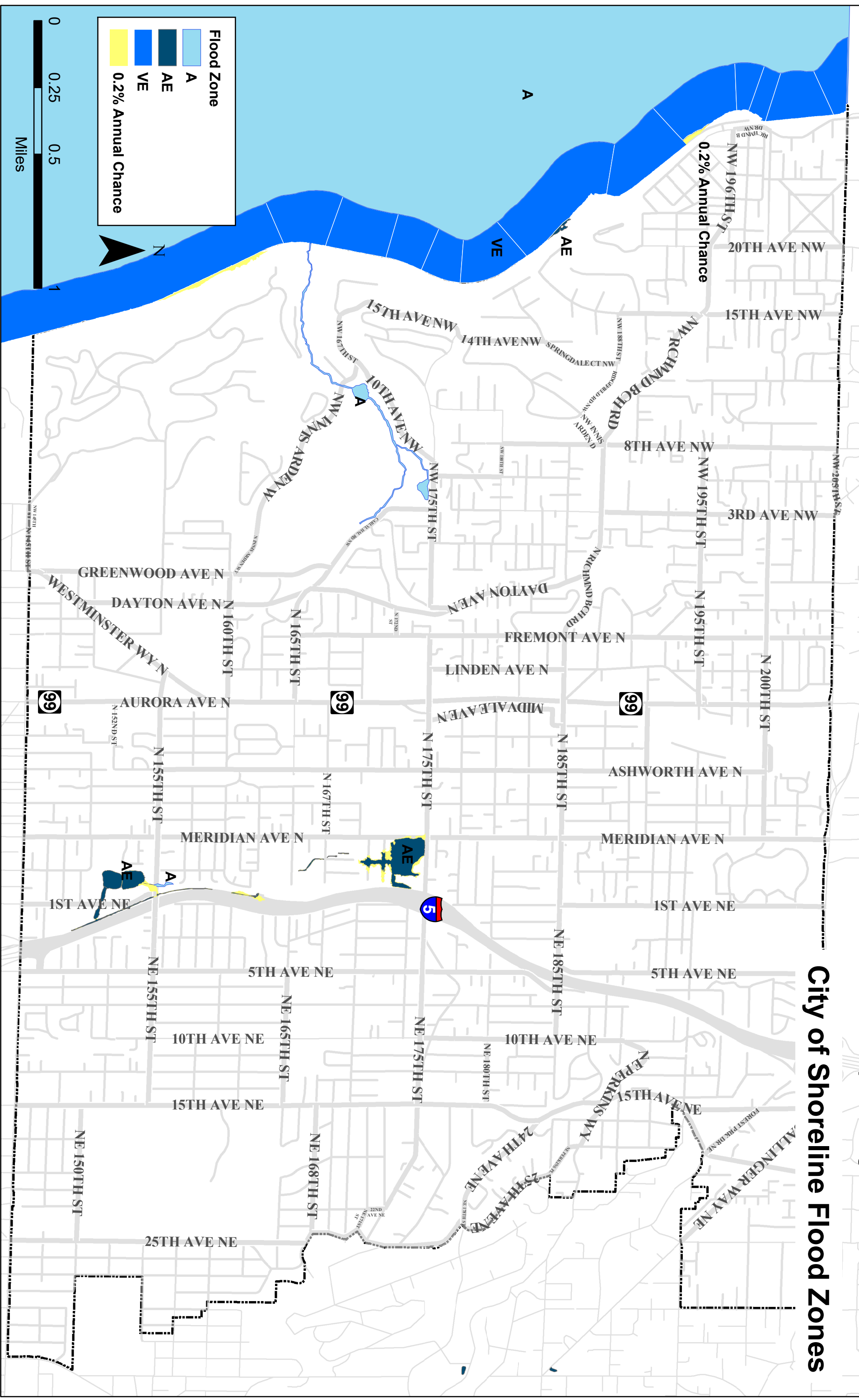
FEMA and state leaders track and log potential future changes to Flood Maps in accordance to the Coordinated Needs Management Strategy (CNMS), which manages and standardizes mapping needs and provides a more comprehensive and efficient approach.



Community implements actions to further reduce the risk of flooding and continues participation in the NFIP.



City of Shoreline Flood Zones



PROPOSED AMENDMENTS:

New text shown with underline

Removed text shown with ~~strikethrough~~

Gray highlighted text is existing, but relocated from another section

Chapter 13.12

FLOODPLAIN MANAGEMENT

Sections:

- 13.12.100 General.
- 13.12.105 Definitions.
- 13.12.200 Floodplain administrator.
- 13.12.300 Regulatory data.
- 13.12.400 General development standards.
- 13.12.500 ~~Structure~~Flood protection standards in all zones.
- 13.12.505 Flood protection standards in A zones.
- 13.12.510 Flood protection standards in V zones.
- 13.12.600 Habitat protection standards.
- 13.12.700 Permits.
- 13.12.800 Administration.

13.12.100 General.

A. Findings of Fact.

1. The city of Shoreline has areas that are subject to periodic inundation and channel migration which result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for protection and relief from flooding and channel migration, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
2. When floodplains and watersheds are developed without appropriate care and precautions, flood heights, frequencies, and velocities increase, increasing threat to humans, damage to property, destruction of natural floodplain functions, and adverse impacts to water quality and habitat.
3. Rivers, streams, lakes, estuarine and marine areas, and their floodplains are major elements of healthy aquatic and riparian habitats and conveyance of floodwaters. If watersheds, rivers, streams, lakes, estuaries, floodplains, and other systems are not viewed holistically as biological and geomorphologic units, serious degradation of habitat and increased flood hazards to people and human development can increase.
4. Over the years, natural processes have evolved that manage floodwaters and channel flows in the most effective and efficient manner. Disruption of these processes by altering land cover, stream channels, wetlands, and other water bodies leads to increased flood hazards, loss of life and property, threats to public health, and loss of habitat.

B. Purpose. It is the purpose of this chapter to promote the public health, safety, and general welfare by managing development in order to:

1. Protect human life, health and property from the dangers of flooding;
2. Minimize the need for publicly funded and hazardous rescue efforts to save those who are isolated by floodwaters;
3. Minimize expenditure of public money for costly flood damage repair and flood control projects;
4. Minimize disruption of commerce and governmental services;
5. Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in the floodplain;
6. Maintain a stable tax base by providing for the sound use of flood prone areas to minimize future flood blight areas;
7. Encourage those who occupy areas subject to flooding and channel migration to assume responsibility for their actions;
8. Qualify the city for participation in the National Flood Insurance Program, thereby giving citizens and businesses the opportunity to purchase flood insurance;
9. Maintain the quality of water in rivers, streams, lakes, estuaries, and marine areas and their floodplains so as to protect public water supplies, areas of the public trust, and wildlife habitat protected by the Endangered Species Act;
10. Retain the natural channel, shoreline, and floodplain creation processes and other natural floodplain functions that protect, create, and maintain habitat for threatened and endangered species;
11. Prevent or minimize loss of hydraulic, geomorphic, and ecological functions of floodplains and stream channels.

C. Applicability. This chapter shall apply to ~~the regulatory floodplain, which is comprised of the special flood hazard area and all protected areas~~ within the jurisdiction of the city of Shoreline as defined in SMC 13.12.105.

13.12.105 Definitions.

Unless specifically defined below, terms or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage and to give this chapter its most reasonable application. The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

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

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

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

“Base flood elevation” means the elevation to which floodwater is anticipated to rise during ~~of the base flood above the datum of the effective flood insurance rate map (FIRM).~~

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

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

“Breakaway wall” means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

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

“Coastal high hazard area” means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. The area is designated on the FIRM as zone V1-30, VE or V.

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

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

“Director” means the planning and community development director or designee.

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

“Elevation certificate” means an administrative tool of the most current version of the FEMA National Flood Insurance Program (NFIP) that can be used to provide elevation information form that documents the elevation of a structure within a special flood hazard area relative to the ground level so as to ensure compliance with this chapter, to determine the proper flood insurance premium rate, and/or to support a request for a Letter of Map Amendment (LOMA) or a Letter of Map Revision based on fill (LOMR-F).

“ESA” means the Endangered Species Act.

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

“FEMA” means Federal Emergency Management Agency.

“FIRM” means flood insurance rate map.

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

“Flood” or “flooding” means:

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

~~A. 1.~~ 1. The overflow of inland or tidal waters; ~~and/or~~

~~B. 2.~~ 2. The unusual and rapid accumulation of runoff of surface waters from any source.

3. Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (A)(2) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.

B. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (A)(1) of this definition.

“Flood elevation study” means an examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation, and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards. Also known as a Flood Insurance Study (FIS).

“Flood insurance rate map (FIRM)” means the official map of a community, on which the Federal Insurance Administrator Emergency Management Agency has delineated both the special flood hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).

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

“Floodplain or flood-prone area” means any land area susceptible to being inundated by water from any source. See “flood or flooding.”

“Floodplain administrator” means the community official designated by title to administer and enforce the floodplain management regulations.

“Flood proofing” means any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate risk of flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents. Flood proofed structures are those that have the structural integrity and design to be impervious to floodwater below the Base Flood Elevation.

“Flood protection elevation (FPE)” means the elevation above the datum of the effective FIRM to which new and substantially improved structures must be protected from flood damage. The flood protection elevation within the limits of the city of Shoreline shall be the base flood elevation plus one foot.

“Floodway” means the channel of a ~~river-stream~~ or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height one foot at any point. Also referred to as “regulatory floodway.”

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

“Habitat Assessment” means a written document that describes a project, identifies and analyzes the project’s impacts to habitat for species discussed in the “Endangered Species Act – Section 7 Consultation Final Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Implementation of the National Flood Insurance Program in the State of Washington, Phase One Document – Puget Sound Region,” and provides an Effects Determination.

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

“Historic structure” means a structure that:

A. Is individually listed in ~~on~~ the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register, ~~the Washington Heritage Register, or the Washington Heritage Barn Register; or~~

B. Has been certified or preliminarily determined by the Secretary of the Interior as contributing to ~~contribute~~ to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; or

C. Is individually listed on a state inventory of historic places in states with historic preservation programs that have been approved by the Secretary of Interior; or

D. Is individually on a local inventory of historic places in communities with historic preservation programs that have been certified either:

1. By an approved state program as determined by the Secretary of Interior, or

2. Directly by the Secretary of Interior in states without approved programs.

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

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

“Lowest floor” means the lowest floor of the lowest enclosed area (including basement or crawl space) of a structure. An unfinished or flood-resistant enclosure, used solely for parking of vehicles, building

access, or storage in an area other than a basement area, is not considered a structure’s lowest floor; provided, that such enclosure is compliant with SMC 13.12.500(B)(~~5~~6), so that there are adequate openings to allow floodwaters into the area.

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

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

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

“Mean sea level” means for purposes of the National Flood Insurance Program, the vertical datum to which Base Flood Elevations shown on a community’s flood insurance rate map are referenced.

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

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

“New construction” means, for the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after March 4, 1997 and includes any subsequent improvements to such structures. For floodplain management purposes, “new construction” means structures for which the “start of construction” commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures ~~the effective date of this chapter.~~

“NMFS” means National Marine Fisheries Service.

“Protected area” means the lands within the special flood hazard area that lie within the boundaries of the floodway, the riparian habitat zone, and the channel migration area. Because of the impact that development can have on flood heights and velocities and habitat, special rules apply in the protected area. The extent of the protected area is identified in SMC 13.12.300(C).

“Recreational vehicle” means a vehicle:

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

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

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

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

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

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

“Structure” means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank that is principally above ground, as well as a manufactured home.

“Substantial damage” means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

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

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

~~A. Before the “start of construction” of the improvement;~~

~~B. Before damage occurred, if the structure has been damaged or is being restored.~~

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

~~Substantial improvement~~ This term includes structures that have incurred “substantial damage,” regardless of the actual repair work performed. This term does not, however, include either:

A. Substantial improvement does not include any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or:

B. Any alteration of a “historic structure,” provided that the alteration will not preclude the structure’s continued designation as a “historic structure.”

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

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

A. Type “S” – Shoreline. Streams that are designated “shorelines of the state,” including marine shorelines.

B. Type “F” – Fish. Streams that are known to be used by fish or meet the physical criteria to be potentially used by fish.

C. Type “Np” – Non-fish perennial streams.

D. Type “Ns” – Non-fish seasonal streams.

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

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

A	SFHA where no base flood elevation is provided.
A#	Numbered A Zones (e.g., A7 or A14), SFHA with a base flood elevation.
AE	SFHA with a base flood elevation.
AO	SFHA subject to inundation by shallow flooding usually resulting from sheet flow on sloping terrain, with average depths between one and three feet. Average flood depths are shown.
AH	SFHA subject to inundation by shallow flooding (usually pond areas) with average depths between one and three feet. Base flood elevations are shown.
B	The area between the SFHA and the 500-year flood of the primary source of flooding. It may also be an area with a local, shallow flooding problem or an area protected by a levee.

C	An area of minimal flood hazard, as above the 500-year flood level of the primary source of flooding. B and C zones may have flooding that does not meet the criteria to be mapped as a special flood hazard area, especially pond and local drainage problems.
D	Area of undetermined but possible flood hazard.
V	The SFHA subject to coastal high-hazard flooding including waves of three feet or greater in height. There are three types of V zones: V, V#, and VE, and they correspond to the A-zone designations.
X	The area outside the mapped SFHA.
X—	The same as a Zone B, above.
Shaded	

13.12.200 Floodplain administrator.

A. Administrator Designation. The planning and community development director is hereby appointed as the floodplain administrator, to administer and implement this chapter by granting or denying floodplain development permit applications in accordance with its provisions. The floodplain administrator may delegate authority to implement these provisions.

B. Administrator Duties. The director’s duties shall include, but shall not be limited to, the following:

1. Ensure that all development activities within the special flood hazard area ~~regulatory floodplain~~ of the jurisdiction of the city meet the requirements of this chapter.
2. Review all floodplain development permits to determine that the permit requirements of this chapter have been satisfied.
3. Review all floodplain development permits to determine if the proposed development is located in the protected area. If located in the protected area, ensure that the provisions of SMC 13.12.600 are met.
4. Review all floodplain development permits to determine that all necessary permits have been obtained from those federal, state, or local governmental agencies from which prior approval is required, including those local, state or federal permits that may be required to assure compliance with the Endangered Species Act and/or other appropriate state or federal laws.
5. Delegate to the building official, or designee, the responsibility to inspect all development projects before, during, and after construction to ensure compliance with all provisions of this chapter, including proper elevation of the structure.
6. Maintain for public inspection all records pertaining to the provisions of this chapter.
7. Submit reports as required for the National Flood Insurance Program.

8. Notify FEMA of any proposed amendments to this chapter or when annexations occur within the Special Flood Hazard Area.

9. Cooperate with state and federal agencies to improve flood and other technical data and notify FEMA of any new data that would revise the FIRM.

~~C. Upon receipt of a permit for a development project within a floodplain, the director shall compare the elevation of the site to the base flood elevation. A development project is not subject to the requirements of this chapter if it is located on land that can be shown to be:~~

- ~~1. Outside the protected area; and~~
- ~~2. Higher than the base flood elevation.~~

~~D. The director shall inform the applicant that the project may still be subject to the flood insurance purchase requirements unless the owner receives a letter of map amendment from FEMA.~~

~~E. The director shall make interpretations where needed, as to the exact location of the boundaries of the regulatory floodplain, the SFHA and the protected area 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 director’s interpretation of the location of the boundary to the hearing examiner according to the procedures described in SMC 20.30.200 through 20.30.270.~~

13.12.300 Regulatory data.

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

~~BA. Special Flood Hazard Area. The special flood hazard area (SFHA) is the area subject to flooding by the base flood and subject to the provisions of this chapter. It is identified by the Federal Emergency Management Agency in a scientific and engineering report entitled “Flood Insurance Study for King County and Incorporated Areas,” dated August 19, 2020-April 19, 2005, and any revisions thereto, with an accompanying Flood Insurance Rate Map (FIRM), and any revisions thereto, hereby adopted by reference and declared to be a part of this chapter. The flood insurance study and the FIRM are on file at 17500 Midvale Avenue N, Shoreline, WA 98133.~~

~~CB. Flood Hazard Data.~~

- 1. The base flood elevation for the SFHAs of the city of Shoreline shall be as delineated on the 100-year flood profiles in the flood insurance study for King County.
- 2. The base flood elevation for each SFHA delineated as a “Zone AH” or “Zone AO” shall be that elevation (or depth) delineated on the flood insurance rate map. Where base flood depths are not available in Zone AO, the base flood elevation shall be considered two feet above the highest grade adjacent to the structure.
- 3. The base flood elevation for all other SFHAs shall be as defined in subsections ~~(CB)~~(6) and ~~(ED)~~(4) of this section.
- 4. The flood protection elevation (FPE) shall be the base flood elevation plus one foot.
- 5. The floodway shall be as delineated on the flood insurance rate map or in accordance with subsections ~~(CB)~~(6) and ~~(ED)~~(4~~5~~) of this section.

6. Where base flood elevation and floodway data have not been provided in special flood hazard areas, the director shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other source.

7. Where elevation data are not available either through the flood insurance study, FIRM, or from another authoritative source, applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness includes use of historical data, high water marks, photographs of past flooding, etc. Failure to elevate at least two feet above the highest adjacent grade in these zones may result in higher insurance rates.

DC. Protected Area. The protected area is ~~comprised~~ composed of those lands within the special flood hazard area that lie within the boundaries of the floodway, the riparian habitat zone, and the channel migration area. The protected area shall not extend beyond the furthest extent of the special flood hazard area.

1. In riverine areas, where a floodway has not been designated in accordance with subsection ~~(CB)~~(5), ~~(CB)~~(6), or ~~(ED)~~(5) of this section, the protected area is comprised of those lands that lie within the boundaries of the riparian habitat zone, the channel migration area, and the SFHA.

2. The riparian habitat zone includes those watercourses and adjacent lands within the SFHA ~~and adjacent land areas~~ that are likely to support aquatic and riparian habitat. The size and location of the riparian habitat zone is dependent on the type of water body. The riparian habitat zone includes the water body and adjacent lands, measured perpendicularly from ordinary high water on both sides of the water body:

- a. Type S – Streams that are designated “shorelines of the state”: 250 feet.
- b. Type F – Fish-bearing streams greater than five feet wide and marine shorelines: 200 feet.
- c. Type F – Streams less than five feet wide and lakes: 150 feet.
- d. Type N – Non-salmonid-bearing perennial and seasonal streams with unstable slopes: 225 feet.
- e. All other Type N – Non-salmonid-bearing perennial and seasonal streams: 150 feet.

3. Channel Migration Area.

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

ED. New Regulatory Data.

1. All requests to revise or change the flood hazard data, including requests for a letter of map revision and a conditional letter of map revision, shall be reviewed by the director.

- a. The director shall not sign the community acknowledgment form for any requests based on filling or other development, unless the applicant for the letter documents that such filling or development complies with this chapter.

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

13.12.400 General development standards.

A. Subdivisions. This section applies to all subdivision proposals, short subdivisions, short plats, planned developments, and new manufactured housing parks, as well as expansions to manufactured housing parks.

1. All proposals shall be consistent with the need to minimize flood damage.
2. The proposed subdivision should have one or more new lots in the ~~regulatory floodplain~~ SFHA set aside for open space use through deed restriction, easement, subdivision covenant, or donation to a public agency.
3. In the ~~regulatory floodplain~~ SFHA outside the protected area, zoning must maintain a low density of floodplain development. The density of the development in the portion of the development outside the ~~regulatory floodplain~~ SFHA may be reallocated from those areas in the SFHA increased to account ~~compensate~~ for land in the ~~regulatory floodplain~~ SFHA preserved as open space in accordance

with SMC 20.70.150(A). The development shall not exceed the densities allowed pursuant to SMC Title 20.

4. If a parcel has a buildable site outside the ~~regulatory~~ floodplain, the parcel shall not be subdivided to create a new lot, tract, or parcel that does not have a buildable site outside the ~~regulatory~~ floodplain. This provision does not apply to lots set aside from development and preserved as open space.
5. All proposals shall have utilities and facilities, such as sewer, gas, electrical, and water systems, located and constructed to minimize or eliminate flood damage.
6. All proposals shall ensure that all subdivisions have at least one access road connected to land outside the ~~regulatory~~ floodplain with the surface of the road at or above the FPE wherever possible.
7. All proposals shall have adequate drainage provided to avoid exposure to water damage and to reduce exposure to flood damage.
8. The final recorded subdivision plat shall include a notice that part of the property is in the SFHA, riparian habitat zone, and/or channel migration area, as appropriate.

B. Site Design.

1. Structures and other development shall be located to avoid flood damage.
 - a. If a lot has a buildable site outside of the ~~regulatory floodplain~~ SFHA, ~~whenever possible all new structures shall be located in the area outside of the SFHA, whenever possible, that area.~~
 - b. If a lot does not have a buildable site outside of the ~~regulatory floodplain~~ SFHA, all new structures, pavement, and other development must be sited in the location that has the least impact on habitat by locating the structures as far from the water body as possible, or by placing the structures on the highest land on the lot.
 - c. ~~All new structures shall be set back at least 15 feet from the protected area.~~
2. All new development shall be designed and located in accordance with the applicable provisions of Chapter 13.10 SMC and to minimize the impact on flood flows, flood storage, water quality, and habitat.
 - a. Stormwater and drainage features shall incorporate low impact development techniques, if technically feasible, that mimic predevelopment hydrologic conditions, such as stormwater infiltration, rain gardens, grass swales, filter strips, disconnected impervious areas, permeable pavement, and vegetative roof systems.
 - b. If the proposed project will create new impervious surfaces so that more than 10 percent of the portion of the lot in the ~~regulatory~~ floodplain is covered by impervious surface, the applicant shall demonstrate that there will be no net increase in the rate and volume of the stormwater surface runoff that leaves the site or that the adverse impact is mitigated, as provided by SMC 13.12.600(F) and (G).
3. The site plan required in SMC 13.12.700(D) shall account for surface drainage to ensure that:
 - a. Existing and new buildings on the site will be protected from stormwater runoff; and
 - b. The project will not divert or increase surface water runoff onto neighboring properties.

4. If the proposed project does not meet the criteria of subsections (B)(1) and (2) of this section, the proponent shall conduct a habitat impact assessment pursuant to SMC 13.12.600(F) and, if necessary, the proponent shall prepare and implement a habitat mitigation plan pursuant to SMC 13.12.600(G).

C. Hazardous Materials.

1. No new development shall create a threat to public health, public safety, or water quality. Chemicals, explosives, gasoline, propane, buoyant materials, animal wastes, fertilizers, flammable liquids, pollutants, or other materials that are hazardous, toxic, or a threat to water quality are prohibited from the regulatory floodplain. This prohibition does not apply to small quantities of these materials kept for normal household use. This prohibition does not apply to the continued operations of existing facilities and structures, reuse of existing facilities and structures, or functionally dependent facilities or structures.

2. If the proposed project cannot meet subsection (C)(1) of this section, then the proponent shall conduct a habitat assessment in accordance with SMC 13.12.600(F) and (G).

D. Critical Facilities.

1. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the ~~regulatory floodplain~~ SFHA.

2. Construction of new critical facilities in the ~~regulatory floodplain~~ SFHA shall be permissible if no feasible alternative site is available, provided:

- a. Critical facilities shall have the lowest floor elevated three feet above the base flood elevation or to the height of the 500-year flood, whichever is higher.
- b. Access to and from the critical facility shall be protected to the elevation of the 500-year flood.
- c. If there are no available data on the 500-year flood, the permit applicants shall develop the needed data in accordance with FEMA mapping guidelines.

~~E. Sand Dunes. Nonnatural alterations of sand dunes within Zones V1-30, VE, and V which would increase potential flood damage are prohibited.~~

13.12.500 Structure Flood protection standards in all zones.

A. In the special flood hazard area, all new structures and substantial improvements shall be protected from flood damage below the flood protection elevation, including:

- 1. Construction or placement of a new structure.
- 2. Reconstruction, rehabilitation, or other improvement that will result in a substantially improved building.
- 3. Repairs to an existing building that has been substantially damaged.
- 4. Placing a manufactured home on a site.
- 5. Placing a recreational vehicle or travel trailer on a site for more than 180 days.

B. General Flood Protection Standards.

~~1. All new structures and substantial improvements shall have the lowest floor, including basement, elevated above the FPE.~~

~~21. The structure shall be aligned parallel with the direction of flood flows where practicable.~~

~~32. The structure shall be anchored to prevent flotation, collapse, or lateral movement of the structure, resulting from hydrodynamic and hydrostatic loads including the effects of buoyancy.~~

~~43. All materials below the FPE shall be resistant to flood damage and firmly anchored to prevent flotation. Materials harmful to aquatic wildlife, such as creosote, are prohibited below the FPE.~~

~~54. Electrical, heating, ventilation, ductwork, plumbing, and air conditioning equipment and other service facilities shall be elevated above the FPE. Water, sewage, electrical, and other utility lines below the FPE shall be constructed to prevent water from entering or accumulating within them during conditions of flooding.~~

~~65. Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, shall be used only for parking, storage, or building access and or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement shall either be certified by a registered professional engineer or licensed architect and/or meet or exceed the following minimum criteria:~~

- ~~a. Include A~~ a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;:-
- ~~b. The bottom of all openings shall be no higher than one foot above grade;:-~~
- ~~c. Openings may be equipped with screens, louvers, or other coverings or devices provided that if they permit the automatic entry and exit of floodwaters;: and~~
- ~~d. A garage attached to a residential structure, constructed with the garage floor slab below the base flood elevation, must be designed to allow for the automatic entry and exist of floodwaters.~~

D. Manufactured Homes. All manufactured homes to be placed or substantially improved on sites shall be:

- 1. Elevated on a permanent foundation in accordance with subsection B of this section; and
- 2. Securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to other applicable anchoring requirements for resisting wind forces.
- 3. In an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood; shall meet the applicable flood protection standards for residential structures.

E. Recreational Vehicles. Recreational vehicles shall comply with SMC 20.40.495. In addition, for floodplain management purposes, recreational vehicles placed on sites shall:

- 1. Be on the site for fewer than 180 consecutive days; or

2. Be fully licensed and ready for highway use, on their wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions; or

3. Be permitted according to SMC 13.12.700 and meet the residential flood protection requirements of this chapter and the anchoring requirements for manufactured homes in SMC 13.12.500(D).

F. Appurtenant Structures. A structure which is on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure and is not used for human habitation may be exempt from the elevation requirement of this chapter, provided:

1. It is used only for parking or storage;

2. It is constructed and placed on the building site so as to offer minimum resistance to the flow of floodwaters;

3. It is anchored to prevent flotation which may result in damage to other structures;

4. All portions of the structure below the FPE must be constructed of flood-resistant materials;

5. Service utilities such as electrical and heating equipment meet the standards of subsections (B)(4) and G of this section;

6. It has openings to allow free flowage of water that meet the criteria in subsection (B)(5) of this section;

7. The structure meets all the other requirements of this chapter, including SMC 13.12.600.

G. Utilities.

1. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems;

2. Water wells shall be located outside the floodway and shall be protected to the FPE;

3. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters;

4. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding. A habitat impact assessment shall be conducted as a condition of approval of an on-site waste disposal system to be located in the special flood hazard area.

13.12.505 Flood protection standards in A zones.

A. Residential Construction.

1. In AE and A1-30 zones or other A zoned areas where the BFE has been determined or can be reasonably obtained, new construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one foot or more above the BFE. Mechanical equipment and utilities shall be waterproofed or elevated at least one foot above the BFE.

2. New construction and substantial improvement of any residential structure in an Unnumbered A zone for which a BFE is not available and cannot be reasonably obtained shall be reasonably safe

from flooding, but in all cases the lowest floor shall be at least two feet above the Highest Adjacent Grade.

B. Nonresidential Construction.

1. New construction and substantial improvement of any commercial, industrial, or other nonresidential structure shall meet the requirements of subsection a or b, below.

a. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall meet all of the following requirements:

i. In AE and A1-30 zones or other A zoned areas where the BFE has been determined or can be reasonably obtained new construction and substantial improvement of any commercial, industrial, or other nonresidential structure shall have the lowest floor, including basement, elevated one foot or more above the BFE, or elevated as required by ASCE 24, whichever is greater. Mechanical equipment and utilities shall be waterproofed or elevated at least one foot above the BFE, or as required by ASCE 24, whichever is greater.

ii. If located in an Unnumbered A zone for which a BFE is not available and cannot be reasonably obtained, the structure shall be reasonably safe from flooding, but in all cases the lowest floor shall be at least two feet above the Highest Adjacent Grade.

b. If the requirements of subsection a are not met, then new construction and substantial improvement of any commercial, industrial, or other nonresidential structure shall meet all of the following requirements:

i. Be dry flood proofed so that below one foot or more above the base flood level the structure is watertight with walls substantially impermeable to the passage of water or dry flood proofed to the elevation required by ASCE 24, whichever is greater;

ii. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

iii. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and review of the structural design, specifications and plans. Such certifications shall be provided to the director as set forth in SMC 13.12.700(E)(1)(a) and 13.12.800(A)(3);

iv. Nonresidential structures that are elevated, not flood proofed, must meet the same standards for space below the lowest floor as described in subsection (B)(2) below;

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

2. As an alternative to elevation, a new or substantial improvement to a nonresidential structure and its attendant utility and sanitary facilities may be dry floodproofed in A zones. The structure must meet the following:

a. The structure is not located in Zones V, V1-30, or VE; and

b. The structure shall be floodproofed so that one foot or more above base flood elevation is watertight with walls substantially impermeable to the passage of water; and

c. The structural components are capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

d. The plans are certified by a registered professional engineer or licensed architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and review of the structural design, specifications and plans. Such certifications shall be provided to the director as set forth in SMC 13.12.700(E)(1)(a) and 13.12.800(A)(3).

13.12.510 Flood protection standards in V zones.

A. Located within the special flood hazard area are Coastal High Hazard Areas, designated as zones V1-30, VE, and/or V. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting the flood protection standards in SMC 13.12.500, the following provisions of this subsection shall also apply:

71. All new construction and substantial improvements in Zones V, V1-30 and VE (V if base flood elevation data is available) on the community's FIRM, new structures and substantial improvements shall be elevated on pilings or columns so that:

~~a. 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.~~

ba. Elevation:

i. For residential construction, the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated at or above least one foot above the flood protection elevation-FPE.

ii. For nonresidential construction, the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated at or above the flood protection elevation or meets the elevation requirements of ASCE 24, whichever is higher; and

eb. The pile or column foundation and structure attached thereto ~~is~~ are 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).

c. 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.

2. Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in zones V1-30, VE, and V on the community's FIRM and whether or not such structures contain a basement. The director shall maintain a record of all such information.

~~§3. Provide that all new construction and substantial improvements within zones V1-30, VE, and V on the community’s FIRM have the space~~ The areas below the lowest floor either that are subject to flooding shall be free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. For the purposes of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no 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:

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

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

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

~~e4. All new construction within zones V1-30, VE, and V on the community’s FIRM~~ The structure or improvement shall be located landward of the reach of mean high tide.

~~f5. The use of fill for structural support of structures within zones V1-30, VE, and V on the community’s FIRM~~ a structure or addition is prohibited.

6. Sand Dunes. Nonnatural alterations of sand dunes within Zones V1-30, VE, and V which would increase potential flood damage are prohibited.

C. Nonresidential Construction:

~~1. New construction and substantial improvement of any commercial, industrial, or other nonresidential structure shall be elevated in accordance with subsection B of this section.~~

~~2. As an alternative to elevation, a new or substantial improvement to a nonresidential structure and its attendant utility and sanitary facilities may be dry floodproofed in A zones. The project must meet the following:~~

~~a. The structure is not located in Zones V, V1-30, or VE; and~~

~~b. The structure shall be floodproofed so that one foot or more above base flood elevation is watertight with walls substantially impermeable to the passage of water; and~~

~~c. The structural components are capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and~~

~~d. The plans are certified by a registered professional engineer or licensed architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural~~

design, specifications and plans. Such certifications shall be provided to the director as set forth in SMC 13.12.700(E)(1)(a) and 13.12.800(A)(3).

D. **Manufactured Homes.** All manufactured homes to be placed or substantially improved on sites shall be:

1. Elevated on a permanent foundation in accordance with subsection B of this section; and
2. Securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement. Methods of anchoring may include, but are not to be limited to, use of over the top or frame ties to ground anchors. This requirement is in addition to other applicable anchoring requirements for resisting wind forces.

E. **Recreational Vehicles.** Recreational vehicles placed on sites shall:

1. Be on the site for fewer than 180 consecutive days; or
2. Be fully licensed and ready for highway use, on their wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions; or
3. Be permitted according to SMC 13.12.700 and meet the requirements of this section.

F. **Appurtenant Structures.** A structure which is on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure and is not used for human habitation may be exempt from the elevation requirement of subsection (B)(1) of this section, provided:

1. It is used only for parking or storage;
2. It is constructed and placed on the building site so as to offer minimum resistance to the flow of floodwaters;
3. It is anchored to prevent flotation which may result in damage to other structures;
4. All portions of the structure below the FPE must be constructed of flood resistant materials;
5. Service utilities such as electrical and heating equipment meet the standards of subsections (B)(5) and G of this section;
6. It has openings to allow free flowage of water that meet the criteria in subsection (B)(6) of this section;
7. The project meets all the other requirements of this chapter, including SMC 13.12.600.

G. **Utilities.**

1. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems;
2. Water wells shall be located outside the floodway and shall be protected to the FPE;
3. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters;

~~4. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding. A habitat impact assessment shall be conducted as a condition of approval of an on-site waste disposal system to be located in the regulatory floodplain.~~

13.12.600 Habitat protection standards.

A. The provisions of this section apply in the ~~regulatory floodplain~~ SFHA. Activities listed herein must meet all federal, state, and city of Shoreline requirements.

B. Native Vegetation.

1. The site plan required in SMC 13.12.700(D) shall show existing native vegetation.
2. In the riparian habitat zone, native vegetation shall be left undisturbed, except as provided in SMC 13.12.700(B)(3) and (C).
3. Outside the riparian habitat zone, removal of native vegetation shall not exceed 35 percent of the surface area of the portion of the site in the regulatory floodplain. Native vegetation in the riparian habitat zone portion of the property can be counted toward this requirement.
4. If the proposed project does not meet the criteria of subsections (B)(2) and (B)(3) of this section, a habitat impact assessment shall be conducted pursuant to subsection F of this section and, if necessary, a habitat mitigation plan shall be prepared and implemented pursuant to subsection G of this section.

C. Floodway Standards.

1. In addition to the other requirements of this chapter, a project to develop in the floodway as delineated pursuant to SMC 13.12.300(~~EB~~)(5), (~~EB~~)(6), or (~~ED~~)(5) shall meet the following criteria:
 - a. The applicant shall provide a certification by a registered professional engineer demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed development would 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. The following exceptions must meet all other requirements in this chapter, including subsection (C)(1)(a) of this section:
 - i. Repairs, reconstruction, or improvements to a residential structure which do not increase the ground floor area, providing the cost of which does not exceed 50 percent of the market value of the structure either (A) before the repair or reconstruction is started, or (B) if the structure has been damaged, and is being restored, before the damage occurred. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by a local code enforcement official and which are the minimum necessary to assure safe living conditions, or to an historic structure, may be excluded from the 50 percent calculations;
 - ii. 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
 - iii. Repairs, reconstruction, or improvements to residential structures identified as historic structures that do not increase the building's dimensions.

2. In riverine special flood hazard areas where a floodway has not been delineated pursuant to SMC 13.12.300(~~CB~~)(5), (~~CB~~)(6), or (~~ED~~)(5), the applicant for a project to develop in the SFHA shall provide a certification by a registered professional engineer demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed development and all other past or future similar developments would not cumulatively result in an increase of flood levels during the occurrence of the base flood discharge by more than 0.01 feet.

3. All new construction and substantial improvements within the floodway shall comply with all applicable flood hazard protection provisions of SMC 13.12.500.B and C.

D. Compensatory Storage. New development shall not reduce the effective flood storage volume of the ~~regulatory~~ floodplain. A development proposal shall provide compensatory storage if grading or other activity eliminates any effective flood storage volume. Compensatory storage shall:

1. Provide equivalent volume at equivalent elevations to that being displaced. For this purpose, "equivalent elevation" means having similar relationship to ordinary high water and to the best available 10-year, 50-year and 100-year water surface profiles;
2. Be hydraulically connected to the source of flooding; and
3. Provide compensatory storage in the same construction season as when the displacement of flood storage volume occurs and before the flood season begins.
4. The newly created storage area shall be graded and vegetated to allow fish access during flood events without creating fish stranding sites.

E. Alteration of Watercourses.

1. In addition to the other requirements in this section, 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 (which requires ESA consultation) and the provisions of the letter are made part of the permit requirements.
2. The director shall notify adjacent communities and the Department of Ecology prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
3. Maintenance shall be provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished. If the maintenance program does not call for cutting of native vegetation, the system shall be oversized at the time of construction to compensate for said vegetation growth or any other natural factor that may need future maintenance.

F. Habitat Impact Assessment. Unless allowed under SMC 13.12.700(B) and (C), a permit application to develop in the ~~regulatory floodplain~~ SFHA shall include an assessment of the impact of the project on federal, state or locally protected species and habitat, water quality and aquatic and riparian habitat. The assessment shall be performed by a qualified professional as defined by SMC 20.20.042 who is approved by the city or under contract to the city. The assessment shall be:

1. A biological evaluation or biological assessment developed per 50 CFR 402.12 to initiate federal interagency consultation under Endangered Species Act Section 7(a)(2); or
2. Documentation that the activity fits within Section 4(d) of the Endangered Species Act; or

3. Documentation that the activity fits within a habitat conservation plan approved pursuant to Section 10 of the Endangered Species Act, where any such assessment has been prepared or is otherwise made available; or

4. An assessment prepared in accordance with *Floodplain Habitat Assessment and Mitigation* ~~Draft~~ *Regional Guidance for the Puget Sound Basin, 2013* ~~4~~, *FEMA Region 10, as amended*. The assessment shall determine if the project would adversely affect:

- a. Species that are federal, state, or local listed as threatened or endangered,
- b. The primary constituent elements for critical habitat, when designated,
- c. Essential fish habitat designated by the National Marine Fisheries Service,
- d. Fish and wildlife habitat conservation areas,
- e. Other protected areas and elements necessary for species conservation.

G. Habitat Mitigation Plan.

1. If the assessment conducted under subsection F of this section concludes the project is expected to have an adverse effect on water quality and/or aquatic or riparian habitat or habitat functions, the applicant shall provide a plan to mitigate those impacts, in accordance with *Floodplain Habitat Assessment and Mitigation* ~~Draft~~ *Regional Guidance for the Puget Sound Basin, 2013* ~~4~~, *FEMA Region 10, as amended*.

- a. If the USFWS or NMFS issues an incidental take permit under Section 10 ESA, or biological opinion under this section, the permit can be considered to qualify as a plan to mitigate those impacts.
- b. If the project is located outside the protected area, the mitigation plan shall include such avoidance, minimization, restoration, or compensation measures so that indirect adverse effects of development in the floodplain (effects to stormwater, riparian vegetation, bank stability, channel migration, hyporheic zones, wetlands, large woody debris, etc.) are mitigated such that equivalent or better habitat protection is provided.
- c. No new stream crossings are allowed outside the protected area unless approval has been obtained as stated in subsection (G)(1)(a) of this section.
- d. If the project is located in the protected area, the mitigation plan shall stipulate avoidance measures as are needed to ensure that there is no adverse effect during any phase of the project.

2. The plan's habitat mitigation activities shall be incorporated into the proposed project. The floodplain development permit shall be based on the redesigned project and its mitigation components.

3. As required in SMC 13.12.700(E), the building official shall not issue a certification of use or a certificate of occupancy until all work identified in the habitat assessment and mitigation plan has been completed or the applicant has provided the necessary assurance that unfinished portions of the project will be completed, in accordance with SMC 13.12.700(E)(2).

13.12.700 Permits.

A. Floodplain Development Permit.

1. For all applicable development within the special flood hazard area ~~regulatory floodplain~~, a floodplain development permit shall be obtained before construction or development occurs.
2. Activities allowed by SMC Title 20, Shoreline Development Code, are allowed, provided they meet all the other requirements of this chapter, including the analysis required in SMC 13.12.600(C) and the habitat impact assessment required under SMC 13.12.600(F), a floodplain development permit is issued, and all other federal, state, and local requirements are met.
3. The site shall be reasonably safe from flooding.
4. Proposed development shall not be located in the floodway. If development is located in the floodway, the encroachment provisions of 13.12.600(C) shall be satisfied.

~~35.~~ A floodplain development permit is a Type A permit administered according to SMC 20.30.040, except that the director shall approve extensions beyond 180 days following complete application and following issuance.

~~46.~~ All activities within the special flood hazard area ~~regulatory floodplain~~ must meet all applicable federal, state, and local requirements.

B. ~~Partial Permit Exemptions from Habitat Impact Assessment.~~ The following activities require a floodplain development permit and are allowed in the special flood hazard area ~~regulatory floodplain~~ without ~~the analysis required in SMC 13.12.600(C) or the habitat impact assessment required under SMC 13.12.600(F), provided~~ ing all other requirements are met, including federal, state, and local requirements:

1. Repair or remodeling of an existing structure, if the repair or remodeling is not a substantial improvement, or a repair of substantial damage.
2. Expansion of an existing structure that is no greater than 10 percent beyond its existing footprint; provided, that the repairs or remodeling is not a substantial improvement, or a repair of substantial damage. This measurement is counted cumulatively from September 22, 2011. If the structure is in the floodway, there shall be no change in the dimensions perpendicular to flow.
3. Activities with the sole purpose of creating, restoring, or enhancing natural functions associated with floodplains, streams, lakes, estuaries, marine areas, habitat, and riparian areas, provided the activities do not include structures, grading, fill, or impervious surfaces.
4. Development of open space and recreational facilities, such as parks and trails, that do not include structures, fill, impervious surfaces or removal of more than five percent of the native vegetation on that portion of the property in the ~~regulatory~~ floodplain.
5. ~~Repair to on-site septic systems provided the ground disturbance is the minimal necessary.~~
6. ~~Alterations in response to emergencies which threaten the public health, safety and welfare or which pose an imminent risk of damage to private property consistent with the requirements of SMC 20.80.030(A).~~

C. Permit Exemptions. Activities that do not meet the definition of “development” in SMC 13.12.105 are allowed in the special flood hazard area ~~regulatory floodplain~~ and do not require a floodplain development permit. The following are examples of activities not considered development or “constructed changes to improved or unimproved real estate”:

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

2. Removal of noxious weeds and replacement of nonnative vegetation with native vegetation provided no earth movement occurs;
3. Removal of hazard trees consistent with the requirements of SMC 20.50.310(A)(1) or SMC 20.80.030(HF);
4. Normal maintenance of structures, such as reroofing and replacing siding, provided such work does not qualify as a substantial improvement;
5. Normal maintenance of above-ground utilities and facilities, such as replacing downed power lines and utility poles;
6. Normal street and road maintenance, including filling potholes, repaving, and installing signs and traffic signals, but not including expansion of paved areas;
7. Normal maintenance of a levee or other flood control facility prescribed in the operations and maintenance plan for the levee or flood control facility are allowed in the special flood hazard area~~regulatory floodplain~~ without need for a floodplain development permit. Normal maintenance does not include repair from flood damage, expansion of the prism, expansion of the face or toe or addition for protection on the face or toe with rock armor;
8. Normal maintenance, operation or repair of publicly improved recreation areas as long as any such activity does not include expansion of uses and/or facilities into a previously unimproved portion of the special flood hazard area~~regulatory floodplain~~ and is consistent with the standards of Chapter 20.80 SMC, Critical Areas, best available science or adaptive management plans as recognized by the city; and
9. Site investigative work and studies necessary for preparing land use applications.

D. Floodplain Development Permit Application. Application for a floodplain development permit shall be made on forms furnished by the director and shall include all of the following that are applicable:

1. Assessment of the impact on those factors that contribute to increased flood hazard and degradation of habitat. If the assessment concludes that the project will cause an adverse effect outside the protected area, the permit will be denied unless the project impacts are mitigated (avoided, rectified or compensated).
2. A description of the extent to which a stream, lake, or other water body, including its shoreline, will be altered or relocated as a result of the proposed development.
3. Documentation that the applicant will apply for all necessary permits required by federal and state law. The application shall include written acknowledgment that the applicant understands that the final certification of use or certificate of occupancy will be issued only if the applicant provides copies of the required federal and state permits or letters stating that a permit is not required. The floodplain permit is not valid if those other permits and approvals are not obtained prior to any ground disturbing work or structural improvements.
4. Acknowledgment by the applicant that representatives of any federal or state unit of government with regulatory authority over the project are authorized to enter upon the property to inspect the development.

5. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures recorded on a current elevation certificate with Section B completed by the Floodplain Administrator;

6. Elevation in relation to mean sea level to which any structure has been flood proofed;

7. Where a structure is to be flood proofed, certification by a registered professional engineer or architect that the flood proofing methods for any nonresidential structure meet required flood proofing standards;

8. Description of the extent to which a watercourse will be altered or relocated as a result of proposed development;

9. Where a structure is proposed in a V, V1-30, or VE zone, a V-zone design certificate;

10. Where a structure is proposed in a floodway, an engineering analysis indicating no rise of the Base Flood Elevation;

11. Site plan(s), meeting city criteria and showing:

- a. The nature, location, dimensions, and elevations of the property in question;
- b. Names and location of all lakes, water bodies, waterways and drainage facilities within 300 feet of the site;
- c. The elevations of the 10-, 50-, 100-, and 500-year floods, where the data are available. Elevation datum shall be the North America Vertical Datum of 1988 (NAVD 1988) with conversions provided as needed;
- d. The boundaries of the ~~regulatory~~ floodplain, SFHA, floodway, riparian habitat zone, and channel migration area, delineated in accordance with SMC 13.12.300;
- e. The proposed drainage system including, but not limited to, storm sewers, overland flow paths, detention facilities and roads;
- f. Existing and proposed structures, fill, pavement and other impervious surfaces, and sites for storage of materials;
- g. All wetlands and the required buffers;
- h. The riparian habitat zone for all development proposals within 300 feet of any stream or shoreline;
- i. Designated fish and wildlife habitat conservation areas, and habitat areas identified for conservation or protection under state, federal or local laws or regulations, for example the Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, Growth Management Act, Shorelines Management Act, or Priority Habitat and Species List;
- j. Existing native vegetation and proposed revegetation.

12. If the proposed project involves grading, excavation, or filling, the site plan shall include proposed post-development terrain at one-foot contour intervals within the SFHA;

713. 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:

- a. The top of bottom floor, including basement, crawl space, or enclosure floor;
- b. The top of the next higher floor;
- c. The bottom of the lowest horizontal structural member (in V zones only);
- d. The top of the slab of an attached garage;
- e. The lowest elevation of machinery or equipment servicing the structure;
- f. The lowest adjacent (finished) grade next to structure;
- g. The highest adjacent (finished) grade next to structure;
- h. The lowest adjacent grade at the lowest elevation of a deck or stairs, including structural support.

814. If the proposed project includes a new structure, substantial improvement, or repairs to a substantially damaged nonresidential structure that will be 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 be dry floodproofed, along with a certification by a registered professional engineer or licensed architect that the dry floodproofing methods meet the appropriate floodproofing criteria in SMC 13.12.505 and ~~13.12.510(B)~~;

915. The proposed project must be designed and located so that new structural flood protection is not needed; and

16. Any other such information that may be reasonably required by the director in order to review the application.

E. Certificate of Occupancy.

1. The building official shall not issue a certificate of occupancy or final building permit for a new or substantially improved structure or an addition until:

- a. The permittee provides a properly completed elevation or floodproofing certificate showing finished construction data as required by SMC 13.12.800(A);
- b. All work identified in a mitigation plan required by SMC 13.12.600(F) and (G) has been completed according to the plan's schedule;
- c. The permittee provides copies of all required federal, state, and local permits noted in the permit application per subsection (D)(3) of this section;
- d. All other provisions of this chapter have been met.

2. The director may accept a financial guarantee, in an amount determined by the director, to ensure completion of portions of the project following issuance of the certification of use or certificate of occupancy.

13.12.800 Administration.

A. Records. The director shall retain the following records:

1. All records pertaining to the provisions of this chapter.
2. Where base flood elevation data have been obtained pursuant to SMC 13.12.300(~~CB~~) and (~~ED~~), the director shall obtain, record, and maintain the actual “finished construction” elevations for the locations listed in SMC 13.12.700(D)(~~713~~). This information shall be recorded on a current FEMA elevation certificate (FEMA Form 81-31), signed, and sealed by a professional land surveyor, currently licensed in the state of Washington.
3. For all new or substantially improved dry floodproofed nonresidential structures, where base flood elevation data have been obtained pursuant to SMC 13.12.300(~~CB~~) and (~~ED~~), the director shall obtain, record and maintain the elevation (in relation to the datum of the effective FIRM) to which the structure was floodproofed. This information shall be recorded on a current FEMA floodproofing certificate (FEMA Form 81-65), by a professional engineer, currently licensed in the state of Washington.

B. Appeals. Any requirement, decision, or determination made by the director in the enforcement or administration of this chapter is appealable according to the procedures described in SMC 20.30.200 through 20.30.270.

C. Floodplain Variance.

1. Each floodplain variance pertains to a physical piece of property. The variance is not personal in nature and is not based on the inhabitants or their health, economic, or financial circumstances.
2. The director shall review and issue variances from the requirements of this chapter.
3. Upon consideration of the following criteria and the purposes of this chapter, the director may attach such conditions to the granting of the floodplain variance as deemed necessary to further the purposes of this chapter.
4. Criteria.
 - a. No floodplain variance shall be granted to the requirements of this chapter unless the applicant demonstrates that upon a showing of good and sufficient cause:
 - i. The development project cannot be located outside the ~~regulatory floodplain~~ SFHA;
 - ii. An exceptional hardship would result if the variance were not granted;
 - iii. The relief requested is the minimum necessary;
 - iv. The applicant’s circumstances are unique and do not represent a problem faced by other area properties;
 - v. If the project is within a designated floodway, no increase in flood levels during the base flood discharge would result;
 - vi. The project will not adversely affect features or quality of habitat supporting local, state or federally protected fish or wildlife;

- vii. There will be no additional threat to public health, safety, beneficial stream or water uses and functions, or creation of a nuisance;
 - viii. There will be no additional public expense for flood protection, lost environmental functions, rescue or relief operations, policing, or repairs to streambeds, shorelines, banks, roads, utilities, or other public facilities; and
 - ix. All requirements of other permitting agencies will still be met, including the ESA.
- b. In reviewing applications for a floodplain variance, the director shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and:
- i. The danger to life and property due to flooding or erosion damage;
 - ii. The danger that materials may be swept onto other lands to the injury of others;
 - iii. The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - iv. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site;
 - v. The susceptibility of the proposed facility and its contents to flood or erosion damage and the effect of such damage on the individual owner;
 - vi. The availability of alternative locations for the proposed use which are not subject to flooding or channel migration and are not in designated fish and wildlife habitat conservation areas;
 - vii. The relationship of the proposed use to the comprehensive plan, growth management regulations, critical area regulations, the shoreline management program, and floodplain management program for that area;
 - viii. The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges;
 - ix. The potential of the proposed development project to destroy or adversely affect a fish and wildlife habitat conservation area or create an adverse effect to federal, state or locally protected species or habitat; and
 - x. The potential of the proposed development project to affect, or be affected by, channel migration.
- c. A floodplain variance requested in connection with restoration of an historic site, building, or structure may be granted using the following criteria:
- i. The repair or rehabilitation is the minimum necessary to preserve the historic character and design of the site, building or structure; and
 - ii. The repair or rehabilitation will not result in the site, building, or structure losing its historic designation.
- d. A floodplain variance may be requested for new construction, substantial improvements, and other development necessary for the conduct of functionally dependent uses provided:

- i. There is good and sufficient cause for providing relief;
 - ii. The variance does not cause a rise in the 100-year flood level within the regulatory floodway;
- e. A floodplain variance to the provisions of SMC 13.12.500 through 13.12.510 may be issued for a structure on a small or irregularly shaped lot contiguous to and surrounded by lots with existing structures constructed below the FPE, providing the other variance criteria are met. The applicant for such a variance shall be notified, in writing, that the structure (i) will be subject to increased premium rates for flood insurance up to amounts as high as \$25.00 for \$100.00 of insurance coverage and (ii) such construction below the FPE increases risks to life and property. Such notification shall be maintained with a record of all variance actions.

D. Violations. Any activity or action caused or permitted to exist in violation of this chapter is a threat to public health, safety, and welfare, and is declared and deemed a public nuisance. Such violations are subject to enforcement under SMC 20.30.720 through 20.30.790. No development shall be undertaken or placed in the areas regulated by this chapter without full compliance with the terms of this chapter and other applicable regulations of the city of Shoreline.

E. Interpretation. In the interpretation and application of this chapter, all provisions shall be:

1. Considered as minimum requirements;
2. Liberally construed in favor of the city; and
3. Deemed neither to limit nor to repeal any other powers granted under state statutes.

F. Abrogation and Greater Restrictions. This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, deed restrictions, codes, or ordinances. However, where this chapter and another code, ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

G. Warning and Disclaimer of Liability. The degree of property and habitat protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods and movement of channels outside of mapped channel migration areas can and will occur on rare occasions. Flood heights may be increased by nonnatural or natural causes. This chapter does not imply that land outside the regulated areas or development permitted within such areas will be free from flood or erosion damage. This chapter shall not create liability on the part of city of Shoreline or any officer or employee thereof for any damage to property or habitat that results from reliance on this chapter or any administrative decision lawfully made hereunder.

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