



Floodplain Review

Department of Public Works

Development Engineering Program

1300 Franklin Street

Vancouver, WA 98660

(360) 397-6118 ext. 4559

www.clark.wa.gov/comdev

email: engsrv@clark.wa.gov



Floodplain Review

Handout #28 Revised 070109

What is the purpose of a floodplain review?

The Floodplain review is intended to minimize public and private losses due to flooding by:

- Protecting life and property;
- Maintaining health and safety;
- Minimizing impacts to floodplain, water storage capacity and connectivity;
- Minimizing disruption of commerce and governmental services;
- Minimizing public expenditures for flood protection and relief;
- Minimizing damage to public facilities and utilities;
- Maintaining a stable tax base;
- Ensuring that potential buyers are notified that their property is in a flood hazard area; and,
- Ensuring that those who occupy areas of flood hazard assume responsibility for their actions.

Flood losses are caused by the cumulative effect of obstructions in special flood hazards areas which increase flood heights and velocities, and which, when not adequately anchored, can damage structures in other areas. Structures that are inadequately flood-proofed, elevated, or otherwise protected from flood damage also contribute to the flood loss.

How can regulations help prevent flood losses?

The county's floodplain regulations help prevent losses due to flooding by:

- Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in increased erosion, or flood heights and velocities;
- Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- Controlling the alteration of natural flood plains, stream channels, and natural protective barriers, which accommodate or channel floodwaters;
- Controlling filling, grading, dredging, and other development which may increase flood damage;
- Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

How do I find out if a piece of property is in a flood hazard area?

Areas of Special Flood Hazard are identified in a report issued by the Federal Emergency Management Agency (FEMA), titled "The Flood Insurance Study for Clark County" (effective August 2, 1982 and revised July 19, 2000). The mapped floodplains for the county are delineated on maps that accompany the FEMA report. This report and floodplain maps are available for review at the Department of Public Works. The approximate floodplain maps can also be viewed at the Assessment and GIS Web Page under GIS (i.e., Geographic Information System).

In areas where the Floodway or Floodway Fringe has not been studied or delineated by FEMA, the floodway boundaries must be determined by the use of other base flood data. (Note: A Shoreline Management Permit may be required for development proposed within stream corridors. See “Handout #33 Shoreline Management” for more information.)

What is the difference between the “Floodway” and “Floodplain?”

The “Floodway” includes the channel of a river or other watercourse and adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more that one (1) foot.

The “Floodplain” or “Floodway Fringe” is the land area between the floodway and the limits of the one hundred (100)-year floodplain. The floodplain elevation is also known as the base flood elevation.

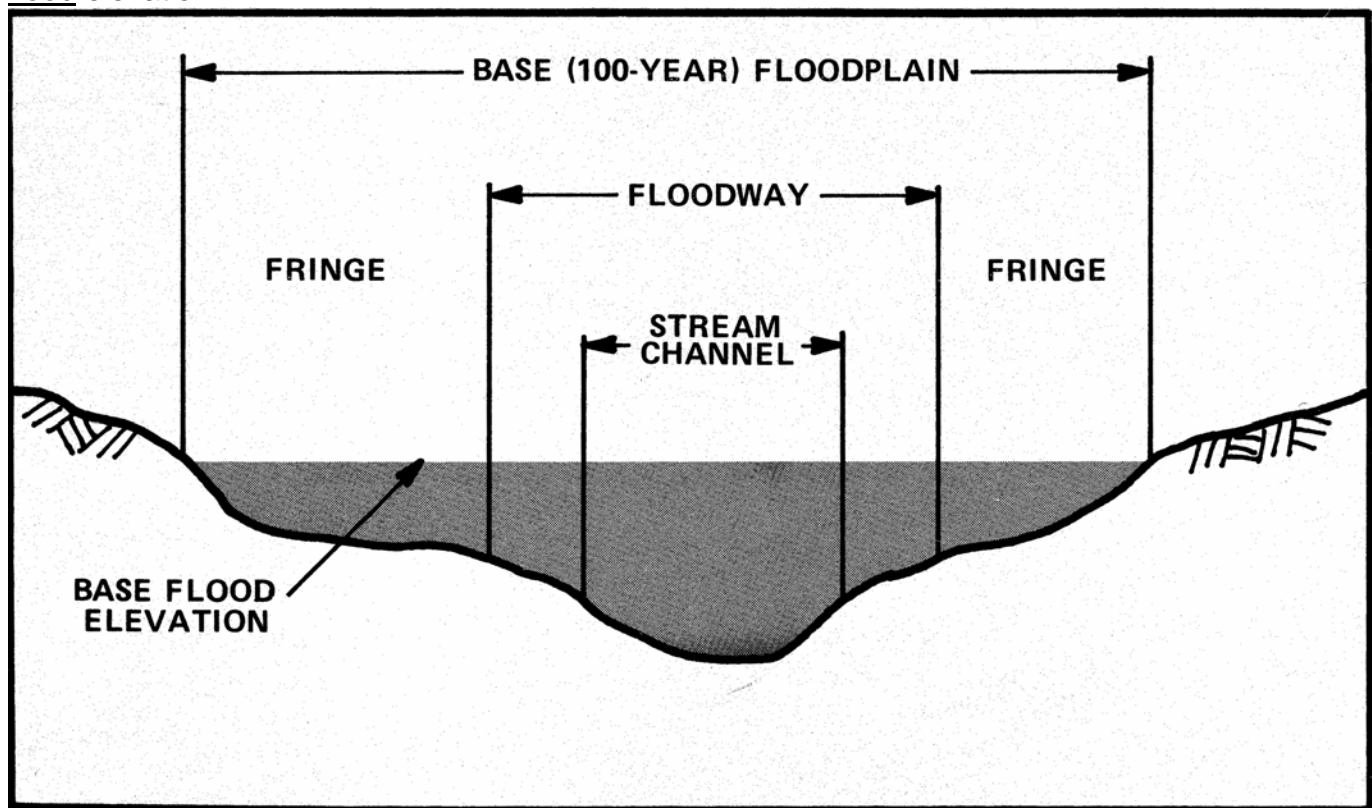


DIAGRAM (CROSS SECTION OF RIVER)

If I don't plan on building in the floodway or floodplain, do I have to have a Floodplain Review?

No, provided building plans and development plans clearly show the limits of the floodplain and declare that no construction will take place within the floodplain. If you propose to divide your property or otherwise develop the land for non-single family uses, a floodplain determination will be required.

Can structures be placed in the floodway?

Construction or reconstruction of residential structures is prohibited in the floodway, with the following exceptions:

- Repairs, reconstruction, or improvements to a structure which do not increase the ground floor area;
- Repairs, reconstruction, or improvements to a structure where the cost does not exceed fifty percent (50%) of the market value of the structure, either:
 - Before the repair, reconstruction or improvement is started, or
 - If the structure has been damaged, and is being restored, before the damage occurred; PROVIDED, that 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 code enforcement official or designee and are the minimum necessary to assure safe living conditions or to structures identified as historic places shall not be included in the 50% determination; and
- Travel trailers and recreational vehicles may be allowed on a seasonal basis between May 1 and October 1 of the same year. Wheels and hauling apparatus shall remain on travel trailers, and these vehicles shall be sited without barriers to their immediate removal in the event of impending flood hazard.
- Parks, recreation, agriculture and other similar open space uses allowed in the underlying zoning district are permitted outright in the floodway and floodplain areas, PROVIDED no structures, earth fills, or storage of equipment is involved. However, other reviews, such as for habitat and wetland permits, may be required.

If I want to build in the floodplain, what are the standards?

In all areas of special flood hazards, the following standards shall be met:

General Standards

1. Anchoring
 - All new construction and substantial improvements shall be sufficiently anchored to prevent flotation, collapse, or lateral movement of the structure.
 - All manufactured homes must likewise be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors, and additional techniques referenced in FEMA’s “Manufactured Home Installation in Flood Hazard Areas” guidebook.
2. Construction Materials and Methods
 - All new structures and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
 - All new structures and substantial improvements shall be constructed using methods and practices that minimize flood damage.
 - Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
3. Utilities
 - All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;

- New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and prevent discharge from the systems into floodwaters; and
- On-site waste disposal systems shall be designed to avoid impairment to them or contamination from them during flooding.

4. Subdivision Proposals

- All subdivision proposals shall be consistent with the need to minimize flood damage;
- All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;
- All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage. Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be provided by the applicant for subdivision proposals and other proposed development which contain at least fifty (50) lots or five (5) acres (whichever is less).

5. Review of Building Permits

Where elevation data is not available either through the Flood Insurance Study or from another authoritative source (Section 40.420.303(C-2)), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness shall be a judgment of the Director of Public Works who shall consider, where available, historical data, high water marks, photographs of past flooding, etc. Failure to elevate the lowest floor at least two feet above average grade in these zones may result in higher insurance rates.

Specific Standards

In all areas of special flood hazards where base flood elevation data has been provided as set forth in Section 40.420.010(B), "Basis for Establishing the Areas of Special Flood Hazard," or Section 40.420.030(C-2), "Use of Other Base Flood Data," the following provisions are required:

1. Residential Construction

- New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to at least one (1) foot above base flood elevation.
- Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood waters. Designs for meeting this requirement must either be certified by a registered professional engineer or must meet or exceed the following minimum criteria:
 - A minimum of two (2) 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;
 - The bottom of all openings shall be no higher than one foot above grade;
 - Openings may be equipped with screens, louvers, or other coverings or devices, PROVIDED that they permit the automatic entry and exit of floodwaters.

2. Nonresidential Construction

New construction and substantial improvement of any commercial, industrial, or other nonresidential structure shall either have the lowest floor, including basement, elevated to

at least one (1) foot above base flood elevation; or, together with attendant utility facilities, shall:

- Be flood-proofed so that one foot (1) above the base flood level elevation and below the structure is watertight with walls substantially impermeable to the passage of water;
- Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
- Be certified by a registered professional engineer that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in Section 40.420.030(B-3);
- Nonresidential structures that are elevated, not flood-proofed, must meet the same standards for space below the lowest floor as described in Section 40.420.020(B-1-b); and
- Applicants flood-proofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one (1) foot below the flood-proofed level (e.g., a building constructed to the base flood level will be rated as one foot below that level).

3. Manufactured Homes

All manufactured homes to be placed or substantially improved within a one-hundred-year floodplain shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is at least one (1) foot above the base flood elevation. Also, they shall be securely anchored to an adequately anchored foundation system in accordance with the provisions of subsection 40.420.020(A-1-b)

4. Travel Trailers and Recreational Vehicles

- Travel trailers and recreational vehicles may be allowed in the floodway on a seasonal basis between May 1 and October 1 of the same year and floodway fringe areas on a temporary basis, for fewer than 180 consecutive days.
- Wheels and hauling apparatus shall remain on travel trailers and recreational vehicles, and these vehicles shall be sited without barriers to allow their immediate removal in the event of an impending flood.
- Be fully licensed and ready for highway use, on it's wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices and have no permanently attached additions.

5. Critical Facilities

- Construction of new critical facilities shall be, to the extent possible, located outside the limits of the Special Flood Hazard Area (SFHA). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of base flood elevation shall be provided to all critical facilities to the extent possible.

- Floodways. Located within the areas of special flood hazard established in Section 40.420.010(B-1) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:
 - There is a prohibition on encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer is provided demonstrating through hydrologic and hydrologic analysis performed in accordance with standard engineering practice that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
 - If it has been adequately demonstrated that the encroachment will not result in increased flood levels, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this section.

Can I apply for a variance from these standards?

Variance requests may be considered based upon the following conditions

1. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot on one-half (1/2) acre, or less in size, contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing items (a) to (k) in Section 40.420.030(E) have been fully considered. As the lot size increases beyond the one-half (1/2) acre, the technical justification required for issuing the variance increases.
2. Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this section.
3. Variances shall only be issued upon a showing of good and sufficient cause that:
 - a. The proposal has been designed to reasonably minimize the impact on the floodplain and its functions; and
 - b. No increase in flood levels during the base flood discharge would result; and
 - c. The variance is the minimum necessary, considering the flood hazard, to afford relief; and
 - d. Failure to grant the variance would result in exceptional hardship to the applicant; and
 - e. The hardship is not created by the property owner or its immediate predecessor in title; and
 - f. The granting of a variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in Section 40.420.030(E), nor conflict with existing local laws or ordinances.
4. Variances, as interpreted in the National Flood Insurance Program, are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from the flood elevations should be quite rare.

5. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of flood-proofing than watertight or dry-flood-proofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except subdivision 40.420.030(D-1), and otherwise complies with subdivisions 40.420.020(A-1) and (A-2) of the "general standards."

Is a pre-application conference required?

No, unless a SEPA review is required.

What is the application and review process, and when will I receive a decision?

The first step is to complete a State Environmental Policy Act (SEPA) environmental checklist. The SEPA Review Application Form and Environmental Checklist is available at the Customer Service Center, 1300 Franklin Street, Vancouver, Washington.

The next step is to submit a completed Floodplain Application Form, review fees and a copy of the submittal requirements to the Customer Service Center. Within 30 calendar days after the date the application is determined Fully Complete, staff will issue a written SEPA determination and decision to approve, approve with conditions or deny the floodplain application. Within 7 calendar days of its issuance, the decision will be mailed to the applicant.

What is a SEPA determination?

The State Environmental Policy Act (SEPA) requires that a review of the potential environmental impacts of the proposal be conducted. County staff and interested agencies will review the floodplain application to determine its compliance with applicable Federal, State and County Code. Through this process, a determination will be made as to whether the impacts will be considered non-significance (DNS), mitigated non-significance (MDNS), or significance (DS). For a DNS or MDNS determination, an analysis will be incorporated within the Staff Report referenced below. If a DS determination is made, the applicant is required to prepare an Environmental Impact Statement (EIS) prior to the County considering the proposed activity. The SEPA determination is published in the "Columbian" Newspaper.

If the proposed development is located within an isolated floodplain that is not within a designated Shoreline area, and the abutting stream flow is less than 5 cubic feet per second (c.f.s.), a SEPA review is not required.

Note: This handout is not a substitute for county code. For more detailed information, please refer to Clark County Code, Chapters 40.420 and 40.0100.

FLOODPLAIN REVIEW APPLICATION FORM



PROJECT NAME:	
DESCRIPTION AND PURPOSE FOR FLOODPLAIN REVIEW:	
DEVELOPMENT TYPE: <input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Mixed Use	
SCOPE OF WORK: <input type="checkbox"/> Inquiry <input type="checkbox"/> Permit	
TOTAL ACREAGE:	
APPLICANT NAME:	Address:
E-mail Address:	Phone:
PROPERTY OWNER (list multiple owners on a separate sheet):	
CONTACT PERSON (list if not same as APPLICANT):	
Name:	Address:
E-Mail Address:	Phone:
LOCATION OF PROJECT:	
Site Address:	Serial Number(s):

AUTHORIZATION

The undersigned hereby certifies that this application has been made with the consent of the lawful property owner(s) and that all information submitted with this application is complete and correct. False statements, errors, and/or omissions may be sufficient cause for denial of the request. This application gives consent to the County to enter the properties listed above.

The granting of this permit does not presume to give authority to violate or cancel the provision of any other state or local law regulating this type of work requiring approval or permit.

If the erosion control measures detailed on the approved plans are not complied with, any permits issued will be revoked.

If the erosion control measures as approved are not adequate, additional plans and controls will be required. Also, a stop work order may be issued.

I understand that this permit is not valid until all fees are paid.

If the permit expires prior to completion of proposed grading activities, a new application and fees will be required. *Permits may be extended prior to expiration of the initial term with payment of applicable fees.*

Authorized Signature

Date

Fees must be paid prior to application processing.



DEVELOPMENT ENGINEERING FLOODPLAIN REVIEW SUBMITTAL REQUIREMENTS

The following checklist identifies information to be included with the application. All submittals that are determined **not** "Counter Complete" will be **returned** to the applicant for correction and resubmittal. Submittals determined to be "Counter Complete" will be routed to Development Engineering Program for review.

FLOOD PLAIN INQUIRY	FLOOD PLAIN REVIEW
<ul style="list-style-type: none"> <input type="checkbox"/> Application Fee <input type="checkbox"/> Application Form <input type="checkbox"/> One (1) Set of Proposed Plan to include: <ul style="list-style-type: none"> <input type="checkbox"/> Site boundary, property lines and dimensions <input type="checkbox"/> Ordinary high water mark (line of permanent vegetation) <input type="checkbox"/> Proposed Final Placement of Structures 	<ul style="list-style-type: none"> <input type="checkbox"/> Application Fee <input type="checkbox"/> Application Form <input type="checkbox"/> Two (2) Sets of Proposed Plan to include but not limited to: <ul style="list-style-type: none"> <input type="checkbox"/> North arrow, scale and date <input type="checkbox"/> Site boundary, property lines and dimensions <input type="checkbox"/> Ordinary high water mark (line of permanent vegetation) <input type="checkbox"/> Typical cross-section or section showing the following: existing ground elevation; proposed ground elevations; elevation, in relation to mean sea level, of the lowest floor (including basement) of all structures; elevations, in relation to mean sea level, to which any structure has been flood proofed; description of the extent to which watercourse will be latered to relocated as a result of proposed development