

What are the general floodplain regulations?

This guide summarizes the local and Federal regulations to help contractors understand what is and is not allowed within the floodplain.

Land within the floodplain may be used for other purposes as long as:

- The primary functions of conveyance and flood storage are preserved;
- The use is not a detriment to water quality; and
- The use is consistent with the local Land Development Code.

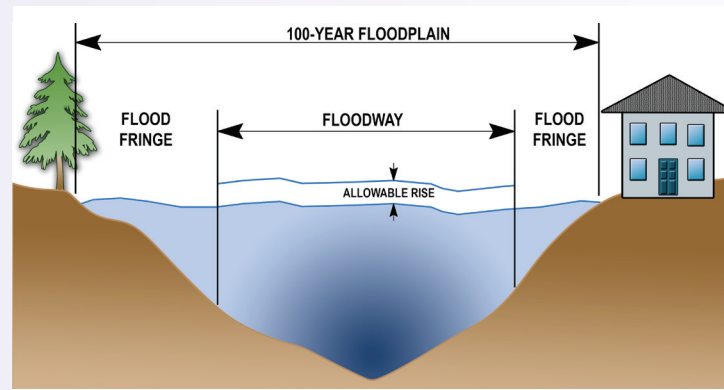
In addition, any improvement with the potential to cause the following is prohibited:

- Obstruction of the flood water flow so that the floodplain is altered in elevation (unless approved through a floodplain modification study);
- Reduction in the carrying capacity of the channel (unless approved through a floodplain modification study);
- Potential for material, equipment, or facilities to become dislodged or displaced and to be deposited downstream causing culvert or bridge blockage, channel degradation, or damages to other properties; and
- Potential for negatively impacting water quality.

The local floodplain administrator makes the final determination as to whether a particular use or proposed improvement conforms with the local floodplain regulations and management program.

What does this mean to me?

When planning, designing, or constructing improvements within a regulated floodplain, you should first contact your local floodplain administrator to discuss the nature of the improvements and whether those improvements are allowed by the floodplain regulations. In cases where improvements are allowable, a floodplain development permit will likely be required to explain the improvements and to make the local government aware that some activity is occurring within the floodplain (for additional information, see the Floodplain Development Permit section within this pocket guide). The proposed improvements may also require other permits (for additional information see the Grading, Erosion, and Sediment Control [GESC] Permit and Additional Permits sections within this guide).



What is a floodplain?

A floodplain is composed of two primary zones: the floodway and the flood fringe. The floodway is the portion of the floodplain with the greatest depths and velocities and is the area of highest risk. Communities must regulate development in the floodway to ensure that there are no increases in upstream or downstream flood elevations. Areas of flooding outside of the floodway are called the flood fringe. Contact your local floodplain administrator for the flood fringe development requirements. Below are a few key guidelines regarding the floodway and flood fringe.

- With regard to work in the floodplain, development means any project not specifically designed and constructed as a flood control channel improvement or stabilization project.
- The floodway must be preserved to allow the floodwater to pass through the river or stream without being obstructed. The floodway is shown as the crosshatched areas on the Flood Insurance Rate Map (FIRM) (See "Is my project in a regulated floodplain?" for additional details). No private development is allowed in the floodway.
- Some improvements are allowed in the flood fringe, but must meet the local and Federal floodplain regulation requirements. This pocket guide provides information regarding what is and is not allowed in the flood fringe.
- If any proposed improvements cause the boundaries of the floodplain or floodway to change, the owner may have to submit information to the Federal Emergency Management Agency (FEMA) in the form of a request for a Conditional Letter of Map Change (CLOMC). This application must be prepared by a professional engineer. FEMA's approval must be obtained before permitting and construction can begin. Following completion of improvements, the owner must also submit an application requesting a Letter of Map Change (LOMC) to FEMA to revise or amend the FIRMs.
- The local floodplain administrator can provide guidance on whether a CLOMC or LOMC is required.



Where can I find additional information?

Detailed floodplain regulations for Arapahoe County and the City of Centennial can be found on SEMSWA's website by clicking on the Floodplain Regulations & Permitting link. At any time, you can contact your local floodplain administrator for direction concerning your proposed improvements.

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CONSTRUCTION REQUIREMENTS FOR WORK IN FLOODPLAINS

A pocket guide for contractors, landscape architects, engineers and realtors



SEMSWA EDUCATION SERIES

Is my project in a regulated floodplain?

As a contractor or professional, it is your responsibility to know whether your project is located within a regulated floodplain. To determine if you are in the floodplain you can visit FEMA's flood map website. This website provides FIRMs for all National Flood Insurance Program communities throughout the country. Access to these maps is available via the internet at: <http://msc.fema.gov/>.

These maps may also be obtained by contacting the local floodplain administrator.

FIRMs show the boundaries of Special Flood Hazard Areas (SFHAs), or the high-risk flood zones, within a community. SFHAs are flood zones identified according to their varying level of risk. Areas of high risk on riverine systems (rivers, streams, creeks, gulches, etc.) are summarized in the table below. In general, if your project is located in any "A" Zone, the guidelines of this pocket guide apply to you. If you are located in a shaded Zone "X" or a Zone "X", then only the standard local improvement guidelines, such as building permits, local Home Owners Association guidelines, etc. would apply to your improvements.

Flood Hazard Zones	
Zone	Description
High-risk zones: A, AE, AH, AO, AR	Areas with a 1%-annual-chance flood or a 26% chance of flooding over the life of a 30-year mortgage. Flood insurance is required in these areas.
Moderate and low risk zones: X, shaded X, B	Areas outside the 1%-annual-chance floodplain, areas of sheet flow flooding where average depths are less than 1 foot, or areas protected from the 1%-annual-chance flood by levees. No Base Flood Elevations (BFE) or depths are shown within this zone. BFE is the computed elevation to which floodwater is anticipated to rise during the base flood. Insurance purchase is not required in these zones but highly recommended.
Non-FEMA regulated floodplains	Sometimes the most up-to-date and relevant floodplain studies are not shown on the FIRM. For example, the Urban Drainage and Flood Control District produces Flood Hazard Area Delineations (FHADs) showing potential 100-year flooding. These maps are commonly used by the Floodplain Administrator to determine if property and/or structures are within the floodplain. The floodplain administrator regulates to these floodplains when they are available and are not shown on the FIRM. Consult with the floodplain administrator to determine if there is a non-FEMA regulated floodplain in your project area. Insurance purchase is not required in these zones, but is highly recommended.

What is a Floodplain Development Permit?

A Floodplain Development Permit is required for any development proposed in the floodplain. FEMA defines development as "any man-made change to improved or un-improved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment and materials." This also includes walls, sidewalks, trails, decks, patios, ponds, pools, and bridges.

- The Floodplain Development Permit is required prior to the issuance of a Building Permit, and will be issued concurrently with the Grading, Erosion, and Sediment Control (GESC) Permit, and any other permits required with the proposed project. All activities regardless of impact need to be permitted.
- Even when it is apparent that there are no adverse impacts to the floodplain, a permit is required for administrative purposes to ensure that the local floodplain administrator is aware of the activities within the floodplain and that they have been evaluated for compliance with the local floodplain management requirements. The following are common floodplain development activities that will require a permit:
 - Floodplain modifications – including flood fringe filling, grading, channel improvements when approved in conformance with the local floodplain management regulations in the Land Development Code;
 - Floodway modifications – when approved in conformance with the local floodplain management regulations in the Land Development Code;
 - Stabilization improvements – drop structures, rip rap, bank protection;
 - Installation or maintenance of bridges, culverts, other conveyances;
 - Minor improvements (non-substantial) to existing structures within the floodplain;
 - Substantial improvements (including improvements due to damage) to existing structures in the floodplain;
 - Landscaping – including grading, clearing, re-vegetation, planting, retaining walls, bridges, stairs, etc.;
 - Trenching operations associated with utility construction or maintenance
- Installation and maintenance of storm sewer outfall structures;
- Fencing, when approved in conformance with the local floodplain management regulations in the Land Development Code;
- Trail or sidewalk construction or rehabilitation;
- Construction and maintenance of master planned on-line detention or water quality facilities; and
- Installation and maintenance of park and recreation facilities.

What is the Grading, Erosion, and Sediment Control Permit (GESC)?

For improvements proposed in the floodplain that involve grading or land disturbances, a GESC Report and Plan are required to be approved by SEMSWA prior to the issuance of the GESC Permit. When approved in conformance with local and Federal floodplain management regulations, the following land-disturbing activities will require a GESC Permit

- New development and redevelopment of all sites (regardless of size);
- Any land disturbance of 1.0 acre or more not otherwise exempt;
- Installation of underground utility lines for a new development exceeding one single-family residence and appurtenant structures, prior to the start of over lot clearing and grading;
- New public and private roadway construction;
- Installation or maintenance of underground utility lines in excess of 1,000 linear feet in length;
- Any clearing, grubbing, grading, or filling operation within 100 feet of a drainageway and/or floodplain;
- Any clearing, grubbing, grading, or filling operation that has the potential to adversely impact drainage patterns or result in sedimentation of the storm sewer system or drainageway;
- Mining projects, even when subject to State mining permit;
- Drilling sites and operations not otherwise exempt; and
- Any project that SEMSWA determines to have an adverse impact on the public right-of-way, public infrastructure, or adjacent property, with respect to grading, erosion, and sediment control.

What is a low-impact GESC Permit?

Some land-disturbing activities may have a minor impact on adjacent properties and downstream receiving waters. A low-impact GESC Permit will be required for projects that meet the following criteria:

- A land disturbance of less than 1 acre that has the potential to adversely impact drainage patterns or result in sedimentation of storm sewer system or drainageway; or
- An installation of underground utility lines less than 1,000 linear feet in length outside of the public right-of-way.

In some cases, projects that have minor ground disturbances, short construction duration, or no impact to receiving waters are classified as "Low Risk," and a GESC Permit is not required. Contact SEMSWA to determine if your project is Low Risk. GESC considerations should still be followed. GESC Consideration Fact Sheets are available for Low Risk projects on SEMSWA's website.

Are there additional permits?

In addition to Federal Plan Development Process and GESC permits, the permits and approvals below may be required from other agencies for work within the floodplain.

- Building permit: When approved in conformance with local and Federal floodplain management regulations, the following improvements will require a building permit:
 - Substantial and non-substantial improvements to an existing structure in the floodplain;
 - Basement finishes and remodels;
 - Decks;
 - Patio covers;
 - Irrigation systems;
 - Fences;
 - Retaining walls over 4-feet high; and
 - Hot tubs or pools.
- Street Cut and Right-of-Way Use Permit: For projects that include the use of, or construction within the county and/or city right-of-way.
- Public Improvement Permit: For projects that include the installation or maintenance of improvements dedicated for public use or otherwise provide a public benefit.
- 404 Permit (authorization is obtained from the Headquarters U.S. Army Corps of Engineers): For any work within a stream or drainageway, even if it is dry most of the year.
- CLOMC: For any improvements that impact a FEMA regulated 100-year floodplain, it also requires compliance with the Endangered Species Act via the Fish and Wildlife Service and National Marine Fisheries Service.

