

Stream Buffers and Setbacks



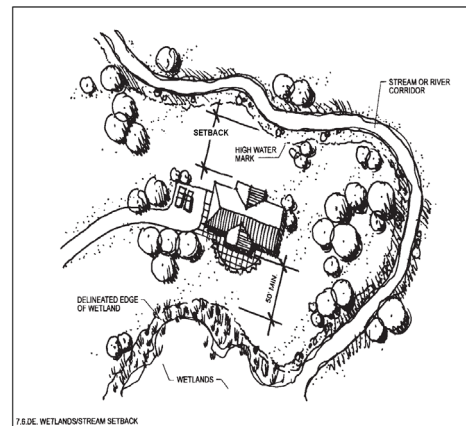
Hazards Addressed:



How it Works

A **stream buffer** (also known as a riparian buffer) is a defined area along a watercourse that is to be protected from development for the purpose of preserving the natural benefits of riparian ecosystems and reducing hazards risks of such areas. They are implemented in a similar manner and often in concert with buffers for wetlands and other sensitive areas such as tundra, steep slopes, and wildlife habitat. They are intended to protect the many functions (hydrologic, biological, ecological, aesthetic, recreational, and educational) that riparian areas provide to communities.

A **stream setback** is the minimum distance that a development must maintain between its boundaries and a riparian area to protect a buffer zone. Standard setback distances often range from 50 to 100 feet from the stream or river, but can vary based on the specific riparian zone. As a rule of thumb, a greater setback width means a greater margin of safety from water-related hazards. Both stream buffers and setbacks are used to limit or prohibit certain types (or all) development within them. They can differ from traditional floodplain ordinances – which typically focus on minimizing property damage by restricting development in a floodplain – by instituting additional restoration and ecological protection requirements within the buffer. In some cases,



*Estes Valley Colorado Development Code 7.6
Wetlands and Stream Corridor Protection*

Source: *Best Practices – Promoting Successful Mitigation in Colorado*
dhsem.state.co.us/sites/default/attachments/WRP%20Appendix%20F%20-%20Mitigation%20Best%20Practices%20Guide.pdf

restoration requirements – such as planting appropriate vegetation – are included as a condition for obtaining a development permit.

Stream buffers and setbacks function by limiting the amount of development adjacent to riparian and wetland zones to reduce exposure to flood risk and preserve the capacity of the buffer to minimize hazards through ecological processes. Additionally, such requirements can work by discouraging certain types of uses in these areas that could negatively impact water quality.

Implementation

Stream buffers and setbacks are implemented and enforced through local ordinance or codes. Generally, local requirements may be adopted either as part of a land use or zoning code, as stand-alone ordinances, or as part of other regulations (such as stormwater management regulations). Local governments take many different approaches to implementing stream buffers and setbacks. Some communities have fixed-width, non-varying setbacks for a variety of riparian areas (e.g., a 100-foot setback applies to all waterways). Other communities may adopt sliding-scale approaches with variable standards, based on different stream sizes and classifications and different types of land uses (e.g., certain intensive uses must be set back 100 feet, while less-intensive use must be set back 20 feet).

In addition, communities are authorized by statute to include provisions “establishing, regulating, and limiting such uses on or along any storm or floodwater runoff channel or basin as such storm or floodwater runoff channel or basin has been designated and approved by the Colorado Water Conservation Board (CWCB) in order to lessen or avoid the hazards to persons and damage to property resulting from the accumulation of storm or floodwaters.” (C.R.S. § 30-28-111(1) and §31-23-301(1))

Where It’s Been Done

Pitkin County enforces minimum fixed-width buffers of 100 feet from the high water line of a riparian or wetland area. Setback requirements can be reduced up to 50 feet if the applicant proves that a reduced buffer will not degrade water quality, contribute to stream bank erosion, or negatively impact the riparian or wetland habitat. Setback requirements in addition to the standard 100 feet may be required based on slope, soil, stream bank stability, proposed use of the property, 100-year flood zone boundaries, existing vegetation, flood and stormwater retention needs, or the presence of fish habitat or recreational amenities. In some cases, the Board of County Commissioners will determine that a setback of 150 feet or more is in the best interest of public health, safety, and welfare.

Some types of developments are exempt from setback requirements, like bridges, roads, trails, utilities, irrigation equipment, and flood control devices, if it is demonstrated that there is no alternative placement and disturbance to the buffer zone will be appropriately

mitigated. In general, Pitkin County requires damage to a buffer area from any development to be adequately mitigated through re-grading and re-vegetation.

Estes Park, and the surrounding **Estes Valley**, requires stream setbacks for all new development with the exception of some agricultural, maintenance, utility, habitat restoration, flood control, and recreational activities. Setback requirements in Estes Park depend on the type of waterway and the zoning classification of the area. The boundaries of streams and rivers from which the setbacks are measured are typically determined using the annual high water mark, defined banks, or the “thread” of the stream (the deepest groove or low water mark), depending on discernibility.

All buildings and accessory structures near a stream corridor, with the exception of those in the Commercial District zone, must be set back at least 30 feet, and those near a river corridor must be set back at least 50 feet. Parking lots must be set back 50 feet from both stream and river corridors. Within the Commercial District zone, structures must be set back by 20 feet from stream and river corridors, and parking lots must be set back by 12 feet. In most cases these requirements result in new construction being located outside of special flood hazard areas, and are credited with saving numerous structures from damage during the September 2013 flood event.

The City of Fort Collins determines the width of buffer zones based on the presence of ecological features, specific stream corridors, or the size of the wetland. Buffer widths range from 50 feet for isolated patches of riparian forest to between 100 and 300 feet for streams. An Ecological Characterization Study is required if a development site is within 500 feet of a natural feature, including wetland boundaries, and the top of bank, shoreline, and high water measurements of a perennial stream. This study informs the establishment of buffer zones to be included on project plans for development.

San Miguel County has fixed-width buffers of 100 feet. Any development within a buffer zone requires a Wetland Special Use Permit, which can be obtained if the development meets discretionary review standards. The land use code dictates restoration requirements for developers to restore wetland and riparian buffers to a functional condition if the ecosystem is altered or disturbed.

Advantages and Key Talking Points

Benefits of implementing stream buffers and setbacks include:

- Helps to preserve natural and beneficial functions of the floodplain.
- Protects the water course from the impacts of neighboring and upstream land uses.
- Helps reduce flood vulnerability both at the site as well as the surrounding area and downstream.
- Promotes habitat preservation of aquatic and adjacent riparian environments.
- Helps preserve water quality by limiting proximity of potential pollutants.
- Facilitates stream bank stability and reduces erosion potential.

Challenges

Some of the challenges associated with stream buffer and setback regulations include:

- Political will and community support is required to implement limitations on development location.
- Inability to implement along corridors where properties are already developed unless the property is destroyed or redeveloped.

Model Code Language and Commentary

In drafting and adopting riparian buffer and setback requirements, four issues should be considered:

- Purpose and intent
- Applicability and exemptions
- Development standards
- Procedures

Each of these is described in further detail below, including model language in blue shading for consideration. Commentary is located in *italics* in the column at the right. The model language used in this document is based on several existing ordinances from varying communities around the state, including municipalities and counties. The language is illustrative only; consult local counsel to tailor language for your jurisdiction.

Purpose and Intent

This section should describe the jurisdiction's intent in adopting buffers, setbacks, and/or other riparian protection standards. Common purposes include:

- A.** To promote, preserve, and enhance the hydrologic, biological, ecological, aesthetic, recreational, and educational functions that stream and river corridors, associated riparian areas, and wetlands provide;
- B.** To identify flood hazards and avoid development within those flood hazards to the extent practicable;
- C.** To establish regulations seeking maximum protection of all waters of [name of jurisdiction];
- D.** To avoid development activity within [buffer zones];
- E.** To minimize the adverse impacts of development activity within [buffer zones];

Commentary

Location of Riparian Buffer and Setback Regulations: Floodplain regulations are often included in zoning ordinances as a standalone chapter or article. They tend to be based largely on CWCB model regulations. Due to their length, specificity, and unique applications, they typically remain separate from other standards rather than being woven into other setbacks, use-specific standards, or permitting procedures.

Purpose and Intent: The purpose and intent statement will vary depending on the types of watercourses and riparian areas the community is trying to protect. Communities should try to integrate established policies from the local hazard mitigation plan, the comprehensive plan, and other adopted policies and regulations where possible.

- F. To mitigate the impacts of development within [buffer zones];
- G. To subject development within [buffer zones] to heightened review;
- H. To prevent property loss and loss of life while ensuring the natural and unimpeded flow of watercourses; and
- I. To encourage development and land uses that preserve existing watercourses as important natural features.

Applicability and Exemptions

Applicability standards describe when the riparian buffers and setback standards apply, and if there are any types of development activities or land uses that are exempt from the standards. The applicability section should include the following provisions:

- A. The provisions of this [chapter/article/section] apply to all development within [100 feet] from the high-water line of the [name of watercourse(s)] and to all development within the 100-year floodplain.
- B. This section shall apply to all new development, except for the following:
 - 1. The development does not add more than [ten percent, or desired percentage] to the floor area;
 - 2. No portion of the expansion, remodeling, or reconstruction will be closer to the high water line than the current development; and
 - 3. The expansion, remodeling, or reconstruction shall not constitute a substantial improvement in terms of a floodplain regulation, and shall not increase the amount of ground coverage of structures within the 100-year floodplain
 - 4. Maintenance and repair of existing public roads and utilities within easements or public rights-of-way;
 - a. Maintenance and repair of flood control structures;
 - b. Emergency response activities following a flood event;

Expansion, Remodeling, or Reconstruction: *Expansions of current structures or uses within designated floodplains or stream buffers require consideration of appropriate thresholds. For example, what if a roof needs replacement? What if a deck is proposed? What if the expansion is upward and does not expand the footprint?*

- c. The expansion, remodeling, or reconstruction of an existing development provided the following standards are met.

Development Standards

Standards for riparian buffers and setbacks vary widely; however, general approaches to managing development within stream buffers include the following:

- A. Development within the required buffer zone shall not be permitted unless the proposed development:
 - 1. Is required to provide protection against property loss and/or damage;
 - 2. Will improve the quality of the [*name or type of watercourse, or buffer zone*] and enhance the ecosystem by improving water quality, wildlife habitat, or biodiversity;
 - 3. Will not increase the base flood elevation on the parcel; and
 - 4. Will not pollute or interfere with the natural changes of the river, stream, or other tributary, including erosion and sedimentation during construction.
- B. There shall be no development below the top of slope or within [*15 feet*] of the top of slope or the high waterline, whichever is more restrictive;
- C. No development or use shall be permitted that will disturb, remove, fill, drain, dredge, clear, destroy, or alter any area, including vegetation, within stream or river corridors, wetlands, or their associated [*buffer/setback areas*] unless expressly allowed by this [*code/ordinance*].
- D. No fill material or debris shall be placed on the face of the slope in a stream buffer, and historic drainage patterns and rates shall be maintained;
- E. Parking lots shall be setback a minimum of [*15 feet*] from the top of slope;
- F. All buildings, accessory structures, and parking lots shall be setback a minimum of [*50 feet*] from the delineated edge of any wetland; and

Development Standards:
Depending on the chosen standards, communities can apply them so that all standards have to be met or that a defined number of standards have to be met. For example, the community could state that “development shall not be approved in the buffer zone unless at least two of the following standards are met.”

Top of Slope Limitation: *This standard is developed to protect bank stability and riparian vegetation.*

- G.** If development in a [buffer zone/setback area] causes any disturbance within the [buffer zone/setback area], the applicant shall undertake restoration and mitigation measures such as regarding and revegetation to restore any damaged or lost natural resource.

Procedures

When development is proposed in areas where riparian buffers and setbacks apply, additional procedural requirements often apply. For example, a special use review application might not ordinarily require a grading plan; however, if the property contains a designated watercourse, then the community may require delineation of grades at two-foot contours. The specific procedural adjustments vary depending on the type of development and the type of approval being sought.

The following are examples of the types of supplemental procedures that may apply to development subject to riparian buffers and setbacks:

- A.** The development application shall include the following:
1. Existing and proposed grades at two-foot contours;
 2. Proposed elevations of the development;
 3. Delineation of the high water line and the 100-year floodplain; and
 4. A description of the proposed construction techniques, including for grading, erosion, and sediment control.
- B.** The [Director/Administrator] may recommend and the [Planning Commission/City Council/Board of County Commissioners, or equivalent] may impose conditions to approval of an application with stream buffers and setbacks that include:
1. Minimizing adverse impacts of the proposed development including the operation, type, and intensity of land uses;
 2. Controlling the timing of the proposed development;

Procedures: Approval procedures in a zoning code will likely already be defined in a separate administration and procedures chapter or section. These additional procedures would apply above and beyond those required for a development that is not subject to riparian buffers and setbacks. Additional procedures that apply in hazard-prone areas often build on and cross-reference the common review procedures that apply to all development applications.

3. Controlling the duration of use of the development and the time in which structures must be removed; and
4. Assuring that development is maintained properly over time.

Key Facts

Administrative capacity	Experienced planners with city or county attorney to write regulations and normal capability to administer the standards once adopted
Mapping	Mapping is strongly recommended. Can be coupled with open space, FEMA or floodplain overlay, or regular land use mapping
Regulatory requirements	Local regulations are generally adopted as part of land use or zoning codes or as part of other regulations (such as stormwater management regulations)
Maintenance	Minimal. Generally part of development review once regulations are adopted
Adoption required	Yes
Statutory reference	General land use authority is found in C.R.S. § 29-20-101. Colorado’s “1041 Regulations” further describe the administration of natural hazard areas as they pertain to floodplains. These regulations are addressed in a separate model
Associated costs	Ordinance development or amendment costs and staff time to review development for compliance with regulations and monitor for enforcement

Examples

City of Aspen Environmentally Sensitive Areas and Stream Margin Review	https://www.cityofaspen.com/276/Title-26-Land-Use-Code Land Use Code, Part 400, and Section 26.435.040
City of Boulder Stream, Wetland, and Water Body Regulations	bouldercolorado.gov/plan-develop/stream-wetland-water-body-protection
Pitkin County River and Stream Corridors and Wetlands	https://pitkincounty.com/DocumentCenter/View/15539/chapter-07?bidId= Pitkin County Land Use Code Section 7-20-80

Town of Estes Park and Estes Valley Wetlands and Stream Corridor Protection	https://library.municode.com/CO/estes_valley/codes/development_code?nodeId=CH7GEDEST_S7.6WESTCOPR Estes Valley Development Code, Section 7.6
City of Fort Collins Natural Habits and Features and Establishment of Buffer Zones	https://library.municode.com/co/fort_collins/codes/land_use?nodeId=ART3GEDEST_DIV3.4ENNAARRECUREPRST_3.4.1NAHAFF Land Use Code, Division 3.4, and Section 3.4.1.E
San Miguel County Wetland Areas	sanmiguelcounty.org/DocumentCenter/Home/View/214 https://www.sanmiguelcountyco.gov/243/Land-Use-Code Land Use Code, Section 5-22

For More Information

Colorado Water Conservation Board: Watershed Protection and Restoration
cwb.state.co.us/environment/watershed-protection-restoration/Pages/main.aspx

Conservation Tools.org

conservationtools.org/guides/119-riparian-buffer-protection-via-local-government-regulation

National Handbook of Conservation Practices: Conservation Practice Standard, Riparian Forest Buffer

nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_026098.pdf

Protecting Stream and River Corridors: Creating Effective Local Riparian Buffer Ordinances

rivercenter.uga.edu/wp-content/uploads/sites/17/2015/03/Guidebook-for-Developing-Local-Riparian-Buffer-Ordinances.pdf