

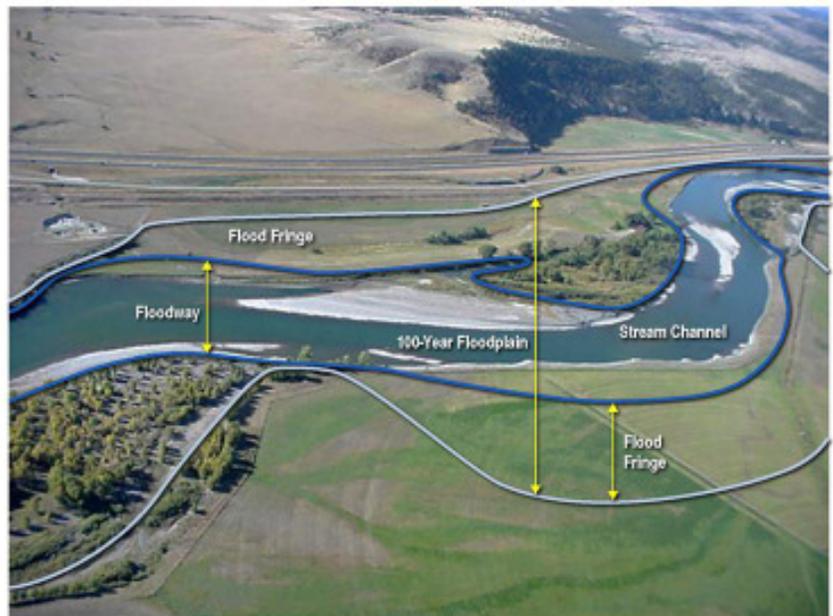
## FACT SHEET 8: Do Floodplain Regulations Adequately Protect Montana's Streams and Rivers from Development?



Anyone proposing a project near a stream or river must check with their local floodplain administrator to determine if a permit is required for their proposed project. This requirement is true whether floodplain maps exist for a parcel or not. If floodplain maps exist for an area, then the maps usually reveal whether or not a proposed building site is located in the floodplain. For unmapped areas, floodplain administrators make their decision about floodplain locations based on the best available data they can find; sometimes in this situation, local governments require developers to hire an engineer to determine the boundary of the 100-year floodplain for a specific stretch of stream. Once it is determined that a building site is in the floodplain, projects must go through the permitting process, with the local government deciding whether or not to issue a permit.

The floodplain permitting process considers several factors. In order to better understand how floodplain regulations work, three terms should be explained (*see Figure I*):

- **100-year floodplains** include the area adjoining a stream or river that has a one percent (1%) chance of flooding in any give year. Put another way, a home located in the 100-year floodplain has a 26% chance of flooding during the course of a 30-year mortgage. It contains the floodway and the flood fringe (the 100-year floodplain = the floodway + flood fringe).
- **Floodways** carry most of the flood water in a stream. Technically floodways are the channel of a watercourse or drainage way, and those portions of the floodplain adjoining the channel, that are reasonably required to carry and discharge the floodwater of any watercourse or drainage way.
- **Flood fringe** is the portion of the 100-year floodplain outside the floodway, including the flood storage and backwater areas subject to shallow water depths and low velocities.



**Figure I. The 100-year floodplain is composed of the floodway and the flood fringe. The floodway carries most of the flood water; the flood fringe is located outside the floodway, and includes the flood storage and backwater areas subject to shallow flooding and low velocities. DNRC illustration.**

Montana state law allows new buildings to be located in the flood fringe. Although counties can prohibit this from happening by adopting stricter Floodplain Regulations, only one—Ravalli County—has actually done this. Consequently, throughout Montana new buildings are allowed to be constructed in the flood fringe portion of the floodplain. The number of homes located statewide in floodplains is unknown. However, an inventory completed in 2006 revealed that 17 Montana counties have an estimated 3,800 homes located in the floodplain; and more than 400 of these homes were built between 1990 and 2006.<sup>9</sup>

If local governments allow homes to be built in the floodplain, they must meet two conditions: (1) the buildings must be elevated so that the lowest floor of the home (including the basement) is 2 feet above the predicted water level for a 100-year flood (called the base flood elevation or BFE); and (2) the structure can not increase the elevation of a 100-year flood by more than one-half (1/2) foot.

## **How Typical Montana Floodplain Regulations Work: A Broadwater County Case Study**

Many individuals have wondered how the house pictured below on the Jefferson River received the necessary permits to build. The short answer? This project complied with the letter of the law.

Near Three Forks, the Jefferson River forms the boundary line between Broadwater and Gallatin Counties. Gallatin County has a 300-foot setback for new buildings in subdivisions. Broadwater County has no such provision. Instead, Broadwater County's only regulations that affect how close homes can be to a stream or river are the county's floodplain regulations and septic system regulations.

The parcel of land in this case study is sandwiched between Highway 287 and the Jefferson River. At this location, the floodplain in Broadwater County is approximately 325 feet wide, and the floodplain on the opposite side of the river in Gallatin County is at least a half mile wide. Most of the parcel is in the floodplain. In fact, a floodplain report conducted by an engineering firm hired by the landowner documented that the "depth of water over the proposed homesite location during the estimated 100-year flood will be approximately 2.5 to 4 feet pre-fill." And the driveway for the homesite crosses a swale that is "approximately 7-feet below the base flood elevation (BFE)."<sup>10</sup> Modeling done by the engineer—and based on the broad floodplain, which included the floodplain on the Gallatin County side of the river—concluded that the fill for the home would not change the BFE by more than 0.5 feet. Consequently, the house was given a floodplain permit requiring that it would need to be elevated at least 2 feet above the BFE.

The only other regulation protecting the riparian and river resources at this location was the septic system regulation. This regulation requires that the septic system be at least 100 feet out of the floodplain. The owners of this property met this standard by locating their septic system on the bench above the floodplain, using a pump to transport waste approximately 200 feet from the house.

While the house was being built, the Broadwater Conservation District wrote a letter to the landowner stating:<sup>11</sup>  
"As was discussed during the field inspection, the BCD [Broadwater Conservation District] Board of Supervisors has concerns regarding your building site, which is located within the active floodplain of the Jefferson River in Broadwater County. Although the building site itself is not under the jurisdiction of the

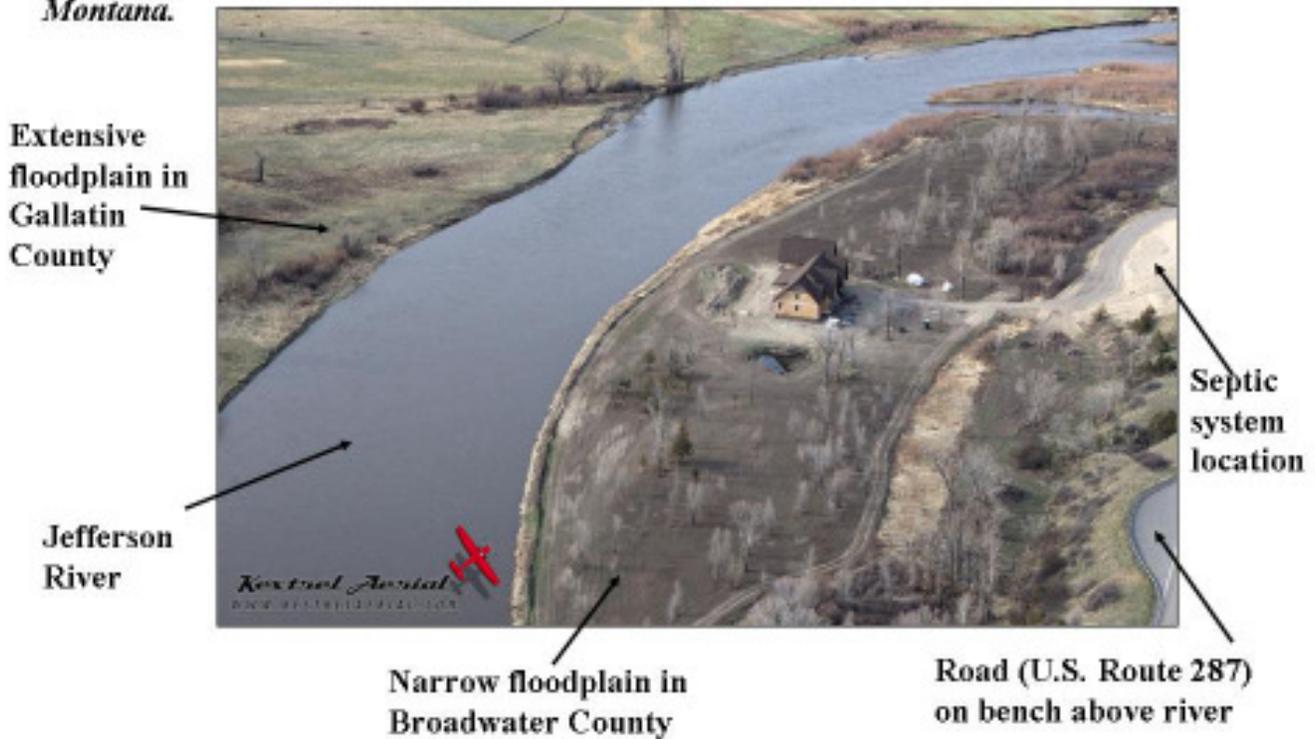
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<sup>9</sup> Kolman, Joe. 2008. *A Flood Story*. The Interim. October 2006. Montana Legislative Service Division, Helena, Montana, 6 pp.

<sup>10</sup> Memo from Geotechnical Engineering of Bozeman to the Broadwater County Floodplain Administrator regarding the Floodplain Development Permit Application, dated December 13, 2006.

<sup>11</sup> Letter from Charlotte Lewis, District Administrator, Broadwater Conservation District, to landowner, September 2007.

**Figure II. Home built in 2007 on Jefferson River in Broadwater County near Three Forks. This home is located approximately 100 feet from the river within the 100-year floodplain (in the floodway fringe), a legal place to build in most parts of Montana.**



BCD, any future potential problems in trying to protect this site would likely need a 310 permit and would be within the jurisdiction of the BCD. As you know, the area surrounding the homesite has high potential for flooding during spring runoff and/or during winter ice jam events... The BCD anticipates that future modification of the property may be requested after you experience flooding events during the winter and/or spring events....”

When a home is built in harms way, as this structure appears to be, it is difficult—if not impossible—for Conservation Districts to later deny permits for bank stabilization measures that may protect the home but degrade natural riverine processes. Riverside development leads to more river channelization projects (e.g. riprap and levees), which increase the frequency and severity of floods and sends bank erosion and other problems to downstream landowners and communities. This house would be permitted in most Montana counties because it meets minimum standards of local government floodplain and septic system regulations.

### **For More Information**

For a more complete discussion on floodplain regulations and how they can be used to protect streams, rivers, riparian areas, and wetlands, please see *A Planning Guide for Protecting Montana’s Wetlands and Riparian Areas* (Ellis and Richard, 2008; available at [www.mtaudubon.org](http://www.mtaudubon.org)). This publication also describes in detail how Ravalli County has used its floodplain regulations to help protect streams.

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