

**Appendix J**

**Trails in Riparian Zones**

## **Discussion of the Appropriateness of Trails in Riparian Zones/Corridors**

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Maintaining healthy buffers between developed areas and streams is the best, most inexpensive, and effective way of protecting watersheds. Buffers maintain functioning riparian vegetation, keep floodplains intact, protect water quality, reduce the need for bank stabilization, keep homes and businesses out of harm's way, reduce the need for taxpayers to pay the tab when floods inevitably strike, reduce taxpayer burden of maintaining roads and bridges, and provide de facto open space, recreation, trails, and wildlife habitat. What are adequate buffers? Streams and watersheds are very diverse by nature and one formula will not fit all streams equally. A good rule-of-thumb is to maintain buffers at least as wide as the riparian zone or "green line" of vegetation. Existing guidelines in the Bozeman area include 35 to 50 foot buffers. While this distance may be ample for small, springfed rivulets, it is painfully insignificant for Sourdough Creek or the East Gallatin River. A panel of citizens with diverse interests and expertise could develop a set recommendations that would adequately define streamside and wetland buffers.

Establishment, conservation, and enhancement of streamside and wetland buffers would link well with most of the goals and strategies of the draft policy:

**Water Quality:** Buffers are an excellent tool for protecting water quality. Providing access to information on best management practices, along with requirements in zoning regulations and financial incentives provide balance in planning policy.

**Conserve Habitat:** Buffers around wetlands and waterways should protect riparian habitats, which over 80% of wildlife uses. One important item is the incorporation of standard covenants into subdivision regulations. Livestock grazing (generally horses) on small acreage can be devastating to stream channels and riparian vegetation.

**Soil Erosion:** Healthy riparian vegetation is the best protection against soil erosion. Development in flood plains contributes to loss of riparian vegetation and leads to riprap and stream stabilization that increase erosion downstream.

**Open Space:** Buffers are de facto open space. They are natural breaks in the landscape and watershed that provide consistent avenues of wildlife habitat corridors, storm drainage, aesthetic and economic value. Waterways and buffers also lay out a natural framework for trails, a community asset.

**Agriculture:** Some of the best soils and most productive agricultural lands are associated with wetlands and waterways. Keeping land adjacent to riparian areas in agricultural production rather than residential or industrial development is a more compatible land use with much less risk.

**Residential, Commercial, and Industrial:** Flood plains are generally poor sites for development of any sort. However, some uses of flood plain may be warranted for given uses that can accommodate flooding.

**Historic and Scenic Resources:** Stream corridors provide an aesthetic break in developed landscapes, and are another way of preserving landscapes of historic value (for example: the site of Fort Ellis along Rocky Creek).

**Mobility and Circulation:** A trail system is quite compatible with streamside buffers. Trails provide access to "wild refuges" in urban areas as well as providing alternatives to driving. Because poorly sited or random trails may have negative impacts to watercourses, trails should be actively designed to maintain vegetative buffers between trails and streambanks, to incorporate drainage designs to avoid channeling silt into streams, to size bridge crossings to avoid hydrologic constrictions that cause erosion, and to avoid directing users into critical habitats. Making healthy streamside corridors available to the public encourages an appreciation and awareness of our communities' natural resources and fulfills a need for wildness we all have. Recently, expanding and upgrading public and private roads has created a conflict between road layouts and waterways. Rigid allegiance to street layouts has resulted in several proposals to "relocate" streams. This is a detrimental practice. Creative alignment of roads to avoid such impacts of streams should be required or at least encouraged.

**Local Services:** Encouraging local neighborhoods or subdivisions to share infrastructure such as sewage treatment, fire protection, and waste disposal is important in distributing costs of public services equitably. Certain practices, like encouraging fire ponds and dry hydrants may have negative impacts and should be carefully planned. Another community benefit of buffers is maintaining access to fisheries. Public fishing access should be preserved and directed to allow for the proper functioning of buffers.

**Health and Safety:** Developing flood plains is a dangerous and expensive proposition and should be avoided. Many cases of poorly-conceived home sites and lax planning have resulted in tragic loss of life and property.

Waterways are a critical ecological, recreational, and economic asset to Gallatin County. Our level of knowledge and appreciation for wetlands and streams has increased substantially over the past 30 years. It is a critical time for Gallatin County to act to protect these areas and to design our community creatively and consciously. We have a chance to succeed by planning objectively with good science and community involvement.