APPENDIX

A. IN-STREAM WOODY DEBRIS

1. Findings

a. Streams and rivers transport woody debris (WD) from blowdown trees or channel migration into floodplain areas. WD has a major effect on stream form and function.

b. WD accumulation is considered an important component of healthy aquatic systems. It provides habitat for fish and other aquatic life, organic material for riparian plants, and nutrients for aquatic organisms.

c. Removal of WD by landowners, recreationists, or others may have a negative impact on stream habitat and function.

d. Manipulation of small or isolated WD (e.g., a single branch) generally has less impact on stream habitat and function.

e. Depending on the location and site, WD may pose a risk to property and public safety.

2. Standards

a. A 310 permit is generally required for projects involving cutting and removal of in-stream WD.

b. A 310 permit is not required in cases where the material to be cut is part of a single tree and is less than 6 inches in diameter.

c. In every case, cutting and removal of in-stream WD shall be done in a way that has the least impact on stream habitat and function. (Rule 12.12. Project Construction.)

d. Regardless of whether a 310 permit is required, all cut material must be removed and/or placed above the ordinary high-water mark. (Ravalli County Floodplain Regulations.)

e. Landowner permission should be obtained for cutting or placement of debris above ordinary high-water mark, even if a 310 permit is not required.

B. RIPARIAN VEGETATION

1. Findings

a. Riparian vegetation is an integral component of a healthy stream environment. Riparian vegetation stabilizes stream banks, contributes to lower water temperatures, filters sediment during flood events, creates overhead cover for fish, and provides habitat for many wildlife species.

b. Riparian vegetation along otherwise unconfined stream channels is important for maintaining a stable stream corridor.

c. Land management activities that reduce riparian vegetation immediately adjacent to streams can result in loss of habitat and bank erosion, even during moderate flows.

2. Standards

a. A 310 permit may be required for projects involving cutting or removal of riparian vegetation on lands immediately adjacent to natural rivers and streams. (Rule 2.1.)

b. Cutting, removal, or disturbance of riparian vegetation should be kept to the minimum amount necessary to achieve the project goals. (Rule 12.5. Project Construction.)

c. The project plan must include provisions for replacing or reseeding any riparian vegetation that is damaged during the course of the project.

C. FISH PASSAGE AT ROAD CROSSINGS

1. Findings

a. Road crossings may create adverse hydrologic conditions, high velocities, turbulence, and barriers that prevent fish from moving upstream.

b. Preventing fish passage blocks spawning migrations and use of upstream habitats, negatively impacting fish populations.

c. Projects that permanently prevent fish migration are prohibited. (Rule 12.10. Project Construction.)

d. There are many factors which may affect fish passage. Each site is unique and therefore requirements for fish passage may vary from site to site.

2. Standards

a. In determining crossing requirements that will provide a reasonable means for allowing fish passage, consideration must be given to the uniqueness of the site, species and size of fish present, channel width, discharge and gradient of the stream.

b. Bridges are the best structures in providing fish passage, followed, in decreasing order of desirability, by bottomless culverts, embedded culverts, and non-embedded culverts.

c. Culverts should be placed on the grade of the stream and located preferably be in a straight reach so that flow will not be directed against the bank.

d. Culvert outlets should not be perched.

e. All permanent stream crossings should, at minimum, span the width of the stream at the mean high-high water mark. (Rule 12.13 Project Construction.)

D. IRRIGATION DIVERSION AND HEADGATE MAINTENANCE

1. Findings

a. Irrigation diversions and headgates tend to collect floating wood and other debris that can interfere with their ability to deliver the legal amount of water and therefore may require periodic maintenance and repair.

b. An activity that constitutes customary and historic maintenance and repair of existing irrigation facilities that do not significantly alter or modify the stream in contravention of 75-7-102 is not considered a 310 project.

2. Standards

a. A 310 permit is not required for customary and historic maintenance and repair of existing irrigation facilities that do not significantly alter or modify the stream in contravention of 75-7-102 MCA. (Rule 4.20. Definitions.) Examples are removal by hand of woody debris and/or minor sediment deposition that interferes with the function of a diversion or headgate.

b. Temporary measures to divert water toward a headgate that are placed by hand and do not significantly alter or modify the stream in contravention of 75-7-102 MCA are considered to be customary and historic maintenance and therefore do not require a 310 permit. Examples are placement of tarps or small rock wings. All such measures must be removed to return the stream to its natural state at the end of the irrigation season.

c. A 310 permit is required if the maintenance and repair activities may significantly alter or modify the stream. Examples of such projects are temporary measures to divert water towards a headgate involving gravel berms, or concrete barriers. All such measures must be removed to return the stream to its natural state at the end of the irrigation season.

d. If the maintenance and repair activities are performed routinely in the same location and in the same manner from year to year, a maintenance 310 permit for the activities may be approved for a period of up to 10 years. (Rules 10.8. Decision.)

e. Any work that is outside the scope of a maintenance permit will require a regular 310 permit.

E. BURIED UTILITY LINE CROSSINGS

1. Findings

a. Utility lines that cross underneath a stream or river are generally installed using a method called horizontal directional drilling, in which a hole is bored underneath the streambed.

b. Improper installation and placement of buried utility line crossings can have significant negative effects on streams due to disturbances of streambeds and banks.

c. Buried utility line crossings that become exposed due to erosion can create a public safety hazard and result in damage to infrastructure.

2. Standards

a. Where possible, the bore holes for utility lines must be set back at least 30 feet from the mean high-water mark and go at least two times the modeled scour depth below the bottom of the stream channel.

b. If conditions at the site do not allow the above conditions to be met, alternative setbacks and depths that ensure no negative impact to the streambed and banks may be approved.

c. In cases where the applicant intends to install buried utility lines at multiple locations, a single 310 application may be used if the same methodology will be used at each site. The application must include a map showing the location of each site along with the coordinates or legal descriptions. (Rule 9.3.d. Application Process.)

F. OFF-STREAM REVETMENTS

1. Findings

a. Off-stream revetments are defined as material (e.g., buried rock) placed away from the stream bank with the intent of providing erosion control once the stream migrates to that location.

b. Except as noted in the rules, a "project" is an activity that results in a change in the state of a natural, perennial-flowing stream or river, its bed, or its immediate banks. (Rule 4.20. Definitions.)

c. "Immediate banks" means the area above the mean high-water mark and directly adjacent to a stream which when disturbed will physically alter or modify the state of a stream in contravention of 75-7-102, MCA. [ARM]

2. Standards

a. Off-stream revetments have the potential to affect the state of the stream and therefore require a 310 permit and are subject to the same standards for 310 projects as given in Rule 12. Project Construction.