

## F. Maintenance and Mitigation Definitions

This appendix provides definitions for the routine maintenance, mitigations and other requirements included in the alternatives. Appendix I (Route Data) lists the routes with mitigations and other requirements by alternative. Specific mitigations must be completed prior to designation of the route for public motorized use.

### Maintenance

**Drainage Features:** re-shape existing waterbars or drain dips, repair and maintain drainage structures, remove inlet/outlet debris.

**Maintenance (annual):** maintenance and repair of a route annually due to less favorable soil type, steeper tread gradient or higher trail use.

**Maintenance (routine):** routine maintenance and repair activities repeated once every 3 to 5 years on a typical OHV route. The maintenance and repair cycle depends on route type, trail use, soil type, and tread gradient.

**Trail Corridor Clearance (brushing):** removal of small trees or vegetation from trail corridor.

**Trail Corridor Clearance (logging out):** removal of trees or other vegetation that has fallen across trail corridor.

**Trail Sign:** installation, repair or replacement of signs and markers.

**Trail Tread Clearance:** rock and debris removal from the traveled way.

**Tread Grading:** reshaping, leveling, and smoothing of trail tread to fill ruts or rills and remove tread bumps, potholes, or washboard.

### Mitigation

Mitigation activities may use one or more of the following hand tools or mechanized equipment depending on route location and accessibility:

- **Mechanized equipment:** ATV, auger, chainsaw, compactor, pole saw, rock rake, tractor, trailer, etc.
- **Hand tools:** hand saw, McLeod, pick, posthole digger, pruning shear, rake, shovel, etc.

### Barriers

**Brush Barrier:** small trees or brush placed along side travel way to restrict vehicle traffic to desired location or to block restored routes. Requires no digging and deadfall adjacent to trail is usually used.

**Fence Barrier (pipe):** pipe fence constructed using vertical posts with welded horizontal rails, installed 30 inches above ground surface. Requires digging up to 8 inch wide by 24 inch deep hole for installation of post.

**Fence Barrier (wood):** wood fence constructed using 4 to 6 inch vertical posts with horizontal rails bolted through posts, 30 inches above ground surface. Requires digging up to 8 inch wide by 24 inch deep hole for installation of post.

**Log Barrier:** logs placed in a shallow trench along a travel way restricting vehicle traffic to desired locations.

**Low Impact Barrier:** low resource impact, vehicle barrier constructed by placing full-length railroad ties on top of 24 inch ties, held in place by driving rebar through ties into ground approximately 24 inches. Requires no digging of holes, but sometimes leveling of ground is required for placement.

**Rock Barrier:** large rock boulders, usually 36 to 48 inch diameter, placed in shallow holes along a travel way to restrict vehicle traffic to desired locations.

### **Drainage**

**Boardwalk/Puncheon:** trail tread reinforcement structure resembling a low bridge and constructed over wet or otherwise unstable soil.

**Bridge:** structure built above and across a stream or drainage allowing vehicles to cross without entering watercourse and allows for natural flow and minimal impacts to streambed channel.

**Causeway/Turnpike:** tread reinforcement technique, for crossing damp soils, placing parallel logs or timbers allowing for trail tread build up elevated 4 to 8 inches above the natural surface.

**Collector Ditch:** drainage structure which intercepts water flowing toward a trail and channels it parallel to the trail to the next drainage or underneath through a culvert.

**Culvert (arched):** bottomless culvert allowing natural flow and minimal impacts to streambed channel. Culvert is cut in half lengthwise and installed under trail tread.

**Culvert (standard):** plastic or metal pipe placed in drainages to carry water under trail tread.

**Drain Dip (hardened):** drain dip with additional tread surface hardening (e.g., rock ballast, tread blocks, soil cement or geosynthetic products).

**Drain Dip (standard):** Constructed erosion control technique which reverses the grade of a trail for a distance of 15-20 feet before returning to the prevailing grade. The change in grade forces water to run off the trail surface rather than gaining additional velocity and volume.

**Drain Dip (terrain):** grade reversal using natural dips in trail, planned into the trail during initial route or re-route layout.

**Waterbar:** constructed soil, rock or log berm that diverts water from the trail tread. Waterbars are more abrupt for motorized travel than drain dips.

### **Hardening**

**Concrete Blocks:** pre-cast interlocking concrete blocks measuring approximately 17 inches wide, 23 inches long, 3.5 inches high with 4 inch square holes. The blocks weigh approximately 60 pounds with a minimum compressive strength of 4000 psi. This technique can be used for low water stream fords or tread hardening.

**Drainage Hardening:** treating drainage or wet area crossing with concrete blocks, rock ballast, logs or timbers.

**Geosynthetics:** synthetic material used in place of concrete tread blocks to harden trail tread. This includes geotextiles (construction fabrics), geonets, sheet drains, geogrids and geocells. These materials become a permanent part of the trail and are usually covered with soil or rock to prevent deterioration by ultraviolet light or damage by trail users.

**Mechanical Hardening:** compaction of native soils using mechanized equipment (i.e., jackhammer, wacker, tractor or roller).

**Padding:** fabric placed on native surface and covered with a layer of soil to protect sensitive resources.

**Rock Ballast:** three to six inch crushed rock fill material used to form the trail bed.

**Soil Cement:** trail tread treatment mixing a calculated amount of cement with the native soil. This is not recommended for use on a trail with tread gradient greater than 3% as the surface may become slippery with dust and vegetation litter such as needles.

### **Recreation**

**Cattleguard:** motorcycle/ATV cattleguard (width 60 inches or less) installed along existing fence line, causing minimal ground disturbance as structure requires leveling of surface only.

**Trail Resting:** closing of a specific trail for up to three years to allow natural recovery of trail tread and adjacent resources and then re-opened for motorized use.

**Trail Rotation:** trail rotation from motorized to non-motorized use each week or other pre-determined schedule (e.g., one week motorized, one week non-motorized).

### **Signing**

**Combined Use:** prepare and implement sign plan for identified portions of high standard (passenger car) roads for Combined Use by street legal and non-street legal vehicles.

**Custom:** install directional, regulatory and educational signing prescribed by various specialists for protection of sensitive resources. (e.g., route markers, vehicle restriction signs, and directional signing through specific areas of concern).

**Mixed Use:** prepare and implement sign plan for identified portions of certain (high clearance) roads available for use by both highway legal and non-highway legal motor vehicles.

**Standard:** install directional, regulatory, educational, and caution signs specific to OHV route management. (e.g., route markers, hazard signing, vehicle restriction signs, and stop signs).

### **Traveled Way**

**Climbing Turn:** large turning arc with an outside berm and continuous smooth grade utilizing existing side slope.

**Full Bench:** trail resting entirely on an excavation into a steep side slope, no fill is used to support the trail.

**Partial Bench:** trail resting partially on an excavation into side slope and fill is used to support remainder of trail down slope of route.

**Switchback:** sharp hillside turn, usually of about 180 degrees, intended to lessen the grade of a trail traversing a steep slope.

**Trail Softening:** adding material to traveled way to minimize rider injury when adverse contact with trail surface occurs (e.g., sand, pea gravel, small wood chips/shavings).

**Tread Grading:** reshaping, leveling, and smoothing of trail tread to fill ruts or rills and remove tread bumps, potholes, or washboard.

### **Weather**

**Season of Use** – pre-determined dates routes are open to motorized use (e.g., April 1 – November 30).

**Wet Weather Closure** – closure determined by individual storm events. Enacted when an area/route receives a pre-determined amount of precipitation and reopened after a preset time of drying occurs (i.e., 1 inch of rain within 24 hours, closed until 72 hours of continuous drying).

## **Other Requirements**

**RLF Surveys:** conduct surveys to determine presence/absence of the California red-legged frog using the United States Fish and Wildlife Service (USFWS) protocol.

**RLF USFWS Consultation:** Forest Service consultation with the USFWS to comply with Section 7 of the Endangered Species Act.

**SHPO Consultation:** Forest Service consultation with the State Historic Preservation Officer (SHPO) to comply with Section 106 of the National Historic Preservation Act.