Sidehill Roads: Abandonment Closure Guidelines

State Forester Forum

FILL PULL-BACK CRITERIA

A large number of existing roads were built using sidehill cut-fill construction. In many places these fills are "perched" on steep sidehills. Sometimes they appear to stay in place because of the support of trees, stumps, or brush clumps. Many sidehill fills are of questionable stability as evidenced by tension cracks and past sloughing. Often, road "closure" evaluations will involve consideration of pulling back some of the unstable or questionable sidehill fills.

Determinations of what fill to pull back and what fill to leave is not a perfect science. Generally speaking, "unstable fills" should probably be pulled back for either permanent or "long-term" road closure. Usually, the stability standards for leaving fill in place should be higher for permanent closure situations than for long-term closure. Based on experience and observations, we have developed a set of criteria to assist evaluation of the pull back question. These suggested criteria may be briefly summarized as follows:

A. Look for segments of fill that are of "precipitous" inclination and that are clearly caught on brush clumps, stumps, trees, or slash. These fills are virtually certain to fail when the supporting structure eventually rots out.

B. Look for "very steep" fill areas that exhibit chronic seepage. This is indicated by wet conditions during the driest season of the year and/or by a significant growth of reeds and other water-loving vegetation along the road and on the face of the fills. Ground water is one of the most important factors in long-term fill stability; therefore, steep areas with chronic seepage are certain to be a stability risk over time.

C. Look for any areas with evidence of tension cracking and/or downsets of the edge of the road. This is a clear indication of instability.

D. Look for areas where the road prism is constructed partly by excavation into sound rock and partly by fill on steep sideslopes. In such areas, it is likely that the fills are resting on a surface of inherently limited stability. Any subsurface seepage (seasonal or not) is likely to be concentrated above the rock surface in the fill, or in the residual soil zone just beneath the fill.

E. Look for areas where bedding or foliation patterns in the rock are parallel or nearly parallel to the cut and fill slopes and the hillside. This provides a number of potential failure surfaces in the most unfavorable direction possible.

Obviously, judgment and experience are important in applying these criteria. It is generally true, however, that a fill area which fits two, three, or more of the criteria is likely to be in a more precarious stability situation than fills that fit one of the criteria or none. Also, the environmental sensitivity of the situation must be considered. A higher stability standard may be appropriate in an area where a sensitive stream segment lies immediately downhill of, and in close proximity to, the fill in question. In areas where there is a substantial separation between the fill and any possible water quality impacts, a lower stability standard may be acceptable.

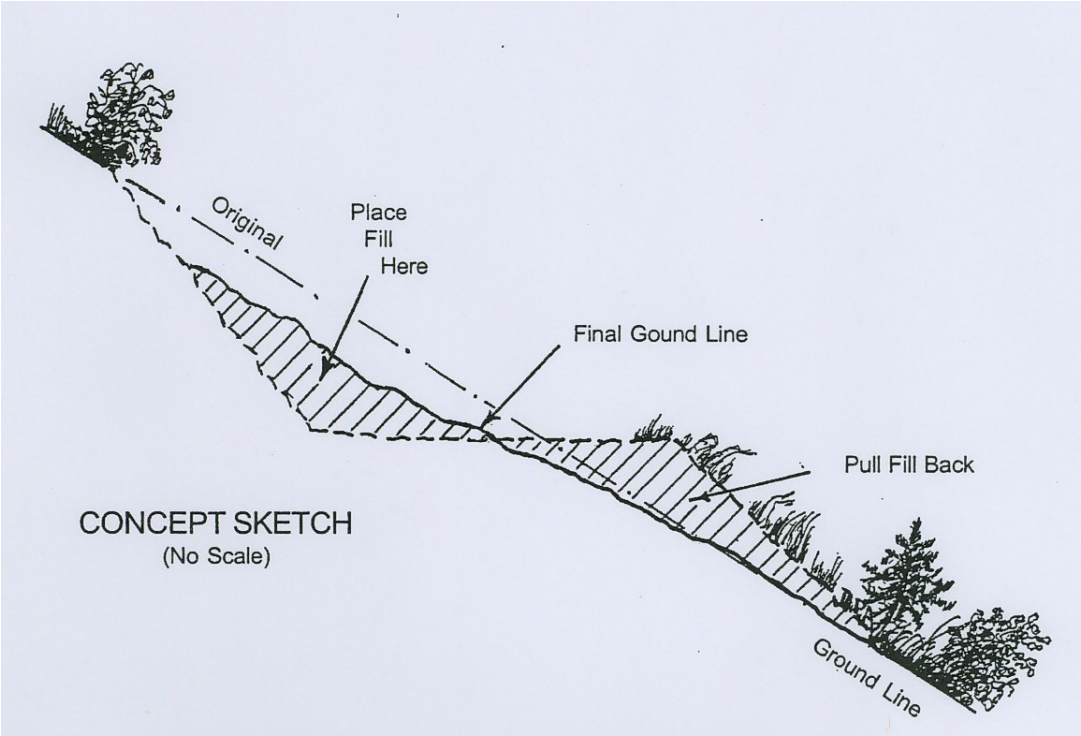
ROAD ABANDONMENT—FILL PULL-BACK GUIDELINES

1. Use an excavator to pull reachable perched, cracked, or very steep fills back

Dustin T. Miller
Director
Idaho Department of Lands
300 N. 6th Street, Suite 103
Boise, ID 83720
Phone: (208) 334-0200

Forest Practices
No. 15
August 2018

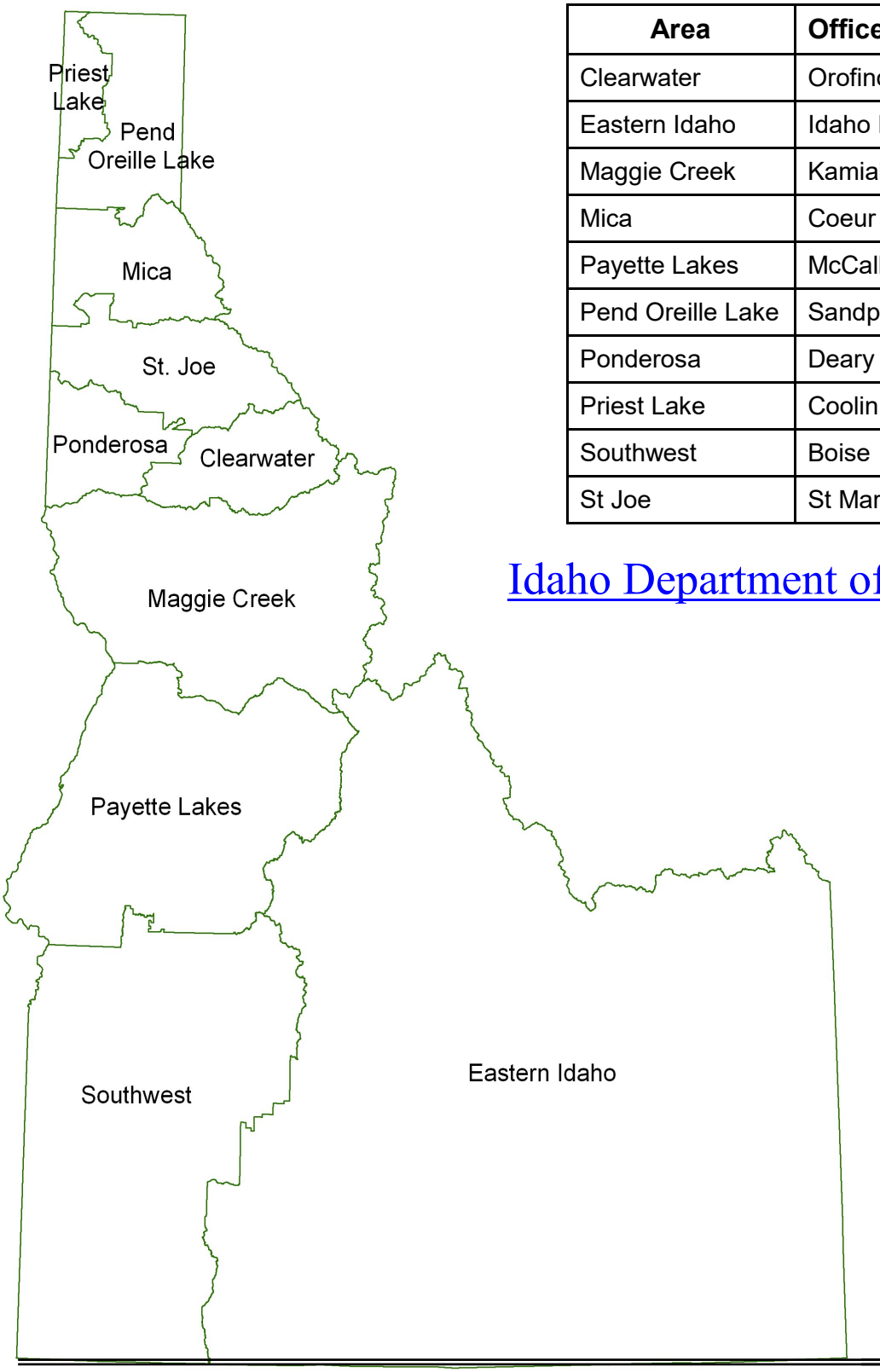
Ara Andrea
Chief, Forestry
Assistance Bureau
3284 W. Industrial Loop
Coeur d'Alene, ID 83815
Phone: (208) 769-1525



up to the road surface. Leave an overall fill slope inclination of about 2 to 1 (h:v) or flatter. (Refer to sketch cross-section above.)

2. Extract any buried slash, stumps, logs, etc., from fill and leave or place it on surface of lower slope.
3. Place and drift pulled-back material on remaining road surface and against base of cut slope. (Refer to cross-section sketch above.)
4. “Dress up” reshaped area to a smooth, generally planar surface without low areas or swales that can trap or concentrate surface water.
5. Where natural swales or draws exist on the hillside, continue these features across the “road” alignment.
6. Fill pull-back exposes bare soil like the original road construction with similar risks of erosion. It is important to scatter available slash, logs, plant grass, and straw mulch over the exposed area. Near streams use slash, berms, silt fences, straw bale dams, log weir dams, and rock dams. Consult an IDL Private Forestry Specialist with questions.

FOR MORE INFORMATION CONTACT ANY IDAHO DEPARTMENT OF LANDS
PRIVATE FORESTRY SPECIALIST



Area	Office Location	Phone
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Idaho Department of Lands Forestry