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JUL 15 1994
BLAINE COUNTY
PLANNING & ZONING/BUILDING

SNOW AVALANCHE HAZARD EVALUATION
PORTIONS OF LAKE CREEK SUBDIVISION
LOCATED AT LAKE CREEK, BLAINE COUNTY, IDAHO

Prepared for Benchmark Associates

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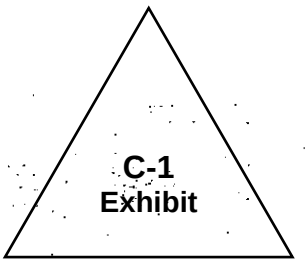
July, 1994



will continue across flats and even uphill.

Avalanches may be put into two general types; loose snow, and slabs. These two may be further subdivided into wet and dry. Loose snow slides occur when individual snow crystals, due to a lack of cohesiveness, reach their angle of repose and slide down the hill in a generally harmless repositioning, known as a sluff. Wet snow sluffs, although slow moving, may present a hazard due to the sheer mass involved. This type of slide usually occurs in the springtime when factors such as high temperatures, warm winds, rain, and solar radiation create a meltwater saturated snowpack which slides on the ground. Slushflow avalanches have been documented on slopes as shallow as 3°, but these are rare occurrences and can generally be disregarded for land planning purposes. On slopes steeper than 50^0, loose snow sluffs occur almost continually during storms, thus preventing accumulations that could become hazardous.

Slab avalanches occur through entire layers in the snowpack and have the potential to become extremely dangerous. The most common type of slab avalanche occurs when large amounts of wind - deposited snow accumulate on a slope in a cohesive slab, sitting on top of a weaker layer. With an appropriate trigger, this slab layer will fracture into blocks of snow and begin moving rapidly down the hill, picking up momentum and entraining more snow as it propagates. It is estimated that 90% of the terminal velocity of the slide is attained in a distance approximately 40 times the flow height; thus, a 3 foot deep slab could approach its maximum velocity in only 120 feet. The slide moves on a bed surface, which may be a deeper layer of snow or the ground. Structural instability in the snow pack occurs due to many factors, some of which are: heavy

Blaine County is typically under the influence of Intermountain climatic factors which usually results in a comparatively shallow snowpack, and cold temperatures; perfect conditions for creating the usual and expected temperature gradient layers (T. G. or "sugar snow") resulting in a weak snowpack structure. This fact, coupled with occasional large Pacific storms, and the necessary terrain characteristics, does make the study site capable of producing occasional avalanches. During typical winters however, much of the area will support only a shallow snowpack, as a result of intense sunshine on the southerly facing slopes. Although these slopes may remain free of snow during parts of many winters, due to their southerly aspect and maximum exposure to the sun, they lend themselves to a fairly common scenario in this area. An early winter snowpack is melted during the sunny days and refreezes at night creating a hard, smooth suncrust. This is followed by a large Pacific storm out of the southwest, leaving up to 3 or 4 feet of new snow. As the front passes, the wind will typically shift to out of the north and heavily wind load these south facing slopes, resulting in large dry snow slab avalanches. The northerly facing slopes south of the road will likely produce frequent small avalanches, and in several areas man made cuts have created short steep slopes capable of producing small avalanches that may not threaten a structure, but could easily overwhelm a person, especially if trapped between a slope and a structure.

Other factors to consider in this area include the effects of creep and glide. Creep is the internal deformation of the snowpack, best described as settlement on an inclined plane. Glide is the slippage of the snow layers with respect to the ground. In areas of deep snow the constant effects of creep and glide can easily move unheated structures, crush vehicles, damage fences, and even

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