Landslide Inventory

IS1-IS2

The first buffer (orange on diagram) consists of a 2:1 horizontal to vertical distance (2H:1V). This buffer results in a minimum buffer distance and the second buffer (described below) results in the maximum buffer distance. The buffer is different for each head scarp and is dependent on head scarp height. For example, a head scarp with a height of 20 feet will have a buffer of 40 feet horizontally.

Water features are from the USGS National Hydrography Dataset (2015). Highways and signed routes were digitized from Oregon Lidar Consortium, 2008-2009 and 2013-2015, 3-foot bare earth lidar digital elevation model data.

An inventory of all existing landslides in this area is shown on Plate 1. We prepared this inventory map by using the protocol developed by Burns and Madin (2009). The inventory was created by using a susceptibility map that was prepared by combining three factors: 1) landslide inventory data taken from previous and existing data, 2) minimal zone buffer, and 3) geologic factors (susceptible geologic units and contacts, slope angles, and preferred direction of movement for each engineering geologic unit polygon). These factors are combined and a final score is produced, but the delineation of the final map should not be used for mitigation applications.

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This map depicts susceptibility to deep landslides in this area. For the purpose of this map, deep landslides can be classified as those that are 7 feet or more in depth. The susceptibility map is based on the average of the horizontal widths of previous or downslope blocks (second buffer). It is assumed that landslides in the inventory may have been mitigated, thereby reducing their level of susceptibility.

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Limitations of the landslide inventory, as discussed by Burns and Madin (2009), include:

1. The inventory is based on existing data and may not account for all landslides.
2. The inventory may not be complete.
3. The inventory may not be accurate.
4. The inventory may not be up-to-date.
5. Some landslides in the inventory may have been mitigated, thereby reducing their level of susceptibility.

Future landslides may render this map locally inaccurate.

A minimal zone buffer was applied around the high susceptibility zone of each landslide deposit. This buffer is based on visual overlap of these four factors: 1) landslide inventory data taken from previous and existing data, 2) minimal zone buffer, and 3) geologic factors (susceptible geologic units and contacts, slope angles, and preferred direction of movement for each engineering geologic unit polygon). These factors are combined and a final score is produced, but the delineation of the final map should not be used for mitigation applications.

The eastern portion of Lane County contains the cities of Eugene, Springfield, and Coburg. Because of the high level of infrastructure, a large number of landslide deposits are found in this area. The inventory map is shown in Plate 1. The map is based on the average of the horizontal widths of previous or downslope blocks (second buffer). It is assumed that landslides in the inventory may have been mitigated, thereby reducing their level of susceptibility.

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