

ROADSIDE LANDSLIDE HAZARD MAP IMPROVES THE EFFECTIVENESS OF SCREENING FOR ROAD FACILITY COMPREHENSIVE INSPECTION

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This paper describes a roadside landslide hazard map that doubles the mapping effectiveness of screening for road facility comprehensive inspection.

The hazard map integrated results of road facility comprehensive inspection, daily patrol and disaster records into a map at a scale of 1:5,000 (Figure 1). The map is characterized by widely screening. The hazard map shows weakness and countermeasures in heavy rainfall on roadside. Weakness shows geographical elements as causative factors by air-photo interpretation. The interpreted geographical element is caused by landslide such as rock-fall, slope failure, rock-mass failure, debris flows, and so on. In the other hand, countermeasure shows countermeasures for roadside slope stability. These countermeasures divided into three ranks which were described in a guideline book on road facility comprehensive inspection in 1996.

Road Bureau, Ministry of Land, infrastructure and Transport (MLIT), government of Japan, carried out a campaign for road facility comprehensive inspection of highways all over Japan from 1996 to 1997. The campaign screened nine kinds of road facilities such as slopes, bridge pier, retaining wall, slopes and so on. These inspection picked up forty-six thousands facilities along national highways to proceed to field survey and ranking. It resulted that seven thousand five hundred sites were needed repairing, fifteen thousand sites were designated to monitoring. Table 1 shows 477 landside disasters with road traffic closures on national highways in the past fifteen years after the campaign. We divided 477 disasters into groups by both of ranks and facilities. We clarified that half of them occurred at non-predictive sites out of screening in the former campaign.

In order to solve these problems, we tried screening widely from roadside to ridges of mountain. It resulted that our new screening method on the roadside hazard map could catch sites needing countermeasures twice as effectively as conventional one.