

1. Title

One Example of Road Tunnel Route Modification Caused by Landslide

2. Authors

K.Fujisawa, N.Kamihara

3. Institution, addresses, and email addresses

Public Works Research Institute, Japan,

1-6, Minamihara, Tsukuba-shi, Ibaraki-ken, 305-8516 Japan

fujisawa@pwri.go.jp

4. Abstract

Road structures, in particular tunnels and bridges, cannot tolerate even slightly displacement of several to several tens of centimeters against landslides; so in case landslide that would be difficult to control the movement by countermeasures were found before road construction, it is suitable to avoid the landslide. However, mass rock creeps do not show an ordinary landslide landform and are difficult to be found out. In some roads, the routes had to be changed after their completion. To prevent the damage by landslides, the risk of landslide should be identified at initial stage of landslide displacement and the routes should be changed. Although the displacement at the initial stage of a landslide were quite small, there would be several cases in which landslides were detected by monitoring deformations of road structures and by conducting appropriate field inspections, and the risk of the landslides were widely recognized and assesses. This paper shows the typical example to change the tunnel route to mitigate the damage caused by landslide.

5. Key word

Road tunnel, Landslide, Mass rock creep, Risk assessment, World heritage

6. Presenting Author Biography

Name: Kazunori FUJISAWA

Date and Place of Birth: 1961, Takamatsu, Kagawa prefecture, Japan

Education: Graduate from Tokyo University of Agriculture and Technology in 1984

Employment:

1984-2003 Ministry of Construction

2003- Team Leader, Erosion and Sediment Control Research Group, Incorporated Administrative Agency Public Works Research Institute