

Zestaphoni -Khasuri railway line/ Georgia - Zvare landslide

Client:

Georgian Railways JSC

Country:

Georgia

Duration:

June 2018 – July 2019

Services:

Site visit, 3-D volumetric model, geotechnical back analysis and slope stability calculations, design review

Project objectives

Consultancy services for the independent checking of the design for the stabilization of Zvare landslide.

Project description

Georgian Railway JSC has started the implementation of the railway modernization project on the railway line between Tbilisi and Makhinjauri Station according to the rules of FIDIC Yellow Book. In May 2017 during excavation works, a huge landslide with a depth of 30- 40 m and a total volume of approx. 1.5 Mio m³ was triggered. Construction works were stopped immediately. The contractor worked out a remediation concept, which foresees a massive unloading by removing another 1 Mio m³ of soil in the upper part of the slope.

Project data

Total sliding volume: 1.460.000 m³

Depth of slide: 30- 40 m

Length of railway line affected: 250 m

Project specifics

The project area is located in Central Georgia within the Transcaucasian region between two major thrust faults in a NNW-SSE compression regime. Therefore, the whole region is highly affected by tectonic faulting and folding. In the project area, there has been an ancient, inactive landslide even before construction works have started. This old slide was reactivated due to the recent excavation works.

Services

- Site visit, geological and geotechnical appraisal
- 3-D modelling of the sliding mass
- Back analysis and slope stability calculations
- Design review of the contractor's remedial design
- Expert opinion on design parameters and additional investigation

