

Geophysical Survey of Landslide Movement and Mechanism in Gorontalo Outer Ring Road, Gorontalo

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Abstract: Gorontalo infrastructure development focus on improving transport efficiency through the development GORR (*Gorontalo Outer Ring Road*). The Government has set the cost of Rp. 750 billion rupiahs for GORR construction and planned will be completed by 2019 but constrained by landslides. This research aims to reconstruct and identify the type and mechanism of a landslide at GORR (*Gorontalo Outer Ring Road*). The result of this research is Landslide type and mechanism at research area. The method used is 2D geoelectrical resistivity with Wenner-Schlumberger configuration. Landslide mechanism is analyzed based on the resistivity value table on Vingoe (1972) and supported by geomorphologic and lithologic data. Based on geophysical data, the top layer with a resistivity value of about 30 Ωm interpreted as clayey marl. Subsurface conditions showed blocks of reworked limestone with resistivity value of about 132 Ωm and marked red-purple colors. These blocks of limestone interpreted as the result of weathering process and buried in clastic limestone. The Landslide movement type is sliding movement and concluded as Rockslide. There is a potential for subsurface landslide blocks occur caused by weathering process on fractures in the research area. The future prevention steps are by increasing the absorption of water by planting in the nets or prevent water infiltration in the landslide area. In addition, the manufacture of landslide retaining wall is also required.

Keywords: GORR; Reconstruct, Geoelectrical Resisitvity; Rockslide.
