

APPLICATION OF GEOGRAPHIC INFORMATION SYSTEM (SIG) TO ROAD CONDITION DATA USING BINA MARGA METHOD

Student Name : Rahmat Hidayat
NIM : 4204201367
Supervisor : Hendra Saputra, M.Sc

ABSTRACT

Roads are vital infrastructure that supports the economy and development of a region. Rupaat Island in Bengkalis Regency, Riau, has great tourism potential, but its access depends on good road conditions, especially the Batu Panjang - Pangkalan Nyirih road section. According to the Minister of Public Works Regulation No. 13/2011 on the Procedures for Road Maintenance and Surveillance, road condition surveys are conducted at least 2 (two) times in 1 (one) year. In this context, a method is needed as a guide to analyze road condition data based on damage at that location. This method does provide an overview of road conditions, but is limited in terms of easy-to-understand data visualization. This research uses the Bina Marga Method and Geographic Information System (GIS) to analyze and map road damage. The results of this study where the assessment of the level of damage to the road surface with a combination of the RCI value of 8.2 with the IRI value of 2.1, and the SDI value of 9.1 which shows that at STA 42+000 - STA 51+000 the road is 100% in good condition and requires routine maintenance. The ArcGIS implementation identified 239 transverse crack points, 5 random crack points, 4 pothole points, and 1 grain release point, for a total of 249 damage points on the 9-km road.

Keywords: *Road Damage, RCI, IRI, SDI, GIS*