

**APPLICATION OF A GEOGRAPHIC INFORMATION  
SYSTEM (GIS) IN THE ANALYSIS OF ROAD DAMAGE ON  
FLEXIBLE PAVEMENT SURFACE USING THE  
BINA MARGA METHOD**  
*(Case Study: Road Section Pelintung (Limits Kab. Bengkalis) – Sepahat - Sei.  
Pakning Sta 42+000 – Sta 52+560)*

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***ABSTRACT***

*Pelintung road section (Bengkalis Regency boundary) – Sepahat - Sei. Pakning Sta. 42+000 – Sta 52+560 is a cross-provincial road which is a road connecting Bengkalis Regency and Dumai City as well as being an access road for local residents to support the economy, so the quality of the road on this road section is very important to maintain so that the road remains in good condition and comfortable when passed by the driver. This research aims to determine the value of road conditions on the Pelintung road section (Bengkalis Regency boundary) – Sepahat - Sei. Pakning STA (42+000 – 52+560) so that it can determine the type of road maintenance program. The methods used in this research are the Road Condition Survey (RCS), Road Condition Index (RCI), International Roughness Index (IRI), Surface Distress Index (SDI), Bina Marga 1990 and Geographic Information Systems (GIS) methods to analyze and map road damage. Based on road conditions, there are types of repair actions that will be carried out, namely routine maintenance of 79 sta or 7.86 km long, periodic maintenance of 10 sta or 1 km long, and road improvements totaling 17 sta or 1.7 km long, and based on the implementation results map. road damage data using ArcGIS, there are 295 damage points consisting of Cracks (199), Holes & Patches (64), Wheel Marks/Grooves (8), Subsidence/Subside (14), and Surface Roughness (10) with a total road length 10.56 km.*

**Keyword : Road Damage, RCS, RCI, IRI, SDI, Bina Marga, GIS**