ABSTRAK

ANALISIS TINGKAT KERUSAKAN PERKERASAN JALAN MENGGUNAKAN METODE PCI DAN SDI PADA RUAS JALAN SABAR JAYA KABUPATENN BANYUASIN

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Ruas Jalan Sabar Jaya, Kabupaten Banyuasin, merupakan salah satu jalan yang berperan penting dalam mendukung mobilitas masyarakat dan distribusi barang. Meningkatnya volume lalu lintas serta penggunaan jalan secara terus-menerus dapat menyebabkan berbagai jenis kerusakan perkerasan yang memengaruhi tingkat pelayanan dan kenyamanan pengguna jalan. Penelitian ini bertujuan untuk mengidentifikasi jenis dan tingkat kerusakan jalan, menganalisis kondisi perkerasan menggunakan metode *Pavement Condition Index* (PCI) dan *Surface Distress Index* (SDI), serta menentukan rekomendasi penanganan berdasarkan hasil analisis kedua metode tersebut. Penelitian dilakukan melalui survei visual pada 83 segmen jalan dengan panjang total 8.300 m. Jenis kerusakan yang ditemukan meliputi retak kulit buaya, retak memanjang dan melintang, lubang, tambalan, pelepasan butir, serta amblas. Hasil analisis metode PCI menunjukkan bahwa 40 segmen (48,19%) berada dalam kondisi baik, 16 segmen (19,28%) kondisi sedang, 12 segmen (14,46%) rusak ringan, dan 15 segmen (18,07%) rusak berat. Sementara itu, hasil analisis SDI menunjukkan 50 segmen (60,24%) dalam kondisi baik, 30 segmen (36,14%) kondisi sedang, dan 3 segmen (3,62%) rusak berat. Berdasarkan rekomendasi penanganan, metode PCI menghasilkan 40 segmen untuk pemeliharaan rutin, 16 segmen pemeliharaan berkala, 12 segmen rehabilitasi jalan, dan 15 segmen rekonstruksi jalan. Sedangkan metode SDI menghasilkan 50 segmen untuk pemeliharaan rutin, 30 segmen pemeliharaan berkala, dan 3 segmen rekonstruksi jalan. Perbedaan hasil tersebut menunjukkan bahwa metode PCI memberikan penilaian kondisi dan rekomendasi penanganan yang lebih detail, terutama dalam mengidentifikasi segmen yang memerlukan rehabilitasi dan rekonstruksi. Oleh karena itu, metode PCI dapat digunakan sebagai dasar utama dalam menentukan prioritas penanganan, sedangkan SDI dapat digunakan sebagai metode pendukung dalam evaluasi kondisi permukaan jalan.

Kata Kunci: *Pavement Condition Index* (PCI), *Surface Distress Index* (SDI), Kerusakan jalan, Pemetaan, Kondisi Perkerasan.

ABSTRACT

ROAD PAVEMENT CONDITION ANALYSIS USING PCI AND SDI METHODS ON JALAN SABAR JAYA, BANYUASIN REGENCY

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Sabar Jaya Road, Banyuasin Regency, is one of the roads that plays an important role in supporting community mobility and the distribution of goods. Increasing traffic volume and continuous road use can cause various types of pavement damage that affect the level of service and comfort of road users. This study aims to identify the types and levels of pavement damage, analyze pavement conditions using the Pavement Condition Index (PCI) and Surface Distress Index (SDI) methods, and determine appropriate maintenance recommendations based on the results of both methods. The study was conducted through a visual survey of 83 road segments with a total length of 8,300 m. The types of pavement damage identified included alligator cracking, longitudinal and transverse cracking, potholes, patching, ravelling, and depression. The PCI analysis results showed that 40 segments (48.19%) were in good condition, 16 segments (19.28%) were in fair condition, 12 segments (14.46%) were in minor damage condition, and 15 segments (18.07%) were in severe damage condition. Meanwhile, the SDI analysis showed that 50 segments (60.24%) were in good condition, 30 segments (36.14%) were in fair condition, and 3 segments (3.62%) were in severe damage condition. Based on the maintenance recommendations, the PCI method resulted in 40 segments requiring routine maintenance, 16 segments requiring periodic maintenance, 12 segments requiring road rehabilitation, and 15 segments requiring road reconstruction. Meanwhile, the SDI method resulted in 50 segments requiring routine maintenance, 30 segments requiring periodic maintenance, and 3 segments requiring road reconstruction. These differences indicate that the PCI method provides a more detailed assessment of pavement condition and maintenance recommendations, particularly in identifying segments requiring rehabilitation and reconstruction. Therefore, the PCI method can be used as the primary basis for determining maintenance priorities, while the SDI method can be used as a supporting method for evaluating road surface conditions.

Keywords: Pavement Condition Index (PCI), Surface Distress Index (SDI), oad damage, mapping, pavement condition.