

LIFE CYCLE COST ANALYSIS OF RIGID PAVEMENT ROADS IN BENGKALIS DISTRICT

(Case Study: Kelemantan Road STA 0+000 – STA 1+000)

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ABSTRACT

In general, roads are planned to have a certain service life according to the needs and existing traffic conditions, for example 10 to 20 years, with the hope that the road can still serve traffic with a level of service in good condition. To achieve service in good condition during the life of the plan, road maintenance efforts are required. According to the Road Pavement Design Manual (2013), one of the criteria that must be met in designing road pavements is a minimum life cycle cost.

In planning for the construction of a rigid pavement (Rigid Pavement) for Student Street in Kelemantan Village, Bengkalis District, Bengkalis Regency, the Pd-T-14-2003 method was used. Therefore, the authors reviewed, designed and designed the Student Road in Kelemantan Village in order to obtain thick pavement results and plans. budget required. For the total budget plan required, that is Rp. 9,367,300,000.00.

Life Cycle Cost is a method used to obtain various possible alternatives in decision making and describes the present and future value of a road construction development, namely by calculating and considering inflation and interest rates. . The initial construction cost or initial cost incurred is Rp 1,445,028,545.00. The maintenance cost for the LCC is Rp 16,362,087,648.00. The total cost for the life cycle of the LCC is Rp17,807,116,193. In calculating the NPV with an average bank interest rate (4.5%) is Rp 6,687,549,757.43. At the highest bank interest rate (5.6%), the NPV was Rp 5,531,083,946.09, while at the lowest bank interest rate (3.5%) the NPV reached Rp 8,023,309,632.70.

keywords: Analysis, Cost, Life Cycle Cost, Road Maintenance