

ABSTRACT

COMPARISON ANALYSIS OF THE COST OF REPAIRING THE ANGKE RIVER WITH CONCRETE PARAPET AND FLAT SHEET PILE

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Tangerang City is one of the cities that is often inundated by floods. Pedurenan Sub-District, Tangerang City is one of those affected by flooding caused by the overflow of the Angke River. One alternative for flood control is the planning of embankments. Planning for the Kali Angke embankment is one of the steps that can be taken to reduce flooding in Pedurenan Village. The researcher conducted a hydrology and hydraulics analysis using the HEC-RAS software to find out rainfall data and flood water levels as data for flood control planning needs. The researcher also plans the budget for the repair of the Angke River cross section contained in the analysis of the unit price of materials, labor costs, and work. The capacity of the reservoir in the existing conditions is not able to withstand the large flood discharge planning for a 100-year return period of $57,537 \text{ m}^3/\text{s}$ on the left side which causes flooding. Flood control activities in this study are planned embankments in the form of concrete parapet embankments with planned dimensions $H = 2.66 \text{ m}$; $B = 1.35 \text{ m}$; $A = 0.45 \text{ m}$; $D = 0.45 \text{ m}$ and flat sheet pile with planned dimensions $B = 50 \text{ cm}$; $H = 32 \text{ cm}$; Length = 500 cm . The design of the embankment using a concrete parapet is Rp. 3,243,968,187.08, - and using a flat sheet pile of IDR 1,725,000,000, - with a difference in the cost of the concrete parapet embankment and flat sheet pile of IDR. 1,518,968,187.08 from the two comparisons of planning costs for the Kali Angke embankment it is more profitable to use flat sheet pile embankments.

Keyword: Flood, The Angke River, Concrete parapet, Flat sheet pile, Costs for the Kali Angke embankment

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