

PENANGANAN BANJIR SUNGAI BANJIR KANAL TIMUR KOTA SEMARANG

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ABSTRACT

Banjir Kanal Timur River composes flood control system in the city of Semarang. Situated in the left part of the city, the river is ± 14.50 km long. Banjir Kanal Timur River flow originates from Penggaron River through Pucanggading outlet, drainage outlet of Kedung Mundu River, Candi River, Bajak River, drainage of Kartini pump and drainage of Sawah Besar/Sambirejo pump and its mouth meets the Java sea. Every time rainy season comes, flood-related problems come up, to the dismay of people who live along the Banjir Kanal Timur River riverbank. This is because river flow is slowed down and the river's cross section capacity decreases.

The research was conducted to study whether the planning of PT. Megacitraagung Persadaindoraya Semarang in 2003 could still flow the discharge of recurrence interval design of 25 years to be compared to the discharge of several recurrence interval designs to be simulated with (Q_{25} , Q_{30} , Q_{40} , Q_{50} , Q_{75} and Q_{100}) years simulation with flood hydrograph as the input in the upper course using Synthetic Unit Hydrograph Gama I. To analyze hydraulic cross section capacity, the software HEC-RAS version 4.0 is used.

Result of the simulation in existing condition of (Q_{25}) years recurrence interval, maximum discharge of 387.93 m³/s overflow occurred in several River Stations, which are RS. 129 to 84, and reached maximum speed in RS. 103 = 3.57 m/s. Design condition simulation for several recurrence intervals, which is Q_{25} , overflow did not occur. In Q_{30} , overflow occurred in RS. 101. Q_{40} , overflow occurred in RS. 112 and 101. Q_{50} , overflow occurred in RS. 117, 116, 115, 114, and 101. Q_{75} overflow occurred in RS. 129, 124, 123, 117, 112, 101, 95 and 92. Q_{100} overflow occurred in RS. 126, 123, 121, 120, 119, 118, 117, 116, 112, 101 and 92. Based on the flow simulation result, it is found that there is some areas that prone to flood overflow, particularly in the lower stream and the middle stream. Several measures to keep the river's function intact in compliance with the law include: riverbank building maintenance, riverbank building regulation, embankment elevation and normalization, and community behavior through extension and socialization programs.

Keywords: Flood, Cross Section Capacity, Embankment, Normalization and Mitigation

