STUDY OF LAND RECLAMATION IMPACTS IN KENJERAN COASTAL AREA WITH EMPHASES ON CURRENT PATTERN AND SEDIMENT TRANSPORT

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ABSTRACT
Land reclamation is an engineering effort to create new land area in sea. One of the reclamation plans in Surabaya coastal area is the land reclamation that covers Sub District of Bulak in north eastern part and extended to District of Kenjeran in eastern part (this reclamation zone called reclamation zone III). This land reclamation work was designed to provide new land of approximately 320 hectares. This final project carefully discusses the changes in tidal current patterns due to the development of new land area as result of reclamation project. More specifically, the change in current velocity at every selected control point for each design alternative was reviewed. Commercial package software Mike 21 was use as main tool for modeling the change in current pattern and sedimentation. Analyzes show that amount of sediment on the existing condition is -627.33 m³. The volume of sedimentation on the existing condition then was compared to three designed reclamation alternatives. The differences of sedimentation volume between the existing condition and the three alternatives give -73.97.69 m³, -14.11 m³ and -45.43 m³ respectively for alternative 1, alternative 2 and alternative 3. The negative signs mean the state of erosion. Even though the erosion process was captured through simulation, however the value is relatively small compared with total area. This means that land reclamation in the studied area has no significant effects.

Key words: Land reclamation, tidal current pattern, sedimentation