

CHAPTER V

CONCLUSIONS AND RECOMENDATION

In this chapter, the analysis of Batang Anai River Hydrology and Hydraulic concluded into several important points, this chapter also considers some suggestion that hopefully might help future use in such analysis.

5.1. Conclusions

Results of the analysis on bridge design which planned to be built on Batang Anai River can be concluded on to these points:

1. Peak discharge values on Batang Anai River are calculated by using 3 methods and SUH ITB-I method are chosen for next step calculation because its value are the closest with the calculated AWLR measurement, the result is 1250.17 m³/s for 100 years, and the time peak of discharge is 9.17 hours.
2. HEC-RAS® Software analysis on Batang Anai river shows that pillar of the bridge that planned to be built on the river did alter a relatively small amount of change on the water surface profile of the downstream side of the bridge up to 6 Cm on the depth of water surface and 0.06 m/s on water current velocity.
3. Despite the alteration on the water surface profile, the bridge design however still met the safety requirement on its vertical clearance and horizontal clearance according to BMS 92 (Bridge Design Manual 1992)

4. Hydraulic calculation on Batang Anai river for building the highway bridge from both writer analysis and consultant report indicating that water surface and water velocity on the upstream side did altered but writer calculation did not find any altered water current on the downstream side of the bridge which is found on the consultant report. However, the bridge design is safe to be build.

5.2. Rekomendasi

1. In advance of analyzing one watershed hydrology, it must be acknowledged that choosing a suitable method for analysis is important due to each method has its own characteristic for analysis based on the watershed condition and external factor that might be weight in the factor for the result must be considered.
2. Assuring that each data used in the analysis is important because there might be some human error in obtaining data or mechanical error on the device used that resulted in abnormal data that can intervene in the actual result.
3. In the case of constructing a building on a water vessel, it must be added a safety factor in designing it considering that hydrology analyses mostly are an approachable method to predict it and the result may not always be the same with the actual future condition.