

## CHAPTER I

### INTRODUCTION

#### **1.1 Background**

In the last 5 years, Infrastructures construction is one of the main priorities of the government. Since 2015, the budget for infrastructures is always increasing, starting from 155 trillion Rupiah in 2014, up to 410 trillion Rupiah in 2018. The construction of Infrastructures is costly, and difficult to be done since Indonesia is an Archipelago country that has over than 17,000 islands. The infrastructures construction consists of the construction of new harbors, new airports, new dams, new bridges, new national roads and new highways. Those infrastructures are important to boost the economic growth of Indonesia.

Kementrian PUPR, or the Ministry of Public Works and Housing has finished the total construction of 3,432 km of national roads until 2018, including the construction of national roads in the border of Papua, Borneo and East Nusa Tenggara. The ministry also has finished the construction of 941 kms new highways, with the objective to construct another 911 kms until the end of 2019. These constructions, of course, need a lot of material to create a high quality & long lasting pavements.

The thickness and the type of the pavement construction will control a large sum of the project cost. Engineers have to take the conditions of the soil below the pavements into account since the pavements will be supported by the subbase layer to carry the weight of the traffic loads in addition to the pavement loads. The main