

**A PROJECT REPORT SUBMITTED TO THE SCHOOL OF  
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OF AN  
ADVANCED DIPLOMA IN CIVIL ENGINEERING**

**CALIBRATION OF HYDRODYNAMIC  
MODELLING FOR SUNGAI LUKUT.**

**BY**

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## TABLE OF CONTENTS

| <b><u>DESCRIPTION</u></b> | <b><u>PAGE</u></b> |
|---------------------------|--------------------|
| Acknowledgments .....     | i                  |
| Table of Contents .....   | ii                 |
| List of Tables .....      | vi                 |
| List of Figures .....     | vii                |
| List of Symbols .....     | viii               |
| Abstract .....            | xi                 |

### CHAPTER ONE

|     |                          |   |
|-----|--------------------------|---|
| 1.0 | INTRODUCTION             |   |
| 1.1 | General .....            | 1 |
| 1.2 | Objective of Study ..... | 4 |
| 1.3 | Scope of Study .....     | 4 |
| 1.4 | Methodology .....        | 5 |

### CHAPTER TWO

|     |                                      |   |
|-----|--------------------------------------|---|
| 2.0 | LITERATURE REVIEW                    |   |
| 2.1 | General .....                        | 6 |
| 2.2 | Stream And River Control Work. ....  | 7 |
| 2.3 | Movement of Sediment .....           | 8 |
| 2.4 | Description of Sediment Motion ..... | 8 |

## **ABSTRACT:**

With the Construction of the Kuala Lumpur Airport in Sepang many surrounding areas will be undergoing rapid transformation and developments. One of the effected area is Sungai Lukut. Sungai Lukut is the main river of Sungai Tanah Merah, Sungai Jimah, Sungai Puting, Sungai Sendayan and Sungai Pak Mail. The location of Sungai Lukut is at Port Dickson, Negeri Sembilan. The study of these thesis is to predict the water level, flow discharge and sediment transport at the proposed development area. The MIKE 11 software, a modeling software for rivers and channels will be used to model the area.

The result from field observation is compared with result from computer modeling using software MIKE 11, which is normally used to calibrate the river flow. The theory is used to discuss and explain some observed behaviour of real river flow and possible implications for the river after the development.

With this information it is then possible to derive a cost effective strategy for a detail assessment of outfall feasibility at a limited depth on sites. In this way, time and money will not be wasted in collecting appropriate or relevant field data or examining in detail options which should have been discarded at an earlier stage.

# **CHAPTER 1**

## **1.0 INTRODUCTION**

### **1.1 General**

The State government of Negeri Sembilan has gazetted an area in the vicinity of Sungai Lukut for development. The development will naturally impose a heavy load on the river. The Computer Software MIKE 11 is currently used to model the effect of this development on the river. As part of the modeling exercise some data will be required as parameters for input. These data have to be obtained by taking samples from the river and also from other sources. The sampling processes include taking bed sediment, flow discharge and measurement of river water level with time. These data will be used to model the area of the river flow and the development area. The discharge will be measured from the river cross section and water level. The water level is measured from the actual water level with time. The MIKE 11 simulates the river model by assuming initial bed sediment roughness.

In this project the specific area that is being studied is located at the border between Negeri Sembilan and Selangor as shown in Figure 1.1. It will be located approximately 3 to 6 km from Kuala Sungai Lukut on the river mouth as shown in Figure 1.2