

**UNIVERSITI TEKNOLOGI MARA**

**GIS-BASED APPROACH USING AHP METHOD  
FOR SELECTING SOLID WASTE DISPOSAL  
SITE IN POKOK SENA, KEDAH**

**NURUL NATRAH BINTI JAMALUDDIN**

Thesis submitted in fulfillment  
of the requirements for the degree of  
**Bachelor of Science Surveying and Geomatics (Honours)**

**Faculty of Architecture, Planning and Surveying**

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## AUTHOR'S DECLARATION

I declare that the work in this thesis/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Under Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student	:	Nurul Natrah binti Jamaluddin
Student I.D. No.	:	2013597771
		AP220 – Bachelor of Surveying Science and
Programme	:	Geomatics (Honours)
Faculty	:	Architecture, Planning & Surveying
		GIS-Based Approach using AHP Method for Selecting
Thesis/Dissertation Title	:	Solid Waste Disposal Site in Pokok Sena, Kedah
Signature of Student	:	.....
Date	:	July 2017

### Approved by:

I certify that I have examined the student's work and found that they are in accordance with the rules and regulations of the Department and University and fulfills the requirements for the award of the Degree of Bachelor in Surveying Science and Geomatics (Honours).

Name of Supervisor	:	NOORAZWANI MOHD RAZI
Signature and Date	:	

## ABSTRACT

Nowadays, solid waste management has become one of the most serious global environmental issues especially for developing countries like Malaysia. This is due to the population growth which has caused an increase in residential, commercial and infrastructure development. This negatively affects the environment and life quality. Despite the many facilities being provided by the municipal authorities to the communities, their solid waste management still did not achieve its objectives and satisfactory level. Thus, several territorial and legal factors in landfill siting should be considered in order to reduce negative impacts on the environment. The aim of this study is to evaluate present location of dumping site at JABI and propose a new location of dumping site in Pokok Sena, Kedah using Geographical Information System (GIS) and remote sensing (RS) technology. The types of data used are primary and secondary data. These includes Digital Elevation Model (DEM), satellite image, field observations and different geographical factors. Furthermore, these data were processed through several methods of GIS operation for evaluating present dumping site such as digitizing, buffering, overlaying, spatial analysis and Analytical Hierarchical Process (AHP). The result shows some suitable dumping sites successfully identified. This study proves that GIS and RS techniques are useful as important tools in selecting suitable sites for solid waste disposal. In addition, it serves as an effective identification of suitable solid waste disposal site that helps to solve the environmental issues.

**Keywords:** solid waste, Geographical Information System (GIS), Analytical Hierarchical Process (AHP), remote sensing (RS), landfill siting

## TABLE OF CONTENTS

	PAGES
CONFIRMATION BY PANEL OF EXAMINERS	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ABSTRAK	v
ACKNOWLEDGEMENT	vi
TABLE OF CONTENTS	vii
LIST OF FIGURES	x
LIST OF TABLES	xi
LIST OF ABBREVIATIONS/NOMENCLATURE	xii
CHAPTER 1	
INTRODUCTION	1
1.1 Research Background	1
1.2 Research Gap	2
1.3 Problem Statements	6
1.4 Aim & Objectives	7
1.4.1 Aim	7
1.4.2 Objectives	7
1.5 Research Questions	8
1.6 General Methodology	8
1.7 Scope & Limitations	9
1.8 Significance of Study	9
1.9 Structure of Thesis	9
1.10 Summary	11
CHAPTER 2	
LITERATURE REVIEW	12
2.1 Introduction	12
2.2 GIS-Based Approach using AHP Method for Selecting Solid Waste Disposal Site in Pokok Sena, Kedah	12

3.5.4	Analytical Hierarchical Process (AHP)	41
3.5.4.1	Reclassify	42
3.5.4.2	Weighted Overlay using AHP method	42
3.6	Summary	43

## **CHAPTER 4**

<b>RESULT &amp; ANALYSIS</b>		44
4.1	Introduction	44
4.2	Criteria of Selecting Suitable Solid Waste Disposal Site	45
4.2.1	River Stream	45
4.2.2	Road Network	46
4.2.3	Landuse Type	48
4.2.4	Slope	49
4.3	Evaluating the Existing Solid Waste Disposal Site in Pokok Sena District	51
4.4	Selecting Suitable Site for Solid Waste Disposal	54
4.4.1	Calculation of Factor Weights and Overlay the Identified Suitable Sites	54
4.5	Summary	57

## **CHAPTER 5**

<b>CONCLUSION</b>		58
5.1	Introduction	58
5.2	Conclusion	58
5.3	Recommendations	59

<b>REFERENCES</b>	60
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## **APPENDICES**

### **APPENDIX A**

### **APPENDIX B**

### **APPENDIX C**