

building surveying department

faculty of architecture, planning and surveying MARA UNIVERSITY OF TECHNOLOGY, SHAH ALAM, SELANGOR DARUL EHSAN.

STUDY ON MAINTENANCE OF FEDERAL ROAD

DISSERTATION BACHELOR (Hons) IN BUILDING SURVEYING OCTOBER 2007

Prepared by: NUR MUHAMMAD HATTA BIN SULEIMAN 2005737943

Supervisor: SR. MAHAYUDIN BIN MAHMOOD

ABSTRACT

The poor condition at Malaysia's road is an old issue. It always issued but it still in same condition. This problem occurs due to the increasing numbers of vehicles recently, lack of provision and poor maintenance work.

The command problems is damage to the road, such as hole, billowy surface, underground pipe leaking which is can cause holes at pavement, out of condition of road's furniture, unleveled road's shoulders and blockage drainage. These command problems will causes the road become dirtier and bring problems to the users. Among other new issues are, metal scrap from lorry, scatted on the road surface. It's becoming problem to other user such as puncture and may cause an accident.

This dissertation almost focusing to find parties who were responsible to carry out the maintenance works to the Federal Road especially at the Central and East Zone, which can be looking through theirs scope of maintenance works and how they implement the maintenance. This dissertation is also found the command road's problem, the maintenance schedule and budget. To clearly this topic, this dissertation was enclosed with three (3) case studies;

- 1. Route 5 (Banting Klang)
- 2. Route 5 (Klang Kuala Selangor)
- 3. Route 3214 (Sg. Buloh Batu3, Shah Alam)

ACKNOWLEDGEMENTS

بسماللهالرحمنالرحيم

Alhamdulillah, this dissertation was made possible by the efforts of many individuals, whose assistance is greatly appreciated. Firstly, thanks a lot to my grateful supervisor Mr. Mahayudin b. Mahmood, for the guidance and supervision.

Special thankful extended to Mr. Razali Che Embi, Senior Assistant Director

from Road Maintenance & Management Unit (Central & East Zone), Roads Branch and Mr. Jasni also from UPPJ for helping and providing me the valuable information and data.

Finally, I would also like to convey my appreciation to all of my lecturers, classmate and not forget to my beloved family. May joy and experience we had together, be in our mind, Insyaallah. May Allah bless you.

ألسلام عليكم

TABLE OF CONTENTS

CHAPTER 1

		CONTENTS	PAGE
1.1		Introduction	1
1.2		Issues	3
1.3		Objective Of Dissertation	6
1.4		Scope Of Dissertation	7
1.5		Methodology Of Dissertation	8
	1.5.1	Collecting the data	8
• • • • •	1.5.2	Data analysis	8
	1.5.3	Conclusion and recommendation	8

CHAPTER 2

		CONTENT	PAGE
2.1		Road Definition	9
	2.1.1	Types Of Road	9
	2.1.2	Road Materials	10
	2.1.3	Usage And Etymology	10
	2.1.4	Road's History	11
	2.1.5	Road Transport Policy	12
2.2		Do You Know What Maintenance Is?	13
	2.2.1	The Objectives Of Maintenance	15
	2.2.2	Benefits	15
2.3		Planned Preventive Maintenance	16

CHAPTER 3

		CONTENTS	PAGE
3.1	<u></u>	Road Maintenance	18
	3.1.1	Drainage System Maintenance	20
	3.1.2	Road Surface Maintenance	23
	3.1.3	Emergency Storm Response	25
3.2		Road Maintenance Scenario In Malaysia	27
3.3		Road Maintenance Management Unit (UPPJ)	29
	3.3.1	Introduction	29
	3.3.2	Main Activities	30
	3.3.3	The Scope of Works	31
3.4		Road Problems	33
	3.4.1	Types of defects	34

CHAPTER 4

	CONTENTS	PAGE
4.1	Maintenance Work And Procedure	36
4.1	.1 Pavement	36
	Maintenance of Road Shoulder (Re-grading and	
4.1	.2 Topping-Up Works)	50
4.1	.3 Grass Cutting	53
4.1	.4 Maintenance of Road Furniture	55
4.1	.5 Maintenance of Bridges and Culverts	61
4.1	.6 Cleaning of Drains	65
4.1	1.7 Landscaping Work	68
4.1	.8 Routine Inspection	80
4.2	Introduction Of The Case Study	82
4.2	2.1 Route 5 (Banting-Klang)	83
4.2	2.2 Route 5 (Klang-Kuala Selangor)	84
4.2	2.3 Route 3214 (Sg. Buloh-Batu 3)	86