

CHAPTER I

INTRODUCTION

A. Background

Increased economic needs and rapid movement of society giving consequences (duties) to the government both central and local to accelerate infrastructure provision and maintenance transportation of roads and bridges is good. The post-infrastructure construction policy becomes more significant. This is the due initiation of difficulties in activities maintenance, rehabilitation, and management of existing road networks in order to remain can be used properly.

Road infrastructure burdened by high traffic volume and repeatedly will cause a decrease in road quality. As the indicator can be known from the road surface conditions, both structural conditions or functional that suffered damage. Road surface conditions and other parts of the road need to be monitored to determine the condition of the road surface who suffered the damage. Preliminary research on the condition of the road surface is with conduct a visually meaningful survey by looking and analyzing the damage is based on the type and extent of the damage to use as a basis for conducting maintenance and repair activities.

Assessment to know and classify types and levels of damage to road pavement, and set the value of pavement condition by finding the value of the Pavement Condition Index (PCI) and effort improvements. Assessment of pavement conditions is the most important aspect in terms of determining road maintenance and repair activities. To assess the condition of the pavement, it is necessary first to determine the type of damage, causes, and the extent of damage that occurred.

The importance of good road pavement construction conditions is sought able to meet the requirements of traffic and structural requirements. The terms of the traffic condition are the flexible pavement construction viewed from the security and the convenience of traffic, shall meet the

conditions: a surface that is flat, the surface is quite stiff, the surface is quite rough and the surface is not shiny.

The condition of the structural requirements of road pavement construction is considered from the ability to bear and spread the load. Adi Sumarmo Street – Solo Km 0+000 – Km 2+000 does not fulfill the condition because it is suffered from a lot of damaged, collapsed, grooves, holes, cracks, and surface deformed.

Handling of road damage is intended to keep the road network run its role well. This can be fulfilled if the road segment that exists in the conditions of the Pima's ability. Based on these then it is necessary to re-evaluate to know the condition of the existing road. Once the results are identified then it can be determined the handling steps road damage, this is part of road maintenance. On this basis, the handling of road damage should be immediately implemented for preventing widespread damage, resulting in pavement construction both maintenance and supervision is necessary. Basically road maintenance should be able to bring the road to the condition steady service capability with longer service life.

In meeting the demands to improve a good maintenance system, government especially the Department of Public Transport, in this case, Dinas Bina Marga as the Road Coach has developed a road maintenance system National and Provincial Roads supported by the designed equipment specifically for this activity, namely Routine Maintenance Unit (UPR). To be able to arrange a routine maintenance program and how to handle it complete field data support is required that can be obtained through a survey of road conditions. The road condition survey is done visually, is to look directly at the type and type of damage, so the results obtained from such observations may collect accurate and reliable data determined how to fix it.

B. Research Problem

Based on the background above, the problems in this research can be written as follows:

1. What is the type of damage that occurred on Adi Sumarmo Street – Solo Km 0+000 – Km 2+000?
2. What is the value of the Pavement Condition Index (PCI)?
3. What solution should be done in handling the damage that occurred on the segment Adi Sumarmo Street– Solo Km 0+000 – Km 2+000?

C. Objectives of Research

1. To identify the types of road damage on the road.
2. To determine the value of the Pavement Condition Index.
3. Handling construction damage that occurred on the segment Adi Sumarmo Street– Solo Km 0+000 – Km 2+000.

D. Benefits of Research

This research is expected to give a suggestion of handling road damage to ensure that road segments are still able to provide levels of service and comfort for the road users.

E. Research Limitation

The limitations of this research are:

1. For alternative handling of road damage with Bina Marga method from the Directorate General of Highways.
2. This research was conducted on flexible pavement only.
3. Use analysis method with excel application only.

F. Originality of Research

As far as the author knows, this research has not been conducted before. However, similar research has been done by Darmawan (2005) about Road Damage Evaluation and Alternative Handling with Approach

of Bina Marga Method (Case Study of Sragen – Gemolong Road Section Km 5 + 500 – Km 16 + 500). Another similar study has been conducted by Budiyo (2012) under the title “Analisa Kerusakan Jalan Dengan Metode PCI Dan Alternatif Penyelesaiannya (Studi Kasus Ruas Jalan Purwodadi – Solo Km 12+000 – Km 24+000)”. The similarities and differences with the previous research:

1. Similarities with Similar Research

The similarity is mainly to the method used (PCI method and handling method).

2. Differences with Similar Research

In this study take the location is on Adi Sumarmo Street - Solo Km 0+000 – Km 2+000 in April 2018 which is different from previous research. Darmawan (2005) conducted research.