1.1 Background

Road infrastructure which is burdened by the high volume of traffic repeatedly brings damage of the road faster and decreases the pavement life cycle. Indicator of the breakdown level can be seen from the road surface conditions, either its structural or functional condition which undergoes damage (Suswandi et al, 2008). The road damage indicates that structural condition and road functional are unable to give optimal service to road users (Mulyono, 2002). The assessment toward the road pavement condition is the most important aspect to decide the activity of maintenance and road repair. *Pavement Condition Index (PCI)* is assessment system of road paving condition based on the type, degree and extension of damage and can be used as a reference in the effort of maintenance (Suswandi et al, 2008).

Overload of truck vehicles is a very important problem on the main roads all over the world particularly in developing countries. Early damage on the road paving brings about the cost of road repair exceeds the provided cost (Chan, 2006).

Load repetition of heavy vehicles becomes a major reason of the road pavement damage. There is also an influence between the material of road pavement and the traffic operation condition as well as environmental factors (Fernandes, 2006). Road planner and designer need to know the impact of various load of axle-wheels toward the damage of road infrastructure (Zhang, 2007).

Road damage is usually addressed to the overloaded vehicles as the major reason. This condition could be probably caused by the change of dimension and vehicle weight passing the road if it is compared with the dimension and vehicle weight used in the planning. Every vehicle with particular weight passing through a road, will give contribution to the road damage. Road damage of vehicles is calculated in the form of a factor called the factor of road-ruiners, *VDF (Vehicle Damage Factor)* (Mulyono, 2002).

Road pavement is the most important component of transportation infrastructure, it should be built and provided with safety and comfort for road users (Hong 2009). Road as an establishment support of a region, must obtain enough fund allocation in order that road executors
are able to keep the roads in good condition. Fund availability is the capability of regional government to provide the fund road management (Yasa, 2008). Security and road service in the main priority from the road maintenance and rehabilitation as a result of life decrease and road paving damage (Zhang, 2010).

BENGHAZI STREET is located in the east of Misurata city. It connects the main coastal road which related with gasoline depots, the port, and iron factory. It is about 3700 m and two ways. Most of the users of this road are large trucks bottled gasoline, iron and others. The arising problem is that, a lot of heavy trucks transporting bottled gasoline, iron and other things, exceed the road capacity so that they cause the road paving damage. The insufficiency of the BENGHAZI STREET road maintenance cost which was budgetted so that the latest maintenance was carried out in the budget year of 2009, the road maintenance was done just patching holes. Seeing the condition of the road, the local government of Misurata city budgetted 1,308,720 dinar in budget of 2015 for regular road maintenance.

This present study was carried out to evaluate the road pavement damage to know the influence of heavy trucks on the pavement damage and its cost rehabilitation. It was also to analyze the cost of road maintenance of Benghazi Street in Misarta city. The cost analysis proposed to get sufficient amount which is sufficient to maintain the Benghazi Street in Libya.

1.2 Problem Statement

The problem statements of this study are as follow:
1. How to measure the influence of overloaded trucks towards the road pavement damage and its rehabilitation cost?
2. How should road maintenance and rehabilitation be carried out?
3. Is the allocated fund sufficient for the Benghazi Street maintenance and rehabilitation?

1.3 Limitation of the Research

This research was limited as follows:
1. The road limited on the main side which is passed by the gasoline street and two ways
2. The road damage by overloaded trucks was regarded as high as 60% and the rest by the weather and execution process as high as 40%.
3. Overloaded vehicles passing the road paving was bunches bottled gasoline and iron and other things.
4. The load weight of bottled gasoline trucks was calculated based on *Density*.

### 1.4 The Objective of Research

The objective of Research is as follows:

1. To know the influence of overloaded trucks toward the pavement damage and its cost rehabilitation.
2. To find out the appropriate management method for the road maintenance and rehabilitation.
3. To find out the sufficiency of the road maintenance and rehabilitation cost.

### 1.5 The advantage of Research

This research is made with the expectation:

1. To add science point of view for any researchers in carrying out the job of highway maintenance and rehabilitation, especially within the Public Work Institution of Misurata city.
2. To be a reference for policy makers in the project of highway maintenance and rehabilitation.
3. To be a reference for engineering staff of the Public Work Institution and particularly for the engineering staff of the Public Work Institution in Misurata city.
4. To be an additional literature for other researchers related to this research.
5. To add scientific reference concerning with highway maintenance and rehabilitation.