

# **GOVERNMENT ENGINEERING COLLEGE HASSAN**

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## CHAPTER 1

# INTRODUCTION

A pothole is a type of failure in an asphalt pavement caused by the presence of water in the underlying soil structure and the presence of traffic passing over the affected area. Introduction of water to the underlying soil structure first weakens the supporting soil. Traffic then fatigues and breaks the poorly supported asphalt surface in the affected area. Continued traffic action ejects both asphalt and the underlying soil material to create a hole in the pavement.

Pothole formation requires two factors to be present at the same time: water and traffic. Water weakens the soil beneath the pavement; traffic applies the loads that stress the pavement past the breaking point. Potholes form progressively, first from fatigue of the road surface, which can lead to a precursor failure pattern known as crocodile cracking (alligator cracking). Finally, chunks of pavement between the fatigue cracks gradually work loose, and may eventually be plucked or forced out of the surface by continued wheel loads to create a pothole.

Pothole patching methods fall into two distinct categories: temporary and semi-permanent. Temporary patching is reserved for weather conditions that are not favorable to a more permanent solution and usually uses a cold mix asphalt patching compound placed in an expedient manner in order to temporarily restore pavement smoothness. Semi-permanent patching uses more care in reconstructing the perimeter of the failed area to blend with the surrounding pavement and usually employs a hot-mix asphalt fill above replacement of appropriate base materials.

Pot hole are mainly cause due to the poor sub grade, insufficient compaction, presence of moisture, excessive traffic load and very high and intense rainfall. If the potholes are not treated and repaired at right time , it increases in size and pavement deterioration occur, which is a serious problems as it leads complete reconstruction of the road. Thus the flexible pavements has to be maintained and pot-holes has to be filled in-time to save money and avoid inconvenience to the road users