

## Developing a comprehensive pavement management system in Tehran, Iran using microPAVER.

### ABSTRACT

Decision makers often decide on maintenance and rehabilitation of pavements without any systematic procedure. These kinds of arbitrary decisions do not usually guarantee the effectiveness of budget allocation and cannot supply the maintenance needs of a network. A Pavement Management System is able to evaluate the existing condition of roads as well as predicting the future state. Therefore, choosing the most appropriate strategy of maintenance (the best choice with suitable time for execution) according to the available resources becomes possible. In this paper, MicroPAVER, which is one of the most comprehensive pavement management software was discussed. Implementation of different budget scenarios provided in this software such as: unlimited budget, annual budget, etc as well as practical methods of maintenance and other unique features help the decision makers to successfully manage the pavements on both network and project level by examining various trade-offs between allocated budgets. In order to indicate the efficiency of this system, some streets located in district No.6 of Tehran municipality (IRAN) were selected and MicroPAVER system was successfully used as pavement management system in this network. In this paper 10 main streets including 131 sections were investigated. The average weighted condition for each branch, during a design period of five years, was indicated to compare the effect of three different allocated budgets. In addition, ten deterioration prediction models were developed in this network.

**Keyword:** MicroPAVER; Pavement condition index; Pavement management system.