ΑΡΙΣΤΟΤΕΛΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΕΣΣΑΛΟΝΙΚΗΣ
ΠΟΛΥΤΕΧΝΙΚΗ ΣΧΟΛΗ
ΤΜΗΜΑ ΠΟΛΙΤΙΚΩΝ ΜΗΧΑΝΙΚΩΝ
ΠΡΟΓΡΑΜΜΑ ΜΕΤΑΠΤΥΧΙΑΚΩΝ ΣΠΟΥΔΩΝ ΔΙΟΙΚΗΣΗΣ ΚΑΙ ΔΙΑΧΕΙΡΙΣΗΣ ΤΕΧΝΙΚΩΝ ΕΡΓΩΝ

ACADEMIC YEAR 2012 – 2013

TITLE OF DIPLOMA THESIS:

Risk analysis in open excavations of transportation projects

AUTHOR: Katsaros Fotios

ABSTRACT

The current infrastructure projects are very complicated and their (manufacture, construction) requires precise budget, time-schedule and quality. Achieving these aims is not simple and easy, because the risks are multiple, which could affect the quality, the budget and the time-schedule of the project.The present thesis entitled “Risk analysis in open excavations of transportation projects”, after the risk management process has been analyzed in a theoretical basis, an effort was made for the application of the process including all the steps to a slope of “Egnatia Odos”. Firstly, the system and its possible risks were identified. The thesis mainly focuses on the risk estimation, not only the qualitative, but also the quantitative. On the one hand the qualitative method was based on two methods and on the other hand on three statistics methods (Point Estimate Method, Monte Carlo, First Order Reliability Method). After the statistical analysis was applied, it became obvious the significance of the statistics in risk analysis in infrastructure projects. After the evaluation of the risks, their handling was the next significant step, which could be achieved by using certain mitigation acts. The final step of the process is the risk monitoring, which could be performed through a monitoring system.Finally the conclusion of this research is that the traditional risk management process, could be carried out in engineering works of roadways and generally in the majority of geotechnical projects.

KEYWORDS

Risk, Risk management, Slope, Landslides, Statistics