OBJECTIVES: The Kentucky Transportation Cabinet tracks routine and emergency roadway maintenance costs in a database system called Operation Management System (OMS). Some of these cost categories, such as rock fall and landslide mitigation, are related to geologic site conditions of road cuts and slopes. Costs are attributed to roadway milepoint segments, and therefore can be analyzed in a geographic context. The purpose of this study is to extract raw cost data from OMS, convert these data to a geospatial database, and investigate the geologic context of the sites in order to determine which geologic conditions and geographic regions are prone to maintenance issues.

BACKGROUND: Cabinet personnel have made a concerted effort in recent years to train district staff to better attribute the reasons and locations of geologically-related maintenance costs. In 2006, it was determined that the data were sufficiently uniform that analysis of these costs could be made. Staff in the Geotechnical Branch developed a program to convert the OMS data to a geospatial format, but there have been insufficient resources to maintain that effort. The Cabinet hopes to develop a comprehensive GIS resource using the OMS data for analyzing maintenance costs by category, over time, and in a geographic context.

FY2010 ACCOMPLISHMENTS: Seven OMS data extracts were received from KYTC for fiscal years 2003 through 2009. Extracts were imported to database format and analyzed for content. Data summaries by Activity Code and county were prepared and stored in a SQL-Server database for future access. A computer program was completed to split costs associated with work orders into 1 mile route segments and these data were also stored in a database. Extracts of the one mile data have been prepared and converted to GIS format for further analysis.

FY 2011 PROPOSED WORK: Future work will include a statistical analysis of associations between landslide and rockfall costs to other categories of maintenance to determine if those activities (e.g., guardrail repairs or pavement patching) should be factored into the total costs of geologically related maintenance issues. Maps of landslide and rock fall costs will be analyzed to identify target geographic areas for field investigations to determine the geologic context of these maintenance costs. Methods will be developed for field data collection relevant to this task.

FY 2010 COST: $50,000
PROGRAMMED COST FY 2011: $100,000
TOTAL ESTIMATED COST: $150,000