

EVALUATION OF DAMAGE CAUSED TO ROAD STRUCTURAL
PAVEMENTS BY UTILITY SERVICE PROVIDERS:
A CASE STUDY OF KAMPALA

BY

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ABSTRACT

The research is an evaluation into the damage caused to road structural pavements by service providers in Uganda. Majority of utility service provider's infrastructure lies underground often partly or wholly beneath road pavements. Kampala road structural pavements are getting dilapidated by the activities of utility service providers and cuts not repaired in time, and those repaired fail prematurely despite provision of specifications to contractors. The study aimed at assessing road surface damage (cracks, depressions, potholes and bleeding) caused by utility cutting and their progressions overtime. Evaluating the practices of contractors when selecting materials for repair of utility cuts and compacting pavement layers, establishing the resultant effects of repaired cut distresses and recommend best practices to reduce repaired cut distresses on road pavements. Methodology comprised of literature review, questionnaire survey to technical staff of utility companies (telecommunication, electricity, water & sewerage), contractors and road authorities. Forms of distresses on repaired utility cuts were visually identified, monitored, measured and recorded on observation sheets. Their variations over 3-month period were monitored. Field tests (Dynamic Cone Penetrometer DCP) was used for establishing soil structural strength and properties on repaired utility cuts and a sand replacement method for moisture content test. For laboratory tests, soil samples were subjected to BS Heavy Compaction Test to establish the degree of compaction. The resultant effects like road service life, distresses on five traffic junctions were identified and observed. With respect to traffic jams, vehicles were timed, recorded at a pothole(s), and results presented on graphs. The study showed road surface damage (distresses) in form of cracks, bleeding, depressions and potholes and their progression overtime. Contractors flout set standards during selection of materials and compacting pavement layers during repair of utility cuts. The effects of utility cut distresses were reduction in road service life and serviceability, increased maintenance costs and unnecessary traffic jams. The recommendations were involvement of utility service companies at all stages of road construction projects, best remedial measures as trenchless technology, core boring and design based on sound engineering fundamentals. Area of further research, evaluation of impact of road drainage on the utility workability was proposed.