ASSESSING THE IMPACT OF UTILITY CUTS PRACTICES ON THE SERVICE LIFE OF FLEXIBLE PAVEMENT IN SRI LANKA

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Abstract: Road networks of Sri Lanka frequently have post-utility installation. In order to put these services underground, several utility companies, including NWSDB, partially or completely destroy the road pavement. It is a common situation that numerous defects are created after the pavement is reconstructed. The study investigates the impact of utility cut practices on the service life of flexible pavements in Sri Lanka. Using a mixed-methods approach, it identifies the most prevalent types of pavement defects associated with utility cuts and the contributing factors. The study reveals that poor joint construction, poor compaction, and improper backfilling are the main primary causes of road defects according to the RII value of 0.813, leading to the most significantly uneven surfaces according to 0.873 RII, secondly, bumps have shown a 0.851 RII value, and thirdly, surface cracking has a value of 0.848. Utility cuts are found to have a significant impact on traffic flow, road safety, and the economy due to safety hazards and general inconvenience. The research emphasizes the total Specific measures that can be taken during the utility cut excavation and reinstatement process to minimize the likelihood of road defects are "Performance based-monitoring", it is the most significant measures, of having 0.892 RII value. The second most specific measure is "Regular inspection" with a 0.876 RII value (Rank 2). The third most specific measure is "Quality control during the construction process," with 0.852 (Rank 3) RII values. The need for enhanced coordination between utility companies and road authorities, stricter regulatory frameworks governing utility cut procedures, and improved design and planning strategies to minimize the detrimental effects of utility cuts. Implementing these measures can enhance the longevity of flexible pavements and contribute to the overall efficiency and safety of the road network in Sri Lanka.

Keywords: Utility cuts, Flexible pavement, impact, service life.