

## Alternative Road Improvements to Enhance the Sustainability and Resilience of A83 – “Rest and Be Thankful” in Scotland

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**Abstract** - The A83 trunk road at the “Rest and Be Thankful” is a key section of the trunk road route which has been impacted severely by the occurrence of landslides. Over the last 15 years, thousands of tonnes of debris have flowed onto the road blocking and closing this key route to traffic, which has resulted in significant diversions of over 60 kilometres. As a result of this consistent disruption, a long-term solution must be rationalised to provide the route with greater resilience along this section of the A83. Therefore, for the purpose of this study, a conceptual development of three road alignment design schemes will be conducted along with the investigation of the feasibility of a preferable design which will realign the A83 away from the landslide prone slope and achieve the requirements of current UK road design standards. From this data obtained through the design and development of the three different alignment options, it will be possible to compare and analyse each option through different PESTLE factors which will help to identify the benefits and costs in each of the three alignments. This analysis will also be backed up through the application of a scheme assessment process which has worked towards choosing a preferred alignment design option. Finally, after identifying a preferred alignment design option, recommendations will be made in view of the next steps leading towards potential construction. Along with the full analysis of alignment designs, additional design options were developed to cover sustainable and resilient measures which could help to reduce the likelihood of landslide, prompting further areas of research.

**Keywords:** Road design, geotechnical design, landslides, resilience, sustainability, highway engineering.