

## **Assessment of landscape aesthetics of southern expressway (E01 road), Sri Lanka**

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The Southern Expressway is the first experience in Sri Lanka of an E01 class road. It has been constructed mainly considering engineering and traffic related requirements without paying much attention to the landscape-related issues. In addition, there are several proposed expressways to the country. Although the concept of expressways is new to Sri Lanka, many studies have already been carried out in developed countries on the built environment with a sound scientific background. However, there are no particular guidelines/manuals developed for landscape and aesthetics design for the roadside of the Southern Expressway in Sri Lanka. Hence, this research explores the necessity of the landscape aesthetics assessment and a better way to construct expressways while achieving optimum use of land and improvement of scenic quality.

Geographic information system and remote sensing were used to evaluate existing landscape land cover/use types and to identify environmental sensitive areas within 01 km buffer zone area along the expressway. The lush appearance of the buffer zone was evaluated by calculating the NDVI value, using "Landsat 8 imageries" and ERDAS imagine 2010 software. Initially, an attitude test was conducted to identify attitudes towards the existing landscape scenery and different landscape elements and to identify possible association between type of travel and attitudes. A visual preference survey was carried out based on the results of the attitude test. For that, nine photographs were selected after the field observation and models were developed using Real time Landscaping Architect® software, based on pre-determined different concepts.

Results revealed that the Southern Expressway is surrounded by different land cover/use types, environmental sensitive areas, archaeological reserves and ancient protected monuments, landslide prone areas, hydrological areas, forest and wild life reserves. The greenness varies throughout the buffer zone. The results of the survey carried out to test the preferences and attitudes show that there is not much attention/awareness among the users of the Expressway on scenic quality of the Southern Expressway and on different landscape elements. Significant associations ( $p < 0.05$ ) were only shown between the type of travel and perception about evergreen plants. Results of the visual preference survey suggest the need of area-specific landscape designs and the importance of human perception-based methods in designing landscapes.