Editorial

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Proceedings of the Institution of Civil Engineers – Transport is an internationally renowned journal for the whole transportation community. We publish peer-reviewed high-quality original articles in wider transport themes to serve researchers, engineers and policymakers across the globe. We believe that the broad coverage of topics is the main strength of our journal. Despite the sombre disruption caused by the Covid-19 pandemic, the number of articles submitted from around the world has grown significantly in the last couple of years. The acceptance rate remains under 30%, meaning that the review process is rigorous and only high-quality, impactful original papers are accepted for publication. This is testimony to the journal's popularity and quality.

This February 2022 edition is no exception, presenting four articles on transport sustainability, one article on traffic safety and one article on road foundation. All six papers address several areas of the UN's Sustainable Development Goals for economic, environmental and societal benefits in engineering research and practices.

Transport sustainability

The first paper, by Choi and Bae (2022), has proposed a strategic self-driving model for minimum fuel consumption and minimum pollution for connected automated vehicles operating in different road terrains (various speeds and slopes of upcoming road sections). The developed model showed a 20% reduction in fuel consumption and as high as an 80% reduction of environmentally harmful emissions. The findings were applied to establish a driving strategy for the V2X (vehicle-to-everything) connected automated vehicles.

Sustainability in the urban transport system is a major consideration for transport planners and policymakers. The second paper, by Minal *et al.* (2022), addressed this issue. Their article presents a single, composite sustainability index (I_{cst}), combining social, economic and environmental aspects to assess the impact of road rationing on modal shift and transport sustainability in Delhi, India. The study considered eleven indicators relevant to transport sustainability. The

developed I_{cst} values can be used for scenario comparisons and policy assessment and will support future policy implementation and transport sustainability scheme assessments.

The third paper, by Al-Mumaiz and Evdorides (2022), presented a case study based in the UK on quantifying road-user cost savings (RUCS) and change in land values (CLVs) in the adjacent areas because of a new inter-urban road development. They developed a model to investigate the relationship between RUCS and CLVs for 30 years considering the positive and negative impact of various parameters such as traffic, pavement roughness, maintenance, financial cost and so on. Readers will find this article very useful in understanding how a new road should be assessed in terms of its economic, social, financial, safety and environmental impacts.

The fourth paper, by Zhou *et al.* (2022), presented a very interesting study on the design, construction, economic and safety benefits of musical roads. The authors studied 30 musical road sections, evaluated their design and construction method and analysed potential safety benefits when used in dangerous stretches to discourage speeding and their economic value as a tourist attraction. Readers will find this paper very stimulating and useful for the design and maintenance of highways.

Traffic safety

The fifth paper, by Llopis Serrano (2022), studied the impact of traffic accidents in long road tunnels (> 500 m) in Spain. The research analysed 10 years of accident data and correlated this with tunnel characteristics such as traffic circulation, length, longitudinal slope and locations. Among other conclusions summarised in this paper, the study showed that long tunnels have an accident-reducing effect compared to open stretches of road and the benefits increase with the tunnel length. Engineers will find this study useful when designing and managing road tunnels.

Pavement foundation

The sixth paper, by Wei and Zhang (2022), proposed an innovative thermal insulation layer to protect the subgrade from

frost-related damage. The authors proposed a new combined thermal insulation layer consisting of extruded polystyrene (XPS) board and modified soil (silty clay modified with fly ash and crumb rubber). The field tests and finite-element verification showed the combined thermal insulation layer can be effective for more than 50 years in protecting the road surface from cold and heat erosion, elevating the freezing depth to the upper surface of the combined layer. This paper is a good example of how theoretical modelling can help to address practical problems.

Closing remarks

We hope our readers find these papers useful and rewarding. Comments on this issue or other issues or comments related to the journal, in general, will be received with great interest. We will also welcome papers related to recent development in highway design including the revision of design standards, the challenges and new opportunities that these changes bring and case studies related to road widening projects.

Finally, we are extremely grateful to our editorial board members and esteem reviewers for their service to the journal. As the number of papers submitted has increased significantly, we can expand our editorial board. We will gladly consider if

any interest is received from researchers, academics and practitioners. Please e-mail your CV to our editorial office and we will take care of the rest.

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