Editorial

Kaewunruen, Sakdirat

DOI:
10.1680/jtran.2019.172.3.123

Document Version
Peer reviewed version

Citation for published version (Harvard):
Kaewunruen, S 2019, 'Editorial', *Proceedings of the Institution of Civil Engineers - Transport*, vol. 172, no. 3, pp. 123-124. https://doi.org/10.1680/jtran.2019.172.3.123

Kaewunruen S (2019), Editorial.
Proceedings of the Institution of Civil Engineers – Transport 172(3): 123–124,
https://doi.org/10.1680/jtran.2019.172.3.123

https://www.icevirtuallibrary.com/journal/jtran

Editorial

Sakdirat Kaewunruen BEng (Hons), MEng, PhD, MBA, CPEng, NER, RPEQ, FHEA, APEC Eng
Senior Lecturer in Railway and Civil Engineering, School of Engineering, The University of Birmingham, Edgbaston, UK

The next generation of transport engineers and scientists will need to comprehend and manage the grand challenges in providing sustainable, smart and resilient transport systems critical for maintaining the competitiveness of cities and built environments (Kaewunruen et al., 2016). Importantly, they will also need capabilities to balance between societal needs and environmental impacts in accordance with United Nation's Sustainable Development Goals (SDGs), as illustrated in Figure 1. Every interdependent transport mode (i.e. road, rail, marine, aviation, pipeline) is the key essential enabler to most of SDGs. If you cannot realise it, imagine what happen when there exists none of any transportation system. The scale, scope and significance of transport systems on the SDGs pave the pathway to impact of this issue of Transport.

It is thus my great honor to welcome you to this issue of the Institution of Civil Engineers' (ICE) Transport Journal. This ICE Transport Journal Issue will highlight new findings and lessons learnt from transport infrastructure and system management in order to assure integrated and sustainable transport planning for future cities and communities. This is my first editorial as a member of the editorial advisory panel. I am very grateful to the Institution of Civil Engineers (ICE) and the editorial advisory panel members for giving me the opportunity to welcome you to this issue. On behalf of the editorial advisory panel, I hope that the published materials are useful and provide new reference nodes for the transportation community, including researchers, engineers, planners, policy makers, students and the public.

This April 2019 edition offers five articles on a variety of transportation issues, ranging from bicycling, road, rail, and the network system. A brief overview of all five papers can be found below.

The first paper deals with the transport policy on "Building an institution for rural roads management in Timor-Leste" by Done and Lawther (2019). The authors comprehensively assessed both public and private road management institutions in Timor-Leste whose road network has not been maintained since 2006. Several guiding principles have been drawn to improve rural infrastructure in a developing country with low private and public sector capacity. These principles can be useful for designing or restructuring a road transport organization.

The second paper addresses a key societal issue "Cyclists in shared bus lanes: could there be unrecognized impacts on bus journey times?" by Aldred et al. (2019). In this paper, a case study of bus-cycle interactions in London has been carried out to address the implications of cyclists in shared bus lanes. The modelling outcomes clearly revealed that the cycles can cause dramatic delays to buses in the shared lanes. This study is interesting and will be beneficial to

transport planners considering the trade-off between congestion and sustainability among cycles, buses and cars. This paper has an appendix of parameter inputs for the modeling, which can be useful for transport modelers.

The third paper tackles the complication of freight train operations in “A simulation model for train movements in the rail network” by Moeinaddini et al. (2019). Optimal movement of freights has been the main emphasis of this study. A simulation model of train movements associated with blocking and dispatching problems has been established. Iranian freight network has been used as a case study to demonstrate the mathematical model. The analysis revealed that the application of a flexible sending strategy and a necessary classification strategy yields the best performance of the freight rail network. This study has taken into account the fuel consumption of freight trains as a key criterion in eco-friendly optimization, which can be of interest for transport planners.

The fourth paper highlights the extreme climate adaptation design of road network from the bottom up in “Flexible pavement design for hot climates – a case study” by Kuna and Kelly (2019). Best practices and lesson learnt in pavement design for hot climates from a highway project in Qatar (where the surface temperature can reach 70°C) have been comprehensively and interestingly presented in this paper. The design of pavements with a cement-stabilised base has been demonstrated by empirical design practice, test results, and new research findings. The analysis highlights the importance of pavement temperature distribution throughout the year as the key design input. This paper will be useful to road pavement designers when considering climate resilience.

The last paper of this issue proposes a new approach to cope with disruptive events on “A composite resilience index for road transport networks” by El Rashidy and Grant-Muller (2019). The paper discusses the three resilience characteristics of road transport networks, including redundancy, vulnerability and mobility. A new composite resilience index has been established based on travel behaviors. Delft city road transport network has been used as a case study. This paper demonstrates the benefit of the new index for transport policy makers to better understanding the dynamic nature of transport resilience and the weakness in the network so that future planning and resource re-allocation can be emphasised.

It is very clear that all of these papers in this issue contribute towards transport sustainability as well as SDGs. I sincerely hope that you find these papers beneficial to your work anyhow. The mission of the journal is to attract high-quality papers that extend our reach internationally. Therefore, further dissemination by either words of mouth or other means will be deeply appreciated. In addition, any comment on this issue articles are gratefully welcome.

Figure 1 UN Sustainable Development Goals (United Nation, 2019)

References:

Aldred R, Best L, and Jones P (2019) Cyclists in shared bus lanes: could there be unrecognized impacts on bus journey times? Proceedings of the Institution of Civil Engineers – Transport.

Done S and Lawther TP (2019) Building an institution for rural roads management in Timor-Leste. Proceedings of the Institution of Civil Engineers – Transport.

El Rashidy RA and Grant-Muller S (2019) A composite resilience index for road transport networks. Proceedings of the Institution of Civil Engineers – Transport.

Kaewunruen S, Sussman JM and Matsumoto A (2016) Grand Challenges in Transportation and Transit Systems. Front. Built Environ. 2:4. doi: 10.3389/fbuil.2016.00004

Kuna K and Kelly K (2019) Flexible pavement design for hot climates – a case study. Proceedings of the Institution of Civil Engineers – Transport.

Moeinaddini A, Shafahi Y, Hasany RM (2019) A simulation model for train movements in the rail network. Proceedings of the Institution of Civil Engineers – Transport.

United Nation (2019) United Nation's Sustainable Development Goals, Online Access (1 April 2019), [URL https://www.un.org/sustainabledevelopment/sustainable-development-goals/]