

Supporting Densification through the Planning and Implementation of Road Infrastructure in the South African Context

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Abstract : This paper demonstrates a proof of concept whereby shorter trips and land use densification can be promoted through an alternative approach to planning and implementation of road infrastructure in the South African context. It briefly discusses how the development of the Compact City concept relies on a combination of promoting shorter trips and densification through a change in focus in road infrastructure provision. The methodology developed in this paper uses a traffic model to test the impact of synthesized deterrence functions on congestion locations in the road network through the assignment of traffic on the study network. The results from this study demonstrate that intelligent planning of road infrastructure can indeed promote reduced urban sprawl, increased residential density and mixed-use areas which are supported by an efficient public transport system; and reduced dependence on the freeway network with a fixed road infrastructure budget. The study has resonance for all cities where urban sprawl is seemingly unstoppable.

Keywords : compact cities, densification, road infrastructure planning, transportation modelling

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