

Climate Impact-Minimizing Road Infrastructure Layout for Growing Cities

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Abstract : City road transport contributes significantly to climate change, and the ongoing world urbanization is only increasing the problem. The paper describes a city planning concept minimizing the number of vehicles on the roads while increasing overall mobility. This becomes possible by utilizing a recently invented two-level road junction with a unique property of serving both as an intersection of uninterrupted traffic and an easily accessible transport hub capable of accumulating private vehicles, and therefore becoming an especially effective park-and-ride solution, and a logistics or business center. Optimized layouts of city road infrastructure, living and work areas, and major roads are presented. The layouts are suitable both for the development of new cities as well as for the expansion of existing ones. Costs of the infrastructure and a positive impact on climate are evaluated in comparison to current city growth patterns.

Keywords : congestion, city infrastructure, park-and-ride, road junctions

Conference Title : ICECC 2017 : International Conference on Environment and Climate Change

Conference Location : Rome, Italy

Conference Dates : May 04-05, 2017