

CITY UNIVERSITY OF HONG KONG

香港城市大學

Exclusive Expressway Logistic Zone:
Mechanisms and Impacts on Urban Logistics
Efficiency

專屬高速公路物流區：
對城市物流高效性的機制與影響

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Abstract

The rapid urbanisation and expansion of e-commerce have intensified the challenges of last-mile distribution in urban logistics, and these challenges are exacerbated by the scarcity and inefficient use of land for logistics in China. This study proposes the establishment of an exclusive expressway logistic zone (EELZ) to address these issues by leveraging underutilised land adjacent to expressways, thereby integrating logistics functions into expressway service areas. This research evaluates the feasibility and impacts of EELZ through a combination of literature review, case analysis (focusing on Baiyun District, Guangzhou) and simulation modelling. The key findings reveal that EELZ enhances logistics efficiency by reducing delivery cycles, lowering operational costs and alleviating urban traffic congestion. The simulation results demonstrate significant improvements in freight turnover rates and cost-effectiveness, which are driven by optimised resource allocation and streamlined logistics networks. EELZ also offers a sustainable solution to urban land scarcity while aligning with government-led urban planning policies. This study contributes a novel framework for integrating expressway infrastructure into logistics systems, thus providing actionable insights for policymakers and practitioners in China and other rapidly urbanising regions. This approach would not only revitalise idle expressway land but would also establish a scalable model for improving last-mile logistics efficiency and fostering economic growth.