

## **Analysis of Underground Logistics Transportation Technology and Planning Research: Based on Xiong'an New Area, China**

**Authors :** Xia Luo, Cheng Zeng

**Abstract :** Under the promotion of the Central Committee of the Communist Party of China and the State Council in 2017, Xiong'an New Area is the third crucial new area in China established after Shenzhen and Shanghai. Its constructions' significance lies in mitigating Beijing's non-capital functions and exploring a new mode of optimizing development in densely populated and economically intensive areas. For this purpose, developing underground logistics can assume the role of goods distribution in the capital, relieve the road transport pressure in Beijing-Tianjin-Hebei Urban Agglomeration, adjust and optimize the urban layout and spatial structure of it. Firstly, the construction planning of Xiong'an New Area and underground logistics development are summarized, especially the development status abroad, the development trend, and bottlenecks of underground logistics in China. This paper explores the technicality, feasibility, and necessity of four modes of transportation. There are pneumatic capsule pipeline (PCP) technology, the CargoCap technology, cable hauled mule, and automatic guided vehicle (AGV). The above technical parameters and characteristics are introduced to relevant experts or scholars. Through establishing an indicator system, carrying out a questionnaire survey with the Delphi method, the final suggestion is obtained: China should develop logistics vehicles similar to CargoCap, adopting rail mode and driverless mode. Based on China's temporal and spatial logistics demand and the geographical pattern of Xiong'an New Area, the construction scale, technical parameters, node location, and other vital parameters of underground logistics are planned. In this way, we hope to speed up the new area's construction and the logistics industry's innovation.

**Keywords :** the Xiong'an new area, underground logistics, contrastive analysis, CargoCap, logistics planning

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