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# Spatial-Temporal Landscape Analysis of Kallang-Seletar Transect, Singapore

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## Abstract:

Industrialization and urbanization have been vastly reshaping the physical landscape of Singapore under guided urban planning in the last more than half a century, accompanying Singapore's successful economic growth and social management. Reconstructing and evaluating the transformation process of physical landscape can help appreciate anthropogenic activities in this progress and explore dynamic urbanizing frontiers into natural and rural environment in different periods. A geographic transect running from Seletar to Kallang in central Singapore Island is delineated for detailed investigation of physical transformation. Typical geographic features at different times, including road networks, terrain, buildings and water bodies were extracted from a series of georeferenced historical topographic maps from 1940s to 2010s. Description, analysis and interpretations of geographic changes and temporal processes are made in this specific transect at different spatial scales. These geographic layers coupled with historical land use and economic policies are considered as key components of transformation analysis of physical landscape in this work. Singapore's current situation benefits from its unique transformation journey, which is marked by top-down integral spatial planning, and integrating social/demographic and economic policies. Reflection on the transition of this central transect can help us appreciate the current physical status of Singapore Island and better project the path of other booming urbanization areas in surrounding regions. Although Singapore's chosen path of developments led to remarkable results, careful and comprehensive considerations of social and historical factors must be taken when transferring its policies and strategies to other aspiring regions. One conclusion of this work demonstrates the power of maps for recording physical environment and support scholars in geography, history and urban research to build a temporal image of landscape changes.