

GIS-based Land Suitability Analysis to Support Transit-Oriented Development (TOD) Master Plan: A Case Study of the Campus Station of Thammasat University and Its Surrounding Communities

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Abstract

This article presents a study of land suitability analysis and Transit-Oriented Development (TOD) of a campus station of Thammasat University (Rangsit Campus). The Geographic Information Systems (GIS) and multi-criteria evaluation were used to identify the most suitable areas, in which its geospatial databases were derived from various organizations of Thailand. Eventually, the collective data was analyzed by map overlay analysis technique in an ArcView Model Builder program. In addition, integrating spatial analysis technique with the Spatial Multi-Criteria Decision Making Analysis (SMCDA) as applied to establish criteria weights and ranking them in order to analyze impacts on the transit-oriented communities and to supporting urban designer and planners with some practical approaches in decision making while planning. These analysis techniques are effective and prevalently used in various fields of studies such as geography, environmental science, landscape architecture and urban planning. Subsequently, the gathered analyzed data was applied for design guidelines of Transit-Oriented Development (TOD) Master Plan of Thammasat University and its surrounding communities. The study purposed various land uses such as commercial areas, real estate development, and necessary facilities.

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Keywords: Geographic Information Systems (GIS), Spatial Multi-Criteria Decision Making Analysis (SMCDA), Transit-Oriented Development (TOD), Campus Station