Abstract

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Modelling the Impacts of Land Use on Transit Utilization in the Central Okanagan.

Transit and land use have an intertwined relationship that has been researched for many years however, this relationship remains abstract and hard to capture. Transit-land use relationship is often described as a chicken-and-egg problem of a two-way nature. By providing suitable access (egress) to (from) transit, land use affects transit utilization and condition transit demand. On the other hand, by ensuring mobility between trip origins and destinations, transit affects land use and condition the spatial distribution of activities and urban development. Much of the complexity in transit-land use interactions can be attributed to passengers’ perceptions of various level-of-service and land use factors. It is therefore important to understand such underlying aspects in order to manage the interrelationship between transit and land use. This study explores the relationship between various land use factors and transit mode choice/ridership in the Central Okanagan using two approaches, namely, mode choice and direct ridership modelling. The first method utilizes a trip diary survey and discrete choice modelling to analyze mode choices based on the location of activities and land use patterns. The second method uses a direct ridership model approach that uses spatial analysis and correlations between transit ridership, stop locations and surrounding quantified land uses. As an input for both methods, land use is quantified and defined as number of jobs, school enrolment, and population at a fine-scale (lot level).