Abstract: The design of public transportation networks is complex and can include conflicting objectives. Networks designed to minimise travel time may not fulfil the requirement of maximum coverage and accessibility. In this context, a multi-criteria approach for transit alignment design has been developed to maximise a range of objectives using census data. Whenever a subdivision is developed in a suburban region of a medium sized city, transit operators often receive requests to link the city centre with the new locality via new routes. Traditionally, implementation of routing a new bus service is based on a ‘common sense’ approach. This can lead to the development of an irrational network of public transport routes. This research offers an alternative approach, which essentially optimises multi-criteria for planning transit routes. This research has proved that it is worth considering such options for connecting origin-destination zones with a new bus service.

Keywords: GIS, transit alignment, multi-criteria, transit coverage optimisation