DEVELOPMENT OF GIS BASED TOOLS FOR TRANSIT SERVICE ANALYSIS

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ABSTRACT

It is common knowledge that route location analysis requires an accurate estimation of the population using the transit system. The gross patronage potential of a route is based on the population residing within the service catchment area. Population is the best representation of potential usage, in terms of daily trips, at the point of origin. Once the service area for a transit is identified, population information for this area is used as an input to travel demand models for ridership estimation. Hence the transit operating agencies are often interested in potential population coverage of any transit route they intend to operate. Similarly they will also be interested in transit coverage Level of Service (LOS) issues. In order to estimate the population coverage of a route and to estimate the transit coverage LOS for the region, in a quick and efficient way, tools are developed using GIS. This paper explains the concept and procedure of the development of GIS tools created in this study. The tools developed are in the form of extensions for the GIS software ArcView 3a. As a part of this research, two extensions are developed; the first extension (TraSA_Pop-C’ge. avx) allows the user to interactively estimate the population coverage of the bus route by four different methods. The second extension (TraSA_LOS-C’ge. avx) is used to estimate the Level of Service of the bus routes for a region by four different methods. This paper explains the sequence of steps involved in the development of these two extensions.

KEYWORDS: GIS tools, Population coverage, transit level of service, ArcView, Extensions