

# Abstract

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## **Transportation Network Design Using GIS-Based DSS: Baghdad Metro Case Study**

Transportation design concepts and standards are adopted to build a Geographic Information System Model to design a new transportation modal. Socioeconomic and spatial data are utilized to identify components of the network junctions and edges. Potential network elements and their associated attributes are subjected to Analytic Hierarchy Process (AHP) to rank alternatives. Some necessary assumptions to pairwise criteria are carried out to find their eigenvector. A tree branches concept is simulated to propagate routing and building the whole transportation network system. Metro system modal in Baghdad city is presented as a research case study.