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Building Green Infrastructure Networks Based on Cadastral Parcels Using Network Analysis

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Abstract : Seoul in South Korea established the 2030 Seoul City Master Plan that contains green-link projects to connect critical green areas within the city. However, the plan does not have detailed analyses for green infrastructure to incorporate land-cover information to many structural classes. This study maps green infrastructure networks of Seoul for complementing their green plans with identifying and raking green areas. Hubs and links of main elements of green infrastructure have been identified from incorporating cadastral data of 967,502 parcels to 135 of land use maps using geographic information system. Network analyses were used to rank hubs and links of a green infrastructure map with applying a force-directed algorithm, weighted values, and binary relationships that has metrics of density, distance, and centrality. The results indicate that network analyses using cadastral parcel data can be used as the framework to identify and rank hubs, links, and networks for the green infrastructure planning under a variable scenarios of green areas in cities.

Keywords : cadastral data, green Infrastructure, network analysis, parcel data
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