Improving Pedestrian Movements at Congested Urban Areas: A Case Study of the Rathnapura Town

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Abstract

Pedestrians are the main component of urban environment Traffic. Improved corridor for vehicle movements but lack of pedestrian facilities are indifferent identifications of conventional urban environment. Now transport planners considered about pedestrian friendly city environment to achieve sustainable development and encourage green patronage.

Unplanned and uncontrolled pedestrian movements result in delays and safety risk at town center. Individual facility development without proper traffic impact study may causes delays to pedestrians, motor vehicles and increase in safety risks. Often, there are lots of public requests for proper network for pedestrian pathways including amenity development. However, it is very difficult to plan and design an efficient pedestrian network without understanding pedestrian movement behavior at such vicinity. This study is focused on developing a methodology to identify pedestrian movement behavior, critical areas and make necessary adoptions to develop such facilities to encourage walkable city environment.

Rathnapura town is the capital city of Sabaragamuwa province, where having different terrain condition throughout the city area. One of Main arterial of country connecting South-Eastern side with the capital, induce a lot of vehicular movements into the city. Less development of pedestrian amenities is reflected heavy complexity in behavior of pedestrian movements, and it guided to a congested city environment.

Household or occupational purpose utility related trips are commonly identified in such urban environment and it directly relates with land use pattern of town area. This study is to identify specific land use and generated pedestrian trips within urban territory. Schools, educational institutes are specific components where it creates sudden demand for pedestrians. Privet medical centers, banks, commercial buildings, government office attract many pedestrians within town center. Collecting data using google maps, verified those data using field data collection and make GIS land use model is final output for land use identification.

Pedestrian movement has a high degree of freedom in origin - destination pair other than any mode of transportation. So, understanding of existing pedestrian route network and their conditions such as lighting, shading, security, other parameters are vital important factor.

Preparation of existing pathway condition index and priorities for the optimum pedestrian path is the main objective of this study.

After identification of optimum route possible improvements, changes and new adoptions can be introduced without arising further disputes. Major improvement changes from this study are; Improper pedestrian crossing locations shifting to optimum locations in urban proximity and One-way vehicle movement around bus stand for effective vehicle flow and safe pedestrian movements in urban setting.

Keywords: Pedestrian, Condition Index, Land use, Optimization

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