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Comparative Analysis of Traditional and Modern Roundabouts Using Sidra Intersection

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Abstract : Currently, most parts of the world have shifted from traditional roundabouts to modern roundabouts with respect to the role of roundabouts in reducing accidents, increasing safety, lowering the maintenance costs compared to traffic circles with their improper functional and safety experiences. In this study, field data collected from a current traditional roundabout was analyzed by the software AIMSUN and the obtained numbers were recorded. The modern roundabout was designed by changes in the traditional one, considering the geometric standards listed in regulations. Then, the modern roundabout was analyzed by applying a heterogeneous traffic by a micro-simulation software SIDRA (5.1). The function, capacity, and safety of the roundabout were analyzed assuming the superiority of modern roundabouts and acceptable LOS. The obtained results indicate that the function, capacity, and safety of modern roundabouts are better than traditional ones.

Keywords : traditional roundabout, traffic circles, modern roundabout, AIMSUN, SIDRA
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