

## Remedial safety treatment of accident-prone locations

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### Abstrak

Accident prone locations refer to locations having or susceptible to having, a greater than average number of accidents which are represented by outstanding figures of repetitive accident occurrences along the roads. Any appropriate application of remedial safety treatments will require -an in-depth study to find the accident causations and the possible contributing factors. The present study adopts the combined approach of Systems Theory which proposes that accidents are the result of maladjustments in the interaction between the components of complex systems, and the Causal Accident Theory which tries to find the real causes of accidents by probing the events leading to each accident in detail. The case study was conducted at Gringsing Roundabout in Central Java and the intersecting roads, the data of which reveal a high frequency of accidents. The data were analyzed using cross tabulations to produce first-hierarchy and second-hierarchy accident causations. Results indicate that geometric features, as the predominant factors, lack compliance with the standards. The remedial safety treatment therefore focuses on geometric redesigning of the roundabout in compliance with geometric standards and traffic demand. A major change, in conjunction with other hazard reduction schemes along the roads, is also proposed to the existing roundabout. The proposed changes are expected to mitigate or remove the possible accident causes, thus reducing accident occurrences.