312/C

Managing accident data and estimating emission levels on national roads using GIS

S A Silva* and J M S J Bandara

Department of Civil Engineering, University of Moratuwa, Moratuwa

In recent years, Sri Lanka has experienced a high growth in urban population and the number of private vehicles. Most evident feature of such a trend is urban road congestion; roads in some areas are also facing unexpectedly high traffic flow which causes a lot of time waste in transit and huge losses to the economy of the country. Moreover, the vehicle accidents rates on the roads and the air pollution have also been increasing rapidly in recent years because of that high traffic flows.

To reduce the number of accidents, it is important to manage the accident data in systematic manner because it will provide the required information. This data is very important to traffic and highway engineers because it helps them to identify the unsafe locations of the roads and the reasons accidents. It is essential in road improvement projects to do the safety audits and find solution to minimize the number of accidents.

Furthermore, managing the emission data and monitoring the emission level of zones also play big role in the environmental impact assessments because currently there is a high air pollution rate in the urban areas. In addition, it is also important to identify the air pollution caused by different pollutants because it will help to recognize the types of vehicles which contribute more to the air pollution.

The objective of this study is to develop a model to estimate the emission level in different scenarios and manage the accident data to do the analysis. ArcGIS provides good platform to develop this model because the analysis tools in GIS can be directly used to analyze the available data. Methods used to develop this model and analysis options of that model are presented in this paper.

amila10_rugby@yahoo.com Tel:(0)38-2244234