



P 19 Development of GIS database for traffic accident analysis

Rengarasu T.M.,¹Jayawardana U.K.,²Abeygunawardana D. L.²

¹*Department of Civil and Environmental Engineering, Faculty of Engineering,* ²*Graduate, Faculty of Engineering*

This abstract reports the outcomes of a study carried out to develop a Traffic Accident Analysis System (TAAS) and determine accident hotspots using GIS. Developed TAAS is based on SQL and ArcGIS. Developed TAAS is an all in one system where traffic data collection, editing, and visualization can be performed. TAAS visualizes the traffic accident data on a Sri Lankan Road map. The GUI was designed by Visual Studio 2010 (C#). Traffic accident data in the Elpitiya police division for the AA class roads from 2006 to 2010 (322 accidents) was used to develop the software. Software was designed so that later more data can be added as they are available. Traffic data from Excel was converted into a shp with point features and superimposed on a line feature class having roads of Sri Lanka. GUI has two panels; right side panel shows the digital map, which was imported from the ArcGIS and the left panel shows the commands and controls. Facility was provided for categorizing the accident data, adding and editing accident data. The database has been directly linked to this GUI and the managing the accident data occurred through database. First stable version of the TAAS provided some analytical features. Using TAAS two segments were identified as having more traffic accidents they are; the road section from 61km to 63km (*Bentota*) and from 78km to 86km (from *Balapitiya to Ambalangoda*). In between those areas the highest risky locations are near to the 85 km to 86km (*Ambalangoda* area). Though this is the initial stage of the created application, this system can give a better solution for the lack of a system for visualizing traffic accident data. By this Traffic Accident Analysis System (TAAS) the accident prone areas can be identified directly by digital map.

Keywords : GIS, traffic accident analysis