IMPROVING ROAD ACCIDENT DATABASE FOR BLACK SPOTS COUNTER MEASURE PROGRAMS ON NATIONAL ROADS IN INDONESIA

Tri Tjahjono
Department of Civil Engineering
University of Indonesia
Depok 16424 INDONESIA
Email: tjahjono@eng.ui.ac.id

INTRODUCTION
Traffic accidents data in Indonesia is recorded by the Indonesian Traffic Police. Basically the purpose of recording data is not entirely for engineering point of view but is mainly for admissible as evidence in court. As in other Developing Countries, the Indonesian police data seem to suffer from under-reporting especially for non-fatal accidents and location of accident schemes are not informed properly; i.e. it is based on administration location instead of road based location. Therefore, it is difficult to obtain road information accurately from the police data and it is urgent that Indonesia should have accident database that will able to help the Directorate General of Highway to carry out black spot counter measure programs on Indonesian roads based on statistic evidence and before after study can be carried out to check the effectiveness of the program. The objectives of this paper have two folds. First is to evaluate the accuracy of the existing police recording system. Secondly is to develop the appropriate black spot safety program based on the pilot project location.

CURRENT SITUATION OF ACCIDENT DATA IN INDONESIA
Fatalities are probably the most accurate data since all fatality accidents must be processed in court. However, even these are under-reported for the following reasons [1]
- The fatality rate is mostly based on death recorded in situ. Regulations specify that traffic accident fatality rates should be based on any death caused by traffic accidents up to 30 days after the accident occurred. Any deaths in hospital during this time should be added to the data but the police rarely up-date their data with any information from hospitals.
- Accidents in remote areas with no police presence or when compensation for a fatal accident is settled by all parties with/ without police involvement is not stated in the statistics.
- There is systematic failure due to bureaucracy in the Indonesian Police. Traffic accidents are treated the same as criminal cases. Once the police are formally involved, they should follow-up the case in court, whatever the level of severity. However, almost all the police prefer not to report accidents, particularly if there is no fatality or serious injury. The fewer the number of accidents reported to the Police District Office, the less bureaucratic tension, since police promotion is based on successful completion rates for all of their cases including traffic accidents.

Currently, improvement of data recording by police is under course of action through technical assistant funded by the World Bank under Integrated Road Safety Management System (IRSMS) which expected to be started in early 2010. Yet, for the end user purposes in particular for the highway administrations, both at national or provincial/regency or municipality levels, the most variable is the location of accident scenes.

The police’s traffic accidents mostly recorded in the basis of administrative locations i.e. sub district and/or district and very few used kilometre post information. Data from 2008 suggested that only 28% accident reports mentioned kilometre post and road segment/road name. Moreover, 40% accident reports mentioned road name without kilometre post and the rest were just mentioned sub district (kelurahan) or district (kecamatan) or just based on administration location without mentioning road location at all. This will make a difficult task for road administration for having the correct information for auditing black spot or accident cluster locations. As a result, some features that are necessary important for development an appropriate counter measure programs are excluded from the police database. Therefore, accident database must be combined with road and traffic database maintained by Directorate General of Highway. The problem for combining the two data arises when location of accident is not accurate and consequently the location of accident should be revisited together with the police officer who reported in.

PILOT PROJECT
A pilot project was carried out in the Regency of Batang, Central Java Province in 2008 [2] that aims to improve road accident data by combining police, road administration data and additional side visit information. All of the accidents within the last three years were revisited together with the local police officers from the traffic accident investigation units. Coordinates of the location were also identified with GPS in order to establish GIS database system. Figure 1 shows the results of the accident cluster locations based on road segment that identified from the existing police report in the study area without any kilometre post information (162 accidents between 2006 and 2008). Figure 2 shows an example of bubble map of accidents that based on the result of GPS recording after revisited to the accident scene which can give location more precisely.
Finally, the documentation of the revisited activity was stored in the GIS software and picture of the location was also stored as can be seen in Figure 3.

As the location of accidents becomes more precise, road audit can be carry out in the area of accident scene and road-environment deficiencies that gives a risk or hazard can be indicated. The GIS based information and road data will be best tools for initial desk work assessment before carry out field visits.

**FINAL REMARKS**

Directorate General of Highway in 2010 will start to improve road safety on the Indonesian national road. Focus will be given to two major economic road corridors i.e. the North Java and the Eastern Sumatra Corridors. The black spot location identification in conjunction with the Indonesia National Police is currently being undertaken and to be mapped. It is expected that in 2010 an audit can gradually takes place and road improvement counter measures can be then carried out. This program will extremely help ensuring that all location of accidents is being recorded with its GPS coordinates.