# Developing a Report Automation Software to Conduct a Traffic Impact Assessment for Effective Decision Making in Transport Planning

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**Abstract**

Traffic congestion and delay is one of the key burning problems in urban areas. High density and sprawling development pattern lead to augmented traffic congestion in most countries in the global environment. Hence, a forthcoming development automatically generates significant vehicle demand and, it can be a danger to influence by the free flow of road traffic in the near future. Therefore, the trend of urbanization reflects the approaching development can be generated adverse impacts on the road blocking by attracting more trips alike to a magnet. As a result, each coming development intends to provide a traffic impact assessment at the standards specified in the relevant development plan to the regulations for the purpose of obtaining a development permit to put into practice the development activities. Similar to the world context, there are legal conditions that warrant a Traffic Impact Assessment (TIA) for a proposed development as stipulated in parking & traffic control (Regulation 34, Schedule III) in Sri Lanka also. A traffic impact assessment report is developed to minimize the congestion and negative traffic impacts from the approaching development. Besides, it objects to identify possible transportation issues related to the coming development and to acknowledge the developer to ease them. Consequently, there is a huge demand for the traffic impact assessments following the urban planning settings specific to the local context also. Traffic impact analysis needs to be prepared with respect to locational and spatial variation, geographic characteristic and human phenomena. Therefore, the process of developing a traffic impact assessment takes additional time and cost for the professionals and the developers, due to the field surveys for relevant data collection and further traffic analysis. Therefore, the mechanism of the data collection and report preparation discourages the productivity and quality of the assessment, due to the limited time and cost constraints. Moreover, there can be occurred continuous errors of manual report generations also.

Few past studies have been carried out to analyze the traffic impact and to measure the change of levels of services from the coming development. Although most past studies show that lots of reports generating tools are available, there is not having a study on report generating tool for traffic impact assessment. Accordingly, if having a mechanism to prepare the traffic impact assessment, once collecting the data in the fieldwork, it is highly efficient for the professionals to make well decisions. Therefore, the purpose of this study is for developing a system to generate a report for traffic impact assessment in a particular location by online accessing the field data to obtain efficient and productive professional works. The report automation software was developed using PHP programming language, and key output of the research is the report automation software for making decisions on traffic impact assessment. Thus, the system testing was conducted for ten case locations within and beyond the Colombo to evaluate whether the system is compliance with its specified requirements for quick and accurate decision making. Furthermore, the system can be used for data collection, monitoring, traffic impact analysis and report generating during the field survey. Additionally, thousands of manpower hours will be saved and directed to furthermore productive searches through the automating the reports done for traffic impact assessment. Therefore, this tool will improve the productivity, management, and quality of the development process. Besides, automatic reports will add a significant time advantage to the management of the development process. Hence, the report automation tool for the transport professional works will support to save the time and cost, to obtain an efficient and productive output for future urban and transport planning actions.

*Keywords:* Report Automation Software, Traffic Congestion, Traffic Impact Analysis, Traffic Impact Assessment, Transport Planning

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