1. INTRODUCTION

In the recent years, with the introduction of the expressways, overpasses, flyovers and improvement or rehabilitation of existing roads to the required standards, covering the entire country, the road transportation sector in our country has grown rapidly. The development which was limited to Colombo and suburbs has been expanded to all directions of the country, and made easy, comfortable and quick access to all directions. This has increased the mobility to great extent.

Rapid changes in technology is having profound impacts on society and the economy. Choices related to how, when, where and why we travel are influenced by technology and are now greater than ever before. We rely heavily on ground transportation system and its use is growing day by day. To ensure higher mobility, demanded by today’s global economy, improvements in management and operations of the existing system are essential. So there is a need to modernize and optimize the ground transportation system, in part by taking the advantage of the advances brought on by the information revolution.

1.1 Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) include the application of advanced information processing, communications, sensor and control technologies and management strategies in an integrated manner to improve the functioning of the transportation system. These systems provide traveler information to increase the safety and efficiency of the ground transportation system for passengers and freight in both urban and rural areas. ITS also provides valuable, real time information to system operators such as transit systems, commercial vehicle fleet operators. The ITS functions within each of the 4 key components of the transportation system viz.:

1. **The vehicle**: ITS technologies allow the vehicles in the system to be located, identified, assessed and controlled. The ability to locate a vehicle on a map is the key to successful fleet management and to provide in-vehicle navigation and routing advice. The ability to identify (assess and classify) a vehicle without stopping or slowing it permits more efficient and cost-effective enforcement of regulations, toll collection and user-pay applications, and
facilitates border crossings, assessment of vehicle size, weight and other vehicle related safety requirements, tracking of freight or critical cargo movements, data collection, and other related functions. Finally, enhanced automated control functions on vehicles can help improve the safety and efficiency of the transportation system.

2. **The user**: ITS offers navigation, provision of traveler information and monitoring capability to system users. Navigation capabilities can include in-vehicle navigation, route guidance and, where ITS monitoring infrastructure is installed, dynamic route guidance in response to changing traffic conditions. Traveler information provides motorists within formation and advisories on traffic and infrastructure conditions as well as available services.

3. **The infrastructure**: ITS provides monitoring, detection, response, control and administration functions in this domain. The monitoring function can apply to such applications as weather and environmental conditions, as well as to traffic conditions and data collection. The monitoring of vehicles detects rate of flow of vehicles on a road (i.e. congestion), incidents and vehicles at certain locations such as traffic signals.

4. **The communication system**: Integrated communication is what makes ITS work.

ITS applications are very successfully implemented not only in developed countries, but also in under developed and developing countries too.

Introduction of ITS in our country would solve many traffic and transportation issues of our country to certain extent. Understanding this, Government plans to introduce some advanced technologies in this sector, mainly in the expressways. But we are still behind in this sector, mainly due to unavailability of sufficient funding for investment.
1.2 Problem Statement

Main reason for the congestion during peak hours is insufficient capacity of the road. But congestion during non peak hours is due to various reasons including incidents. An incident can make the road congested, even though it is well improved.

Incident Management: Congestion could not be avoided. Any dynamic, livable, attractive city is subject to congestion. But it could be managed. Congestion results low speed, high accident rates, increased fuel consumption, increased pollution to environment, wastage of human resources and safety issue for the road user etc. In a city like Colombo, congestion has become a challenge nowadays and its severity increases further, when an incident occurs within the corridor. This study looks into the management of traffic incidents within the Colombo Municipal limits and proposes a framework for how it can be done in a cost effective way.

1.3 Objectives

Proposing a cost effective framework for the management of traffic incidents, using ITS application, for the Colombo Municipal Area.