



EVALUATION OF TRAFFIC SAFETY DURING THE IMPLEMENTATION OF ROAD MAINTENANCE PROJECTS

Bashir M. Aburawi

University AL-Margeb – Faculty of Engineering, Libya

Abstract

Roads are the most important component of the infrastructure to connect all cities to each other and with neighbouring countries to serve the citizens socially and economically. The exchange of rural or urban products can be done using roads as goods could be moved from one place to another. Also, roads play important role in: facilitating the transit trade, supporting the tourism sector and providing good communication between neighbouring countries. Nowadays, all the countries are paying great attention to road projects through establishment of new roads and maintenance of the port which also established the relevant authorities to take such legal affairs of the road network in terms of planning, implementation and maintenance, processing and ensuring the security of its users in order to achieve traffic safety. Traffic safety aims to embrace all the plans, programs, traffic regulations and procedures to reduce or prevent the occurrence of traffic accidents, wider aim is to ensure human safety and property. The main three elements of traffic safety are: the vehicle, the road and the human element. In the implementation phase, all the road ways must be provided with all safety means, this involves; regulatory, warning and guidelines, traffic signs, road markings, terrestrial lines and paint, cats eyes reflectors and other markings in addition to signs between the tracks and hazard warning lights and metal fences on both sides of the road to ensure a fully protection of the traffic. Not to mansion, the maintenance phase to keep the same level of safety on the road and keep the follow of the traffic safety and try to improve any problems (not taken into account in the previous phases) that may result from the use of the roads.

Keywords: Roads-traffic safety – road maintenance.

1 The definition of traffic safety

The traffic safety in its widest sense aims to adopt all the plans and programs, traffic regulations and preventive measures to reduce or prevent the occurrence of traffic accidents to ensure human safety and property and maintain the security of the country and principles of human and economic development. [1]

The broad concept of traffic safety is to implement all plans and programs of traffic rules and regulations and preventive measures to reduce or prevent accidents and to protect the rights and ownership and protection of citizens and economic issues.

2 Elements of traffic safety

The focus of traffic safety is in three components: the vehicle, the road, and the human.

2.1 The vehicle

Means of vehicle safety are:

- 1 Frames in terms of size, quality and durability, speed rate and year of production.
- 2 Lamps in terms of clarity, colour and lighting level.
- 3 Lights in the vehicle or turn the function on the alert.
- 4 Warning signals of sound and light as fuel, oil, temperature, speedometer and battery.
- 5 Safety belt, head restraints, child seats and airbags.

2.2 The road

Means of safety on the road:

- 1 Due to the importance of road traffic in the process, the governments were seeking to establish and construct road networks with high level of quality in various parts of the country. This is could be done by taking into account the following:
- 2 Engineering design and planning of the road.
- 3 Road lighting.
- 4 Validity and extent of road traffic safety by natural obstacles such as removing soil and sand.
- 5 Planning devices, traffic lights, on the road and warning signs, informational and marking floor.

2.3 The driver (human)

The driver is the most effective factor for the traffic operation; several good recipes in the driver must be available:

- 1 Mind.
- 2 The safety of the senses.
- 3 Knowledge of traffic rules, regulations and observance.
- 4 Focus while driving.
- 5 Sense of responsibility.
- 6 Knowledge of vehicle mechanics and maintenance on an ongoing basis.

3 Traffic accidents

Traffic accidents have become a largely concern and concern for all members of society, and have become as one of the most important problems that drain material resources, human resources and target communities in the most important necessities of life which is the human element in addition to the problems suffered by social, psychological and material losses, which have had to work on solutions and suggestions and put in place to reduce these incidents or at least address the causes and mitigation of the negative. [2]

4 Marks the importance of regulation and guidance in the movement

Highlights the importance of organizing and warning signs and guide traffic and traffic lights, lines and equipment by the competent authorities and underlying objectives of securing the protection and safety and security for vehicles and pedestrians within and outside the areas of maintenance work and give road users the time required to respond to the requirements

of state of the road. Through studies indicate that the traffic safety in the case of streets and roads construction and maintenance are of the important work. The planning control in traffic areas of work and construction designed to achieve maximum security and safety and removing the conflict and potential delays and ensure the smooth flow of traffic in work areas. [3]

5 Means traffic safety in the implementation of maintenance of road projects

The goal of traffic safety areas of work to provide the basic principles that govern the design, use and traffic safety in traffic areas of work and construction. This will also be a means in the case of construction, roads and maintenance. This paper will describe the procedures and practical to regulate traffic in the areas of work during the construction and maintenance of roads.

The importance of implementing the specifications in traffic control is a mandatory and uniform so that the specifications and conditions common to all competent authorities in order to guide and inform the traffic safely and effectively in work areas and construction that may pose a threat to those already. There are road signs and signals, and any standard means of other traffic control in work areas are properly handled and an important responsibility by a continuous basis of all the parties concerned.

6 Objectives to control and regulate traffic in work areas

Planning aims to control traffic in the areas of construction and work to achieve maximum security and safety and eliminating the conflict and potential delays and ensure the smooth flow of traffic in work areas. There are two main objectives first: to avoid accidents by following the procedures for the use and means of effective control easy to see and distinguish and mitigation of materials and objects hard for fear of collision and reduce the conflict between the movement of personnel and equipment in the areas of work and the movement of vehicles in transit and ensure a clear vision of using the lighting means reflective signs and warning lights and securing safe corridors for pedestrian traffic separated from the movement of vehicles and the use of flags and flashing lights of fixed or moving. [4]

The second objective is to reduce traffic problems in the work area and make the traffic flow by avoiding causing low speeds so as not to cause harassment, long delays and clarify the path or in the alternative plan of action to return control of traffic and should be tested before the initiation of construction or Maintenance work zone information, the emergency services such as police, civil defence and aid to the project proposal and give first priority to the passage of emergency vehicles, ambulance while in transit to the work area or use an alternative route to cross, and after completion of construction or maintenance should open the way for the tracks traffic as soon as possible to restore the operational efficiency of the road maximum.

7 The preparation of plans in traffic control

Before implementing the construction or repair work and maintenance, or any other activity areas of work, we should develop a plan for traffic control so that they form an essential part of the plans and specifications and estimates of project construction or maintenance.

The size of the project or type of business planned a determinant of the level of detail for plans to control traffic in order to achieve coordination between the traffic and the work of the project. Plans should also involve traffic engineers and Coordination Office in the secretariats and in the municipalities and the Ministry of Transportation or other authorities responsible for roads in the preparation of plans to control the movement of traffic, can consulting firms or contractors also develop implementation plans for controlling the traffic to win the approval of those official bodies. [5]

8 Stages of the use of traffic control in work areas

As it is known, it is natural to be accompanied by construction of roads or maintenance changes in the patterns of normal conditions of traffic. In order to guide and secure the traffic and pedestrians and workers through the work area, it requires to provide special means to control the traffic in the area of operation of the project, which is often divided into five regions:

- 1 Area of early warning.
- 2 Transition zone.
- 3 Buffer zone.
- 4 Action Area.
- 5 The end of the work area.

9 Traffic signs

The three main types of traffic signs are regulatory, warning and guidance. those are important means to control and direct traffic properly and sound. The signs include traffic signs and fixed signs or banners and hand units, lighting, directing and marks the limits and barriers of mobile. In addition, all traffic signs will be used at the sites must be of the type inverter with accepted international standards.

9.1 Sites installation of signs

Traffic signs are placed in the appropriate places so as to give drivers the message desired in the best in line with the design and the route and allow them to respond during the appropriate time.

9.2 Regulatory signs

Signs are regulatory signs which require all the traffic commitment and adherence to them. Regulatory signs are used in work areas or during maintenance and if the use of regulatory signs for a temporary period must remove or cover signs regular organizational list if conflicted with an update on the work area so as not to cause confusion to drivers.

9.3 Warning signs

The aim of the use of warning signs in work areas or maintenance is to inform the drivers to take caution while transiting this area where there is a possibility of certain hazards.

9.4 Media banners

Media banners and signs for the ground-work or maintenance, including the signs and the names of roads or streets and used with the sign of the exchange and include special information signs placed at the beginning and the end of the work area.

9.5 Barriers and routers provisional

Of the functions of routers provisional alert and warn drivers of potential hazards during their passage in the work area or near to, and guide them and guide them to bypass the work area safely. The most important organs of the interim guidance are the cones and reflective vertical panels, drums, plastic sheeting and mobile barriers. [6]

10 Control of traffic in work areas

The main objective of traffic control procedures is to guide traffic to the right direction, whether during or around the work area or next to where the first consideration is always the safety of traffic and personnel in the region.

Control traffic in work areas is an important part in the process of road construction and maintenance of facilities, or so I put her laws that must be applied, such as traffic systems and control in various positions and the speed limit of each region, and different uses for different business requirements. Moreover, maintain good public relations with the public is essential as the operator site and the holders of Banners to be on a good level of kindness in their dealings with the drivers and as holders for the flags of traffic safety officials are facing public through their work, so it must be selected in to qualify for this post, as they prefer to be not less than average intelligence, and in good physical condition, down; mind and those with good appearance and behaviour of a modest and firm to have a sense of responsibility towards the safety of the public and site workers and the ensign that wearing a safety vest or shirt and a hat of red and be reflective when used in times of the night. The holder of the banner must be clearly visible at a sufficient distance to traffic approaching him. [7]

11 Methods used by local companies to secure the traffic safety in the implementation and maintenance of road projects

Through field visits to some projects for implementation and maintenance of roads implemented by some foreign companies, local companies and follow up actions and the means used to secure traffic safety in the implementation and maintenance of road projects shows that the traffic safety in the case of construction and maintenance of roads for some foreign companies and some local companies are acts of third parties important, and it is attention to due process and applied to regulate the traffic in work areas during construction, maintenance, and these companies use the road signs are good and others are clear and others had banners holders and non-specialists who do not have full knowledge of these acts to regulate the movement of vehicles for the purpose of securing the movement of traffic and pedestrians and workers through the work area. Pictures 1 to 3, shows lack of interest in some companies through the implementation of traffic safety and maintenance of road projects.



Figure 1 Ensign is not eligible for such acts



Figure 2 Use of metal drums non good



Figure 3 Barriers do not comply with the technical specifications

12 Conclusion and recommendations

- 1 Roads are the most important component of the infrastructure to connect all cities and villages to each other.
- 2 Traffic safety is to implement all plans, instructions, and traffic laws and preventive action.
- 3 Highlights the importance of organization and warning signs and guide traffic and traffic lights in securing the protection and safety and security for vehicles and pedestrians within and outside the areas of maintenance.
- 4 Must be accompanied by construction of roads or maintenance changes in the patterns of normal conditions of traffic.
- 5 In order to guide and secure the traffic and pedestrians and workers during the work area is required to provide superfluous special means to control the traffic in the area of operation of the project.
- 6 There is a need to develop a national strategy to reduce traffic accidents in general.
- 7 We can reach the level of the best in traffic safety through proper handling of good governance and capacity-eligible.
- 8 Development of strategy specific detailed studies in the field of traffic safety based on the statistical data of accidents.

References

- [1] Bakri, Alaa Abdel-Rahim, “a reference in traffic safety, traffic accidents, the reality and solutions”. 1997
- [2] International Federation of Red prevention of road accidents, Volume II, Lisbon. 2004
- [3] Federation of roads, user and traffic control devices, Department of Transport of America, in 1983.
- [4] Federation of public roads, the directory of common means of control in traffic, Department of Transport of America, in 1987.
- [5] The Union of public roads, standards and principles of traffic control in areas of work, Department of Transport of America, in 1985.
- [6] World Health Organization. World report on the prevention of injuries caused by road accidents for 2004, Geneva.
- [7] Osama bin Ibrahim Abdo, and Tarek Ben Mustapha “In consistent, the responsibility of different agencies to traffic violations”, a working paper submitted to the Second National Conference on Traffic Safety, Riyadh. 2004.

