

The Problem of Traffic Congestion at Boabat Abdel Gayoum Street, City of Omdurman, Sudan 2015

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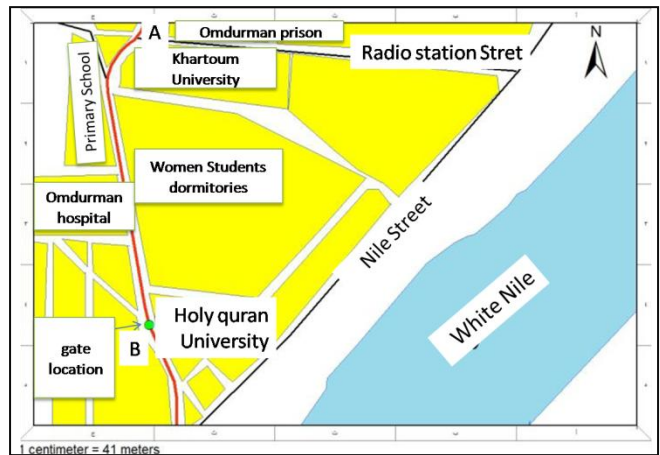
Abstract

The study aims at studying the problem of traffic congestion at Boabat Abdel Gayoum Street (see map 1) and the other problems that accompany it in order to find solutions to this problem. The study followed the descriptive analytical method. The paper reached conclusions that diagnosed the problematic before suggesting recommendation to solve it.

Keywords: Traffic Congestion, Boabat Abdel Gayoum Street, Omdurman.

Introduction:

The traffic jam hampers the city development as a result of the delays it causes in the flight schedules which in turn causes great financial, social and environmental losses. The source of traffic congestion in Boabat Abdel Gayoum Street (from point A to point B as indicated in map 1) is the multiple use of the buildings around the Street and the density of users such as the pedestrians, car drivers (private or governmental). The Street goes by the Women's Prison from the North side and stretches by the middle of a school complex, the Central maternity Hospital and then the complex of the dormitories of the University women Students till it reaches Boabat Abdel Gayoum (see map 1), the study is targeting a solution to the problem of congestion and the minor problems stemming from it.



Map 1: shows the general location of Boabat Abdel Gayoum Street and the multiple users around it (location of the Boabat 15.38 – 93 latitude and 32 -32.29 longitude)

Source: the researchers using Google Earth program

The Methodology of the Study:

The study uses the descriptive analytical method. It also consulted the information found in a number of periodicals references and related scientific papers.

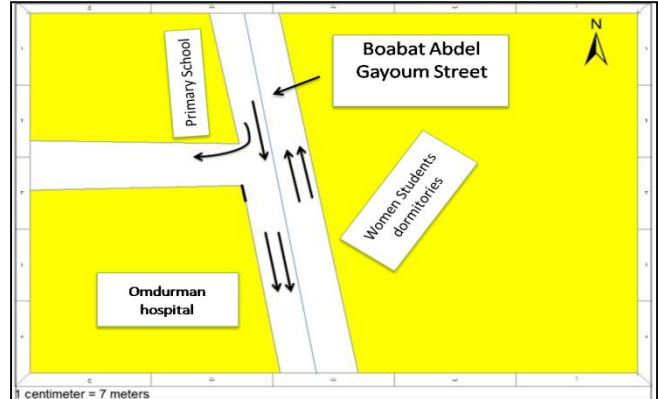
Analysis and Discussion: ⁽¹⁾

Description of the traffic in the Street from point (A – B) see map 1:

- A. The morning peak hours in the direction going to Khartoum From 9a.m – 11 a.m where the percentage of private small cars comprises the greater part of at the two lanes of the street as follows:
- B. The evening peak hours in the same direction is (3p.m – 5p.m)
- C. The morning peak hours in the return direction is from 9a.m – 11 a.m and the evening peak hour in the same direction is between (3p.m – 5 a.m.)
- D. In addition to the lack of street capacity, the traffic slows down in the on ward direction because the students and workers are heading during this period to the place of work and to the universities. When the two lanes meet in the street, the street is full with cars due to the inadequate street capacity to accommodate such traffic and the need to have an additional lane for cars heading towards Khartoum. This leaves the drivers with no option but to use the median area that lies between the two directions. The traffic is transformed from two lanes to only one lane in a very specific part of the street. The pedestrians’ movement is intensified during this period besides the parkings of random transport cars in front of hospitals and the irregular street vendors by the two sides of the road. The students transport causes the traffic to slow down during this period.

As for the return direction, the major reason for the traffic slowdown is the lack of capacity to accommodate the huge number of vehicles besides the traffic slowdown caused by the parking located near the Women Students dormitories same as the heavy pedestrian movement of those women students.

With regard to the remaining hours of the day beyond 7 p.m. and before 7 a.m. The traffic is light and the street capacity is quite sufficient (see map 2).



Map 2: shows the flow of the traffic during the remaining hours of the day
 source: the researchers using Google Earth program

E. Street Description:

Boabat Abdel Gayoum Street is composed of two directions and 4 lanes, with 2 lanes for each direction. It is 30 m, in width and the asphalt width is 12 m. It is clear that there is a heavy traffic jam at Boabat Abdel Gayoum Street from points (a- b) see map1. Following the exhaustive study carried out through this paper.

Conclusions: ⁽²⁾

- 1. The road users that cause the heavy traffic vary with its two types (mechanic, pedestrians; see map1);
- 2. The inadequate road capacity to accommodate the number of vehicles particularly in the morning peak hours from 9a.m – 11a.m. and the evening peak hours from 3p.m – 5 p.m.
- 3. The existence of parking lots (the Women Students Dormitories parking, the rickshaws parking, Amjad parking in front of the hospital) which causes the street to be narrow and the drivers are obliged to use the median area between the two directions of the street, taking into account that there are no sidewalk branded parking and service lanes in the street;
- 4. No-abidance by the traffic rules by the street users.

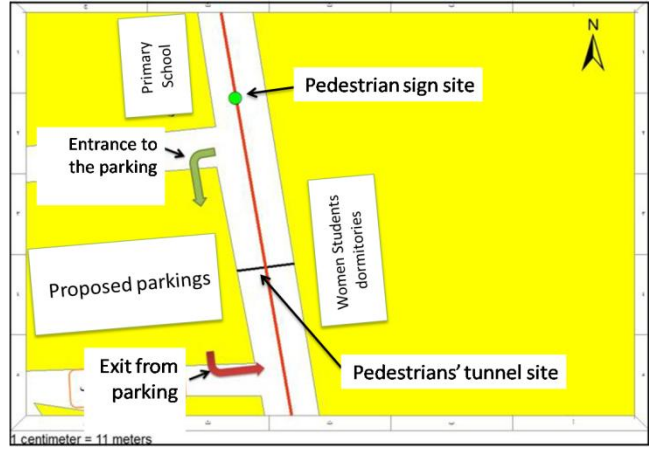
⁽¹⁾ The data indicated under this title is originated from the researchers’ field work and the statistics tables.

⁽²⁾Source: the researchers using the statistics and field survey.

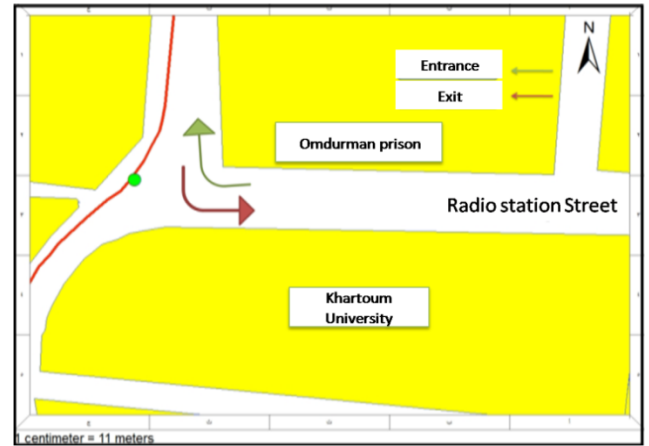
5. The existence of design problems the major of which is that there is no median island and the pedestrians sidewalks are close to the part of street reserved for cars in addition to the negligence of the Street width and length at the location of curves and the buildings corners are all straight and the distance of vision is not taken into account;
6. The existence of environmental problems such as the pollution among others as well as the disappearance of aesthetic features;
7. The most frequent types of cars are the small private cars with a percentage of (45% - 60%) in the two directions.

Recommendations:

1. Transfer the hospital (because its use does not match the other types of services within the area such as educational services, archeological services, etc... The space of the hospital shall be used for parkings. A special multi-storey parking and a public parking (to accommodate transport vehicles and the Women Students Dormitories parking).this parking should be connected with a pedestrian tunnel (see map 3, photo1)
2. Redesign the street to accommodate the flow of traffic (5 lanes) (3 – 2 return) (see photo 1) and shifting the movement of the general vehicles to the Radio Broadcasting Street and passing by the Nile Street (see map 5)
3. Install a pedestrian traffic signal in front of the school for the school boys at the intersection of Boabat Abdel Gayoum Street with the Radio Broadcasting Street to organize the vehicles movement. Another traffic signal shall be placed in front of the school and synchronized with the Radio Broadcasting intersection electric signal (see map 3, photo1).



Map 3: showing the proposed pedestrians, tunnel, the proposed building to be demolished and the signal location, source the researchers using Google earth



Map 4: showing the the shifting of vehicles movement through the radio Broadcasting Street explaining the entrance and exit of vehicles to and from the Street, source: the researchers using Google Earth program

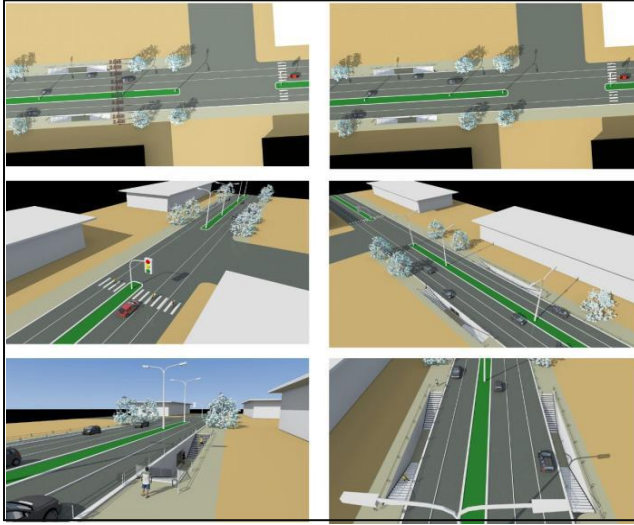


Photo (1): showing the proposed pedestrian tunnel and the pedestrian sign in front of the school, source: the researchers

4. Provide the funding to implement the solution to put an end to the problem.
5. Support similar studies to solve traffic congestion in all the network.
6. Distribute highly crowded buildings in order not to be neighboring each other and in different streets if possible.
7. Activate the legal control on traffic.
8. Using the smart parkings for regular periods at both sides of the street and provide safe crossing for pedestrians;
9. Provide road maintenance.
10. Encourage public transport by solving the problems of public transport and provide equipped vehicles and decent, comfortable and fast means of transport for citizens on their way to work in order to save money, fuel; effort and time as well as to encourage the user to take the public transport instead of the private cars.
11. Diffuse the traffic culture for the road users.

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