

# Appraisal of the Problem of Public Transport Parking's in Shuhada Square, The city of Omdurman, Republic of Sudan 2015

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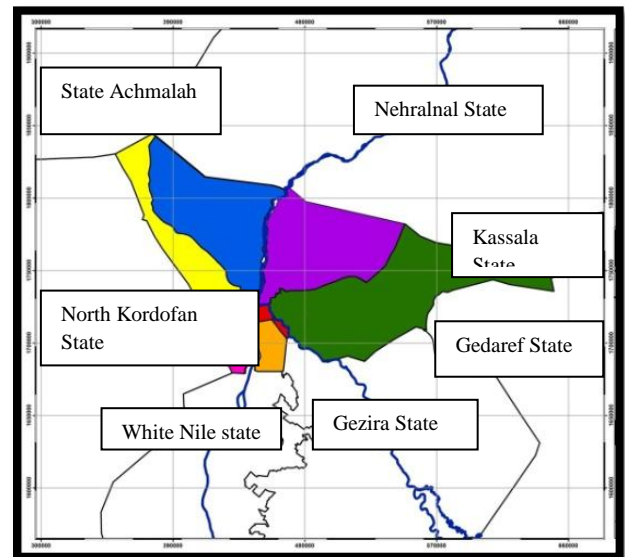
## Abstract

This paper deals with the study and consideration of the problems of public transport vehicles congestion in Shuhada Square (See Map (1) and the problems that obstruct the movement of cars within the Square. The study is proposing solutions to these problems.

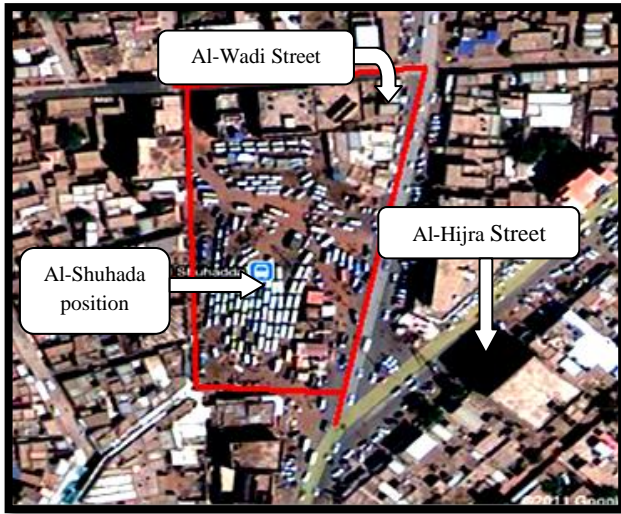
**Keywords:** Public Transport Parking, The City of Omdurman, Al-Hijra Street.

## Introduction

The Shuhada area is regarded as one of the most important bus stations that link Omdurman to its several surroundings. In fact, the said area is encountering a lot of problems and since the issue and importance of the study, development and organization of Shuhada area is becoming a priority for the concerned authorities, it is inevitable to address this issue. See Aerial photo (1).



Map (1) Location of Khartoum State in Sudan  
Source: Researchers –scale 1: 1.250.000



Aerial photo (1) indicates the location of Al-Shuhada square  
 Source: Researchers from Google Earth

### Methodology of the Study:-

The study used the descriptive analytical method as well as a considerable number of references and outcomes of the field survey carried out by the researchers in the area of study.

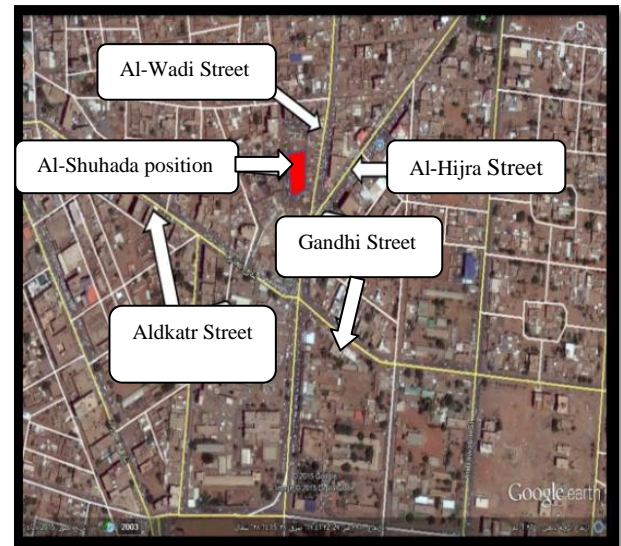
### Targets of the Study:-

This study aims at solving the problem of traffic congestion in public parking's and its negative impact by putting the focus on the area of study.

### Analysis and Discussion:-

#### Study Area Description:-

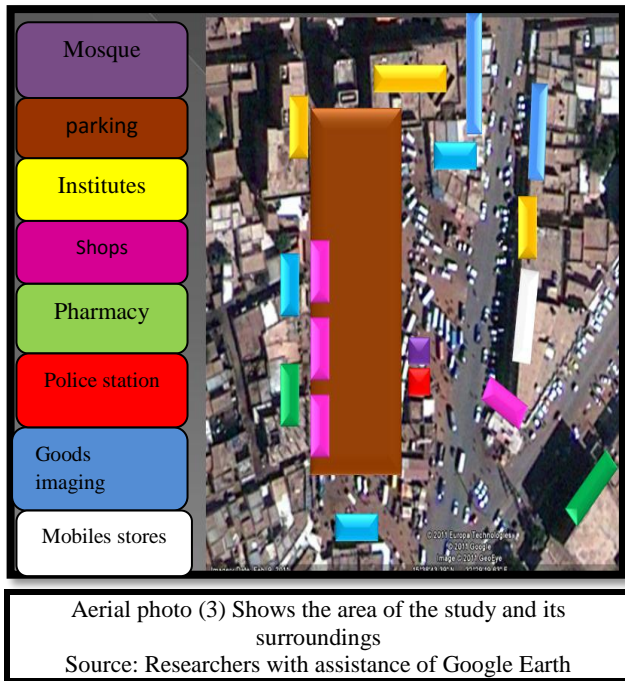
The area of the study lies in the eastern boundaries of Omdurman in parallel to Shambat Bridge surrounded by several streets as shown in Aerial photo.(2).



Aerial photo.(2) showing the streets surrounding the area of study-  
 Source: Researchers with assistance of Google Earth

### Analysis of the Area of Study and its Surroundings:-

The functions vary in the area of study from commercial sites, institutes, internet cafes, pharmacies, praying room and police station as shown in Aerial photo.(3)



### Design standards for a public transport station<sup>1</sup>:-

- 1- The station shall have a waiting canopy located at the same direction as the car. Its height should not be less than 3m from the level of the sidewalk for pedestrians to be protected from the sun rays and rain. The station should be provided with waiting seats of not less than 1.82m fixed on the sidewalk.
- 2- Paint the area reserved for the bus stop on the street. The outer frame should be in white with the dimensions of 6. 3m and BUS STOP should be written in yellow. The paint should be of cold hammering type and glass molecules should be sprayed on the paint to reflect it for night vision.
- 3- The station should be provided with services such as the lavatories, prayer room, security office and small shops servicing the passengers

<sup>1</sup> Design standards for a public transport station – Design elements

### Conclusions<sup>2</sup>:-

The study summarized the following conclusions

#### 1-Identify the movement of vehicles targeting the area of study

The major lanes of the parking are identified through the study of the public transport movement within the area of study. These lanes are based upon two main streets (Alwadi Street – Alhigra Street) that encompass the parking and lead to it thus representing the traffic movement lanes around the area of study.

##### i- Al-Wadi Street

Two-way street with two lanes of traffic with direction from the north to the south of width 12m. heading towards karari and back, and it is considered the main access to the study area

##### ii- Al-Hijra Street

It is a two way street with two lanes for each direction heading towards the northeast with 15m width till it reaches the ZaimAzhari cross-roads or coming back from it. It is considered as the main entrance for those coming from Shambat Bridge towards the area of study where the two streets meet at one point thus forming together Omdurman Hospital Road.

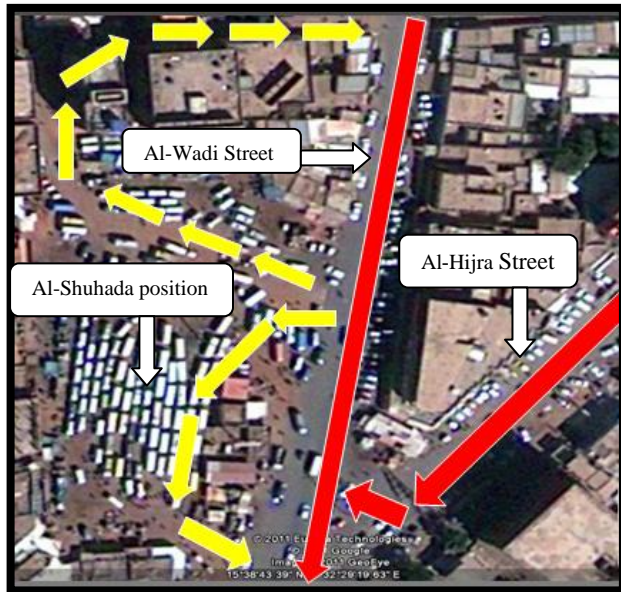
#### 2- Identify the problems in detail within the area of study

In the parking (area of study) the flow of traffic is based upon four lanes as shown in Aerial photo (4):

- i- Two entrances at the middle of the parking (eastern side of the parking).
- ii- Two exits: the first one is located at the southern part of the parking (area of study) for big buses. The

<sup>2</sup> All the results are stemming from the field survey data and the number of vehicles.

second one lies at the northern side of the parking (area of study) for the small haices and graces.<sup>3</sup>



Aerial photo (4) indicates the traffic flow of the vehicles in the study are – Source: Researchers with assistance of Google Earth

### 3- The area and capacity of the study area:-

- i- The area of the study area (Al-Shuhada transportation station) is 9189.30 m<sup>2</sup>.<sup>4</sup>
- ii- The station can contain 60 public transportation vehicles (medium size buses) in one hour, 25 passengers for one bus.
- iii- The total of the registered vehicles as transportation lines of the station is 439 vehicles.<sup>5</sup>

### 4- The problems of traffic jam in the study area:-

- i- The lack of parking lots for private cars.
- ii- The lack of clear entrances and exits in the public parking (Square).

- iii- Public transport vehicles stop at both sides of the streets for passengers.
- iv- The existence of kiosks inside the square led to a random movement inside the square.
- v- The lack of infrastructure in the bus station ( sewage systems, garbage collection sites, lights for night vision, services, waiting areas, lavatories.
- vi- The old roads in the study area are not in conformity with the design standards and physical planning. This is demonstrated by the use of adjacent areas neighboring those streets, the development standards.

### Recommendations:-

To solve the problem of public transport at the area of study, the researchers reached the following recommendations:

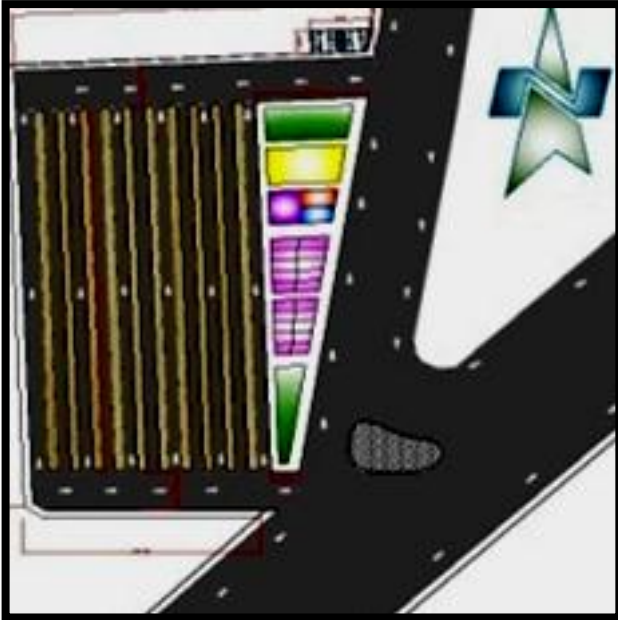
- 1- Removal and reorganization of the kiosks in the area of study (Shuhada square).
- 2- Divide the station into 11 lanes for cars with 10 big buses for each lane every half an hour.
- 3- Removal of the north western entrance of the station in order to have one entrance and one exit. The north eastern entrance shall be used as an entrance and the south eastern exit shall be used as an exit for the station.
- 4- A board should be provided containing the minimum of information (No. of station, lines servicing the station etc...). The and 65cm length.
- 5- The station is designed following the heavy trucks parking system with 12m at the entrance and exit of the station according to the lane reserved for the destination of the journey that start at 4m width from it.
- 6- Asphalt the entrance and the exit for pedestrians and demarcate their way towards the bus and paint the stripes on the parking ground periodically.
- 7- Provide human services (kiosks for some needs) and security within the area of study including (lavatories, mosque, police station, traffic office, lines control office to oversee the cars at the station as well as their entrance and exit besides the control of the maintenance of the parking and the provision of all necessary requirements for its proper functioning as shown propped conception photo (1), p.c .photo(2), p.c.photo (3).

<sup>3</sup> The status quo in the study area

<sup>4</sup> Omdurman locality- Shuhada Unit

<sup>5</sup> Omdurman locality- Shuhada Unit

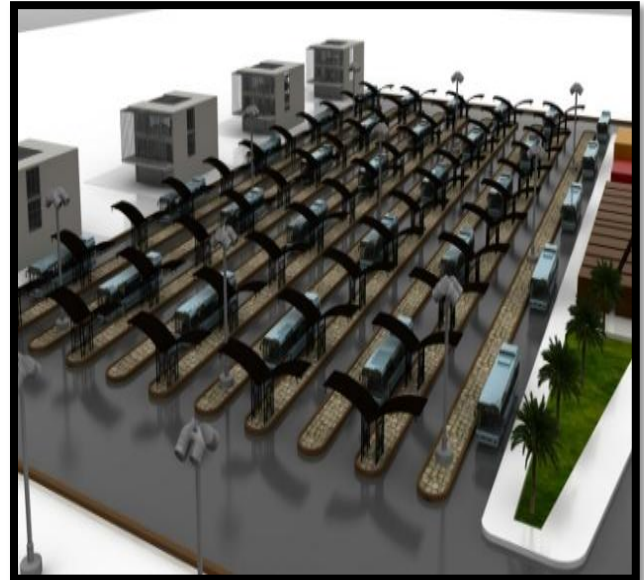
\* p.c.phot(propsed conception phot)



p.c.photo (1) shows the final conception of Al-Shuhada  
 Source: – by the researchers



p.c.photo (2) showing the final conception of Al-Shuhada  
 Source: – by the researchers



p.c.photo (3) showing the plan of the final conception of Al-Shuhada  
 Source: – by the researchers

8. Removal of any permanent or temporary obstacle at the square and compensate the owners in a fair manner.  
 The station should be subjected to the Government authorities and all the servicing public transport cars the Government authority.
9. Prevent the parking or entrance of private cars into the site (Shuhada Square) to help reduce the congestion inside the station.
10. All the resources obtained from the services inside the parking should be allocated for cleaning and maintenance of the station
11. Prevent all negative aspects resulting from the ambulant vendors who lay their items on the ground.
12. No parking for private cars in the streets and roads leading to the station.

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