



# The environmental impact of ships traffic in and out of the Dubai Creek

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## Abstract

The Creek, “**The Traditional port**”, is the main artery in the regional trade, used to re-export the goods to other Gulf’s States, India and African countries. this trade has rapid commercial and developing activities. the type of ships used in the Creek are the wooden made ships known as “*Dhow*”, and the other smaller ferry boats known as “*Abra*”. This rapid growth of regional trade has led to the establishment of several transport projects and the development of new berths for the increased activities of the traditional ships, including the recently completed Dhow Marina wharfage. The environmental problems in the Creek are the result of the traffic which has produced negative effects in form of different types of waste. The congestion of ships (*Dhow*) and Ferry boats (*Abra*) along the banks of the Creek is increasing day by day. With this, environmental concerns are equally on the rise. The main aim of this paper is to evaluate the environmental problems of ‘Ship Traffic’ in Dubai Creek, which has been used as a natural harbour for the regional trade for a long time. The problems ranging from the concern for the increase in the waste dumped in the Creek, to the congested ships and ferryboats movement, and their emissions etc. The main objective is to try and analyse this problem from the geographical point of view and find out the geographical factors which can assist in studying and solving the problem, but there are some difficulties in data because these issues have not been studied before, therefore, the lack of information has become the main obstacle to projecting the right picture about the environment problems of ships traffic.



## 1. Introduction:

Dubai has for long relied on trade activities and transportation operations through its sea ports which distinguished as the re-export centre to the Gulf Region, India and the East Coast of Africa. Nowadays, the commercial activities have expanded to cover all world countries using the transport system of Dubai Emirate. Dubai Creek is an element of this system and is recognized as an active port among others ports in terms of re-export activity.

The Creek, is an old harbour in Dubai used to serve the regional trade; and the development of the whole infrastructure has assisted this part of the transport system to enhance the facilities to those who use the ships in a trade that has pumped in a lot of investment to develop the berths and warehousing. The official policy of Dubai has encouraged the trade activity and its continuation; but on the other hand, it has not taken into account the importance maintained of environmental problems which affect the Creek internal ships movement; and especially the in and out traffic from the Creek that has increased in the last years. However, this traffic is increasing the waste problems.

The main aim of this paper is to evaluate some of the environmental problems of the activity of the ships in the Dubai Creek. These problems range from the concern for the increase in the waste dumped in the Creek, to the congested ships and ferryboats movement as one of the urban transport modes in the Emirate of Dubai, also these movement caused some of emissions. In this part of Gulf area, the environmental concern is very new to which has made some sort of lack of data related to the marine pollution and other environmental aspects.

There were some researchs and papers have studied the environmental impact, but in different parts of the UAE. Al-Mehairi (1995) studied the environmental aspects of the Transport in Dubai. Doxiadis Consultants has studies Dubai area in order to established a comprehensive development plan which they have mentioned about some environmental topics.



This paper will analyse the problem from the geographical point of view to identify the types of interrelationship between the *problem* and other geographical aspects, and how solutions can be provided to keep this important Creek clean..

## **2. Stages of the development of Dubai Creek as a “ Traditional port”:**

Geographically, Dubai Emirate has two main areas divided by the Creek which penetrated into the hinterland up to 13 Kilometer South. Creek's size has changed many times depending on the development which is reflected by the economic activities of the local people in trade and especially the activity of export and re-export of trade to lateral countries.

Dubai Creek has passed in many stages of development since 1955, when the small wooden ships used the Creek to load the cargo on its banks. This stage was the first in its development. In 60's it further has developed in two stages to setup main berths and to setup many offshore oil companies and other firms on its banks. Environmentally, that firms operated the ships and the oil tankers which were repaired inside the Creek caused a lot of leaking oil dumped, and some parts of machines or equipment in the Creek bid. Now, these companies have moved out of Creek but they left the problem on the bed. This point will be mentioned in the next section. In last three years, Dubai Municipality has been concerned about the significance of the environment issues in the Dubai areas. The Creek is the most important part where there is a need to assess the problems resulting from the waste dumped fro a long time. These efforts should be given more attention and require a strict policy toward establishing a better environment and a better urban transport system within the city and especially the marine transportation.

In the 1990's, the authorities are beginning to improve the Creek in terms of keeping it clean and also to keep it active in terms of ships traffic. In this year, they established new berths for *Dhows*, and more supervision from local authorities over the ships to be more environmentally friendly. As mentioned



before the significance of *Abra* movement between the two sides of Dubai which is eased the movement of the people those who work in the CBDs in the both sides of Dubai especially.

### 3. Environmental Problems of Ships Traffic in the Creek:

The environmental problems of the Creek result from three main sources: 1) the movement of commercial ships (*Dhow*), 2) the movement of small Ferryboats (*Abra*), 3) and as a consequence of the planning process in the land-use which is appeared along the Creek banks as in Figure 1.1 that has created some inappropriate land use such as the *Dubai Jadaf* Ships workshop an industrial area for ships repairs. For a long time the increase of the ships movement has caused congestion and most of these ships are operating by diesel machines. Consequently this has led to the production of too much emissions in the Creek and more air pollution. Ferryboats, as the urban seaborne transport system is recognized as one of the major urban movement in the city also contributing in pollution.

#### 3.1 Waste

Waste is the real threat to the Creek environment which caused from the high movement of ships using Creek. Within the last few years the Dubai Municipality efforts have concentrated on cleaning the Creek of the dumped waste left in it for a long time and caused by oil companies which were using Creek sides for their operations. Since 1992 the volume of waste which collected from the Creek has grown from 13 tons in 1992 to 180 tons in 1995 as a dumped waste as shows in Table 1.1 and it might be going to rise every year as a result of the increasing in the commercial use for this Creek. This indicated the significance of the problem of waste in Creek. That is because the Creek represents the main place for cargo activity in which ships are the main transport mode.

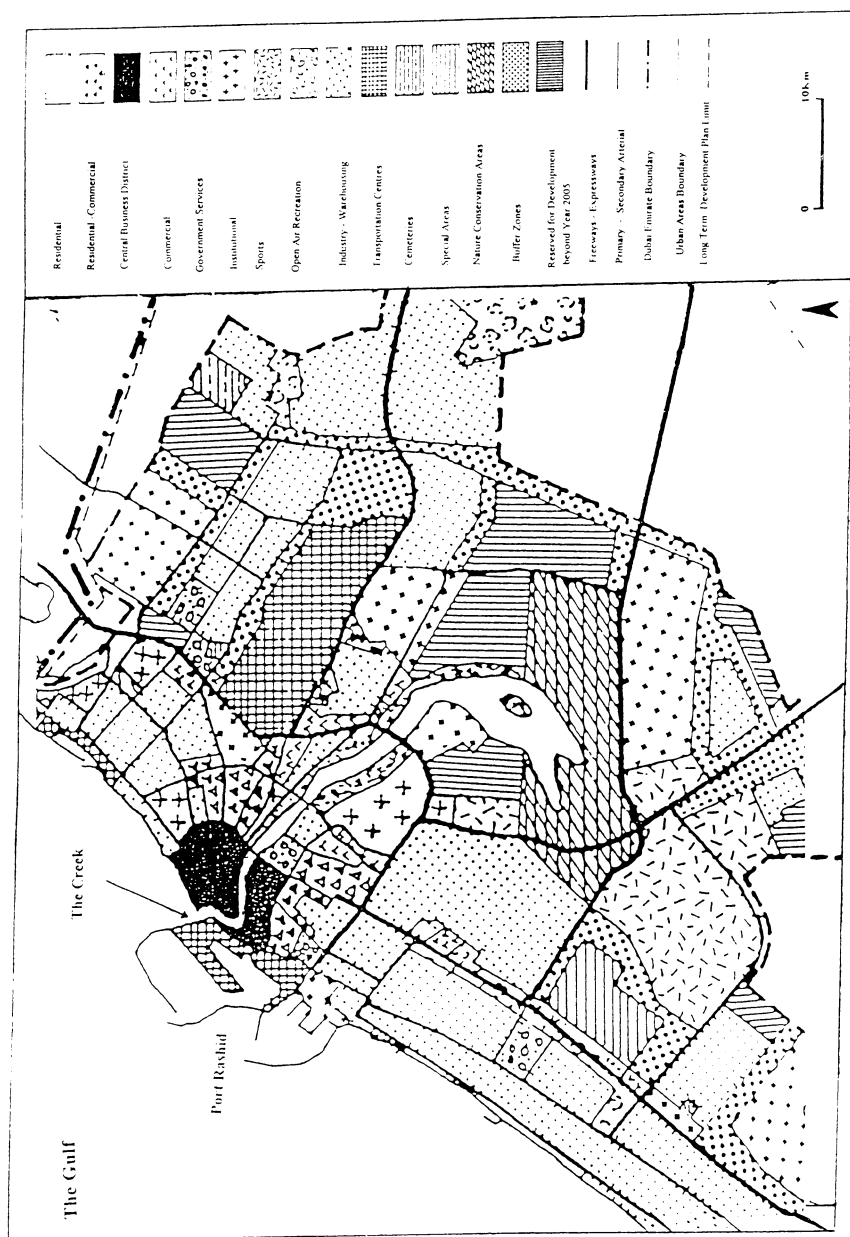


Figure 1.1 Dubai Creek - Long Term Land-Use Plan.

**Table 1.1 Waste Growth in Dubai Creek, Dubai Emirate.**

Year	Waste in Kg.
1992 (Aug -Dec.)	13,940
1993	64,638
1994	134,858
1995	180,460

Source: Dubai Municipality, Environmental Protection & Safety Section, 1996

The type of waste produced by the ships are mainly personal items such as cans and bottles which are throw into the Creek, and that is due to the carelessness of people on the ships or as a result of the lack of environmental education. The different types of ships are operating within and between the Creek and outside of Dubai Emirate, these ships are affecting in the environment of the Creek if the waste volume increased which eventually caused a lot of problems against the investment in these systems. However, it should be a formalised strong policy to reduce the problem. Also, the lack in the land use planning is making a lot of environmental problems and that was very clear to some oil companies and in particular the *Dubai Jadaf* which is located inside of Creek. As a result of wrong location the *Dubai Jadaf* caused environmental problems like solid and liquid waste in the Creek despite their concern in this issue. This problem goes back to long time when they have planned areas of Dubai and especially the Creek in terms of development of land-use.

### 3.2 Congestion:

The congestion in Dubai Creek is recognized as one of the main urban transport problems in Dubai. Recently, this problem has been a major obstacle to the development of this important artery, especially with the continuing increase in the commercial and trade activity which moves within this Creek from Dubai to others



places. Dubai Creek as a traditional port has been developed as mentioned before in terms to offer more facilities for the commercial ships, and for *Abra* ferryboats as urban transport mode transporting the passengers between the two sides of Dubai. Location of the activity of *Abra* in the CBD which has more concentrated population than any of the other places because of the location of the markets and the commercial offices in that area. *Abra* is serving the movement of different people who work in Dubai and it is distinguished as a traditional type of cross-Creek movement in Dubai. The movement of ferryboats (*Abra*) in the Creek is always increasing as a result of the increased travel demand and the personal mobility between the two sides of Dubai. The total annually trips by *Abra* in 1992 reached 835120 trips. In 1990 the average trips carried out by *Abra* was only 2407 trips daily.

### 3.3 Emissions

The increasing of ships traffic using the diesel motors, created problem of air pollution which affected the residential buildings which are located along the Creek's CBD. But geographically the highest movement is located in the CBD, and the *Abra* operated by diesel motor, which may be cause in the increase in the air pollution in these areas. This problem as mentioned before is not very clean at this time because of the lack of information, but it will get even worse as due to the increase the traffic movement in the Creek. The policies which concern the environment in Dubai has not been given more attention in this issue.

### 4. Conclusion

There are a lot of world cities now working to become more "Environmental Cities" in terms of the best practices in the environment which the cover the air, sea and land. This paper is an attempt to point out some of the geographical factors and aspects which contribute to the environmental problems in the Creek, and to see the significance of the issue which concern the urban transport system



and the environment related to the marine transport. Dubai Creek in its length and width is not in line with the increase of ships traffic and the movement of ferryboats which operate all day and transport people to the order of around 17 million passengers in the year 1992. Then, it can be concluded that the nature of the environmental problems which face Dubai Creek are related to the increase in the commercial activity of Dubai city as a trade centre in the UAE and Gulf states, and that is related to the planning policy which has created some of the problems on the Creek banks and its use, as mentioned before, for industrial areas (e.g. the Dubai Jadaf), and that it should have taken into account the conservation aspects of the Creek, when it is decided to establish the land-use plan which will regulate the activities inside the Creek.

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