

## NTAWOGBA CREEK AS A MEANS OF SUSTAINABLE INTRA-CITY WATER TRANSPORT WITHIN PORT HARCOURT METROPOLIS

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### ABSTRACT

Water transportation is the intentional movement of persons, goods and services by water over distances, is the cheapest and the oldest mode of transport. It operates on a natural track and hence does not require huge capital investment in the construction and maintenance of its track except in case of canals. The operational cost of water transport is relatively cheap. It has an appreciable large carrying capacity and is most suitable for carrying bulky goods over long distances. Investigation revealed that inland water transport is more popular in the southern deltaic areas of Nigeria where extensive networks of navigable waterways exist. This mode of transport was found to impact positively on the nations' economy as it reduces haulage cost, expands business opportunities, creates jobs and boasts the revenue earned by all the stakeholders in the inland water transport sector. The major infrastructural challenges be devilling inland water transport in the study area were identified and possible solutions proffered. The way forward is for the government to review its investment strategies in the sector and for water transport operators to priorities safety, efficiency and flexibility in its operation.

**Key words:** *Infrastructural Constraints, Inland Water Transport and Sustainability.*

### INTRODUCTION

Inland waterways are made up of navigable rivers, lakes, coastal creeks, lagoons and canals (Aderemo and Mogaji, 2010). The movement of goods and services along inland waterways is one of the earliest means of transporting goods and services from point to point (Fellinda, 2006) This is largely due to the fact that inland water transport offers the most economical, energy efficient and environmental friendly means of transporting all

types of cargo from place to place (Ojile, 2006). It also offers safer and cheaper rates in areas where water exist naturally. This facilitates commerce, promotes wealth creation, poverty alleviation, and creates job opportunities for youths within such regions. The ancillary sector of boat building industry also generates employment through active engagement of the youths in welding and fabrication process (Gray,2004) Inland waterways are historically recognized as vital arteries for communication and transport especially for the rural people (Rangaraj and Raghuram, 2007).

Sadly, there has been a long history of neglect by both the government and private sector. This indifference towards developing inland water transport facilities prior to the 1980s, stemmed largely from policy inconsistency, limited private sector participation, and conflicts between and among agencies involved in its management, left the inland waterways as a de-prioritized and neglected sector. Until today, rivers in urban centers and rural areas of developing countries constitute of small, non-mechanized country boats often used for transport, trading and livelihoods. One often refers to the populations along waterways as half-amphibious for the reason that a water body is centric to their way of life and to the economy of their household. Inland water transport remained localized over many decades and did not soar to full potential however, both the Federal and rivers state government has, taken a number of bold initiatives, including infrastructure improvement, channels dredging, desilting, maintenance and installation of safety facilities to turn round the sector. This paper reports tends to x-ray the possibilities of using Ntawogba creek as an inland water transport route within Port Harcourt metropolis constraints and contributions to nation's economy, current navigable waterways and goods Water Navigation, which if supported by appropriate policies can successfully compete in efficiency and cost with surface freight transportation sector.

## **DIFFERENT TYPES OF WATER TRANSPORT**

Water transportation is the intentional movement by water over distances.

(i) Inland water transport

## (ii) Ocean-transport

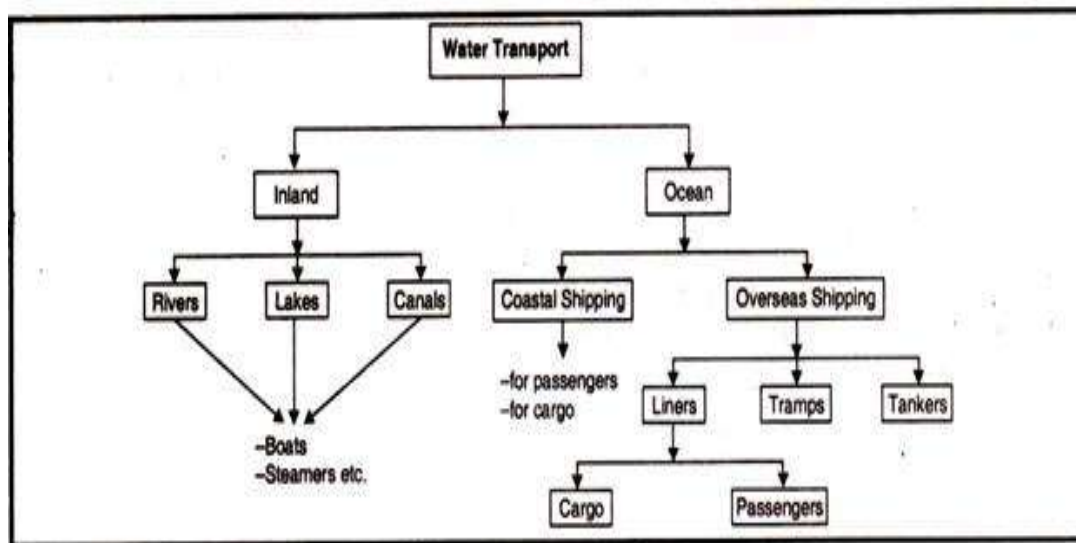


Figure 1.0: Classification Of Water Transport

Source: Emaze.com, 2018

**Inland Water Transport:**

As shown in the chart, inland water transport consists of transport by rivers, canals and lakes.

*Rivers:*

Rivers are a natural flowing watercourse which can be used as a medium for water transport. They are suitable for small boats as well as big barges. River transport played a vital role prior to the development of modern means of land transport. Their importance has gradually waned on account of more reliable and cheaper transport services offered by the railways.

*Canals:*

They are man-made waterways made for the purpose of irrigation or navigation or both. Canal transport is often prohibitive because of the huge amount of capital investment required for the construction and maintenance of its track, the cost of providing water for the canals is also a very cumbersome as a resultant effect the cost of canal transport is therefore, higher than that of river transport.

*Lakes:*

Lakes could either be natural like rivers or artificial like canals.

## **ADVANTAGES OF INLAND WATER TRANSPORT**

### *1. Low Capital and maintenance cost:*

Rivers are a natural watercourse and as such does not require large capital for construction and maintenance, irrigation on its own could also enhance a mutual benefit with the agro sector of the state for the purposes of dry season farming, due to its affordability it is the most cost effective means of transportation

### *2. Larger haulage Capacity:*

It can carry much larger volume of luggage, such as coal, timber, agro and fishery products etc.

### *3. potentials for an intermodal transport design:*

The integration of infrastructure and technical facilities to accommodate linked roads and permanent berthing area, these includes handling gears like shore cranes and gantries (for containers), mobile cranes, forklifts, trucks, storage sheds and warehouses

### *4. Flexible Service:*

It provides much more flexible service than railways and can be adjusted to individual requirements.

### *5. Safety:*

The risks of accidents and breakdowns, in this form of transport, are minimum as compared to any other form of transport.

## **DISADVANTAGES OF INLAND WATER TRANSPORT**

### *1. Slow:*

Speed of Inland water transport is comparatively slow and as this mode of transport is unsuitable where time is an important factor.

### *2. Restricted area of Operations due to geophysical features:*

It can be used only in a limited area which is served by deep canals and rivers.

### *3. Seasonal Character:*

Rivers and canals cannot be operated for transportation throughout the year as water may freeze during winter or water level may go very much down during summer.

### *4. Unreliable:*

The inland water transport by rivers is unreliable. Sometimes the river changes its course which causes dislocation in the normal route of the trade.

*5. Unsuitable for Small Business:*

Inland water transport by rivers and canals is not suitable for small traders, as it takes normally a longer time to carry goods from one place to another through this form of transport.

**CASE STUDY**

**Khlong Saen Saep boat service**

The Khlong Saen Saep boat service is a water bus operating on the Saen Saep Canal in Bangkok through the city's traffic-congested commercial districts. Khlong Saen Saep boat service has been in operation since 1 October 1990. The service has a checkered reputation due to the polluted water in the canal and the haphazard nature in which the service is operated.

The 18 kilometre route is served by 100 boats of 40-50 seats. It operates from 05:30 to 20:30 daily on weekdays (to 19:00 on weekends). Prices are 8-20 baht, depending on distance traveled. The service carries about 60,000 passengers per day. It is run by a company called Family Transport.

The service runs between Pom Prap Sattru Phai and Bang Kapi Districts in Bangkok. The Pratu Nam pier in the Pathum Wan-Ratchathewi Districts is a transfer station where passengers change between the western line, which ends at Golden Mount, and the eastern line, which ends at the National Institute of Development Administration (NIDA). Boats pass the Watthana and Huai Khwang Districts, running parallel to Phetburi Road

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Plate 1.0: showing jetty (pier)

Source: flickr.com, 2018



www.alamy.com - E5ENKX

Plate1.2: showing Boat route

Source: alamy.com,2018



Plate1.3: Showing Trasport Interchange

Source: 123RF.com,2018



### **Plate 1.4: Showing Typical Bridge Crossing**

Source: 123RF.com,2018

### **3.0 STUDY AREA**



### **Plate 1.5: Drone Image Of Ntawogba Creek**

Source: Yahoo.com,2018



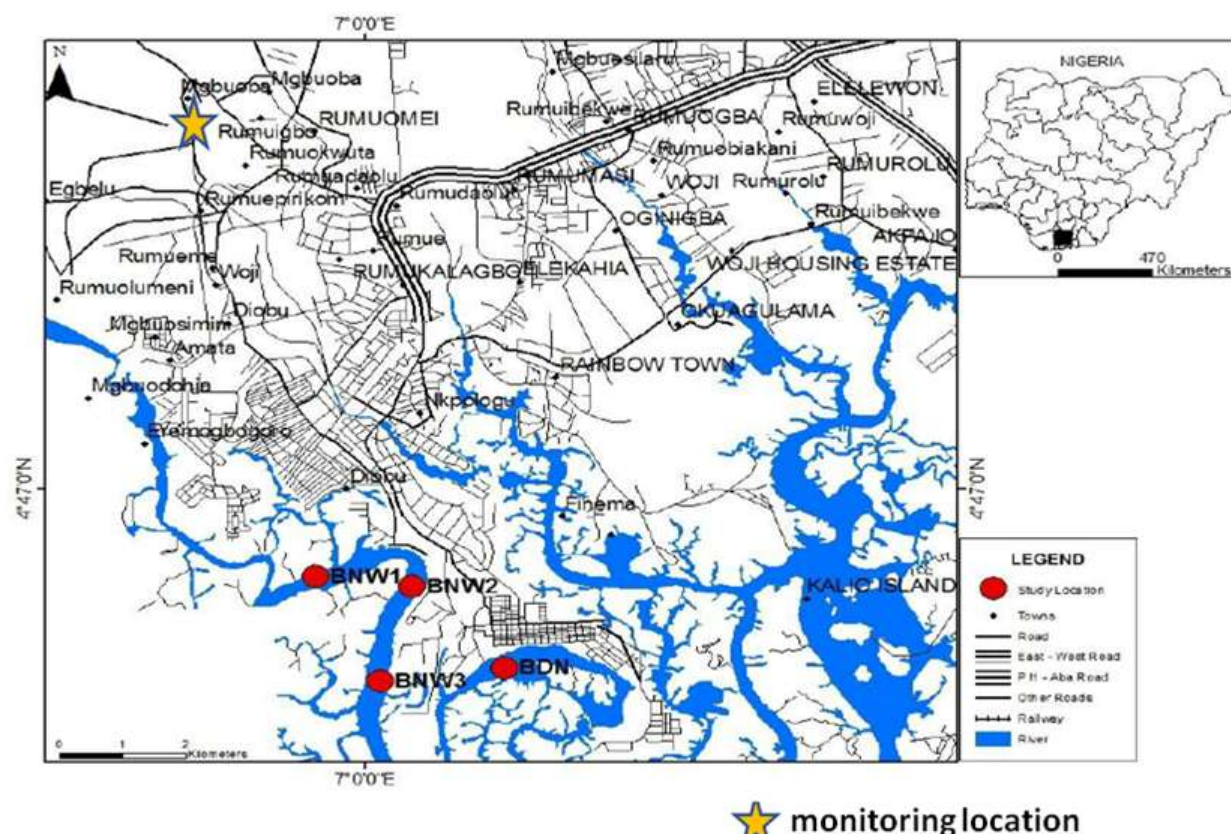


Figure 1.1: Map Of port Harcourt Showing Ntawogba Creek  
 Source: pubs.science.com, 2018

Ntawoba creek traverses Port Harcourt, Nigeria. It is about 7.6km in length and has a visible route from Diobu creek in eastern-by-pass, through areas like old and new GRAs, D/Line, all the way to Market junction, mile 4. It is tidal in flow and is brackish in colour. Inhabitants discharge wastes of all kinds into the creek and the creek is heavily polluted. Automobile mechanics and other artisans use the creek as receptor of wastes. The creek is tidal and thus the monitoring of contaminant profile becomes complex. The enforcement of environmental laws on waste discharge in the state is also poor.

However, recent persistent campaigns by the Rivers State Environmental Sanitation Authority to keep waste off the drains, dumping of refuse by people living near the Ntawoba creek has helped reduce such practices especially along its more organised routes. Investigations carried out by the researcher indicate that at the Sani Abacha road axis of GRA Phase 3, the creek was free of debris which hitherto was common. At market junction axis

around Eligbam road in mile 4, Rumueme, the Ntawoba creek was also free from the common empty plastic water bottles that characterized that axis of the creek. Okija street, which used to witness unprecedented flooding during heavy rain fall no thanks to mechanics that do business, this was also free from huge waste that used to impede free flow of water. At the Aba road axis, near the Federal Road Safety Commission, (FRSC), the creek was far from much of the usual debris except at the opposite side where the water was not flowing smoothly. Oral interview conducted by the researcher on residents indicates that the desilting of the canal early in the year has opened up Ntawoba creek.



**Plate 1.6: Showing Ntawogba Creek Along Mummy “B” Road**

Source: author, 2018



**Plate1.7: Showing Culvert Obstruction Of Ntawogba Creek Along Cherubim**

Source: author, 2018



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**Plate 1.8: Showing Culvert Obstruction Of Ntawogba Creek Along Cherubim**

Source: author, 2018



**Plate 1.9: Showing Ntawogba Creek Along Cherubim**

Source: author, 2018



**Plate1.9: Showing Floating Debris And Grasses On Ntawogba Creek Along Cherubim**

Source: author, 2018



**Plate2.0: Showing Grasses Growing On Of Ntawogba Creek Along Ikokwu**

Source: author, 2018



**Plate2.1: Showing Obstruction By Culvert On Ntawogba Creek**

Source: Author, 2018



**Plate 2.2: Showing Obstruction Of Ntawogba Creek Along Aba Road**

Source: author, 2018

#### 4.0 SUITABILITY OF NTAWOGBA CREEK AS A WATER TRANSPORT ROUTE IN PORT HARCOURT

The Ntawogba creek is suitable for inland water transportation within Port Harcourt Metropolis for the following reasons

1. It runs its route through most of the metropolis providing ample stoppages.
2. It is tidal so water volume is not a problem.
3. It has its path through a train route and also through major roads in the city, thus would provide the opportunity for a transport interchange project.

#### THE PROPOSAL

Before the Ntawogba creek channel can be successful for an inland water route, certain basin infrastructural and preparatory works must be carried out. These include

- ✓ Dredging of the creek
- ✓ Construction of tunnels and over-head bridges where its route passes through vehicular roads.
- ✓ Proper environmental enlightenment and works to ensure the water way is kept clean and debris free.
- ✓ Provision of a transport interchanges at best location for it within the metropolis.
- ✓ Provision of stops and jetties at best locations to serve passengers

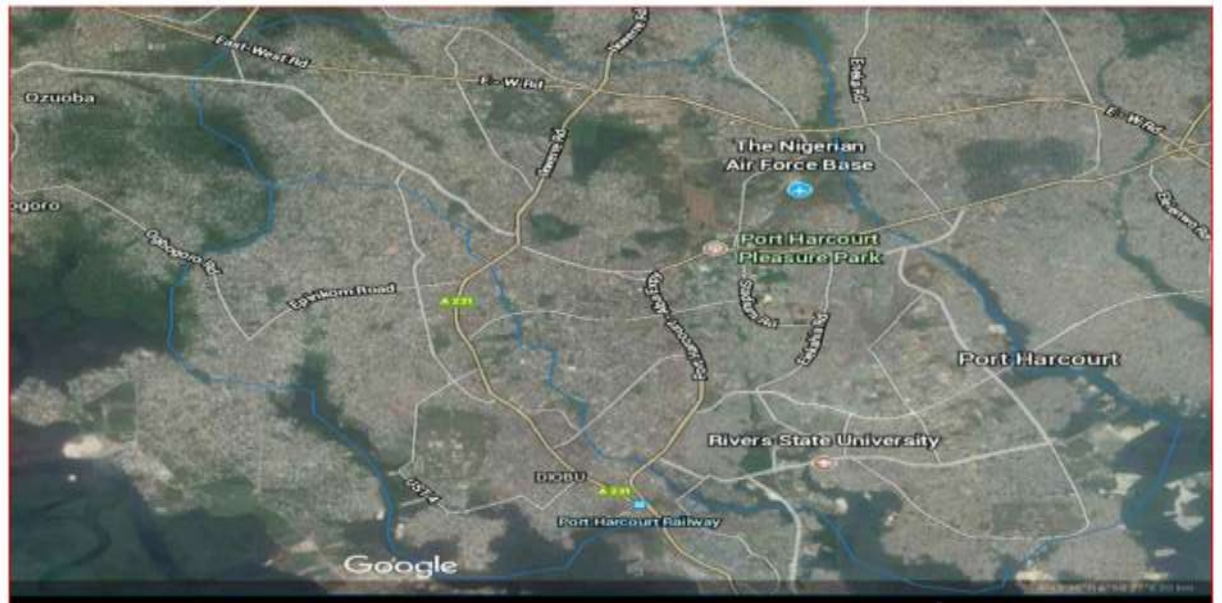


Plate2.3: Modified Satellite Image Showing The Proposed Route  
 source: author, 2018

## NTAWOGBA / NKPOGU, BOAT TRANSPORT ROUTE

### 5.JETTIES AND TERMINALS

There are four (4) proposed terminals, six(6) proposed jetties (boat-stops) and one (1) interchange station.

#### TERMINALS

1. Eastern-by-pass
2. Aba road (by Texaco filling station)
3. Aba road (by road safety office)
4. Ikwerre road (by market junction)

#### JETTIES / PIERS (boat-stops)

1. Odoni street, Amadi flats
2. Ammassomma street, old GRA
3. Chief Agbuji street, New GRA
4. Sani Abacha Road, New GRA
5. Tombia Street, New Gra
6. NIng
7. Nkpogu
8. Mummy 'B' Road
9. Rumuola Link Road
10. Aba Road By Port Harcourt Pleasure Park
11. Back Of Abc Park Elioizu Road
12. Rumuokoro Market

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13. Obiri Ikwerre
14. Ozuoba
15. Ogbogoro
16. Nkpor
17. Eagle Island
18. Njemanze

Proposed piers (jetty)

1. Anyama Street, (off Okija street) Diobu.

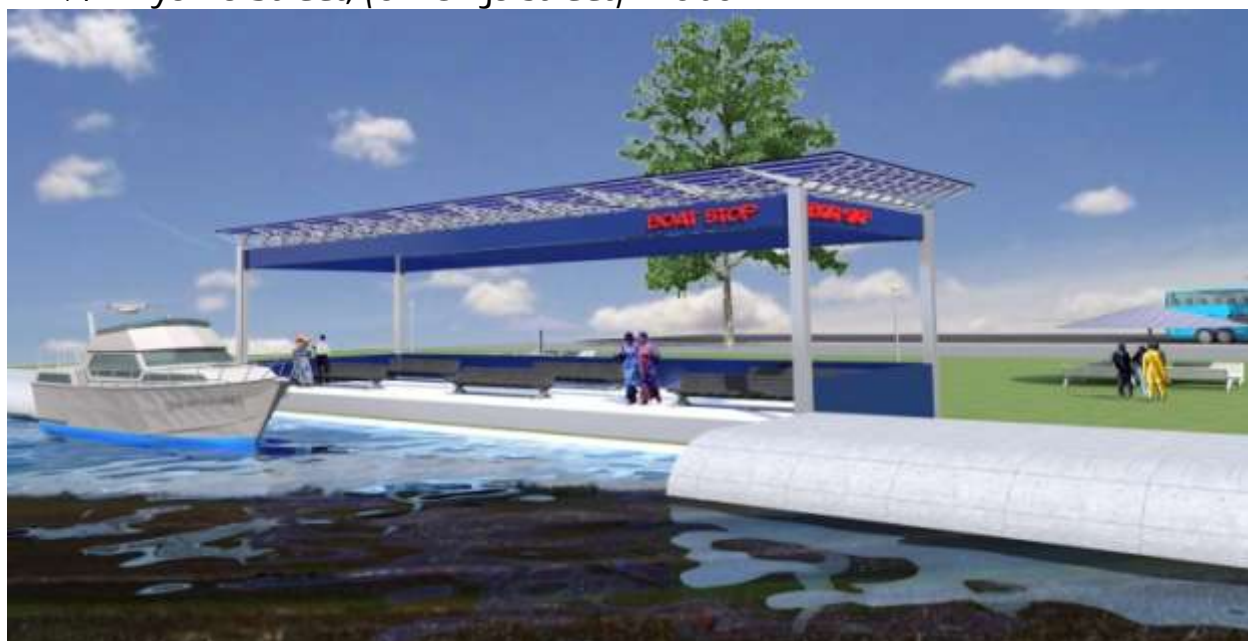


Plate2.4: Showing Proposed Jetty(Pier)

Source: author, 2018





**Plate2.5: Showing Rear View Proposed Interchange**  
Source: author, 2018



**Plate2.5: Showing Approach View Proposed Interchange**  
Source: author, 2018



**Plate2.5: Showing Proposed Road Crossings At Aba Road**  
Source: author, 2018



**Plate2.5: Showing Proposed Road Crossings At Ikokwu**  
Source: author, 2018

### **CONCLUSSION/RECOMMENDATION**

The importance of inland water transport in Port Harcourt cannot be over emphasised, the state government should create policies that should be inclusive of private sector participation that will

develop and harness the potentials of inland water transport as it will provide competitive services with existing intermodal transport systems in order to bolster its economy and stimulate job creation .

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