GOVERNMENT STRATEGIES FOR RESHAPING URBAN TRANSPORT NETWORKS AND MOBILITY IN THE DEVELOPING WORLD: THE CASE OF PORT HARCOURT, NIGERIA

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Government strategies for reshaping urban transport networks and mobility in the developing world: the case of Port Harcourt, Nigeria

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Abstract
In recent times, successive governments in Rivers State, Nigeria has made attempts at increasing and enhancing the mobility of human and vehicular traffic within and around the metropolitan and one-city capital of the state. Transport and mobility projects such as the construction of the first ultra modern monorail project in Nigeria, the setting up of the Rivers State Traffic Management Authority (TIMA – RIV) and the construction of more access roads in the urban suburbs have been vigorously pursued. This paper highlights the strength of these policies/strategies of the state government and their benefit to the people of the state now and in the nearest future. The paper also discusses these policy thrust in relation to the public-private initiative (PPI) in the construction of the first monorail project in Nigeria and the development of the Greater Port Harcourt City to reduce traffic congestion and increase intra city mobility. The paper holds that the achievement of an enhanced urban mobility of the city of Port Harcourt is not only based on the achievement of these policies but also on the institutional frameworks for the observance of traffic regulations and urban development policies by the citizenry. It concludes that the state government should as matters of necessity continue to develop adequate transport infrastructure that will link transport and town planning practices together.

Keywords: Government, Strategies, Transport, Urban mobility, Port Harcourt

0. Reshaping urban transport networks and mobility

1. Introduction
The beauty of metropolitan and urban cities all over the world lies in the availability of social infrastructures which makes life meaningful to its dwellers. Social infrastructures like good network of roads and sound traffic management system not only make urban dwellers live life with ease within the city and its environs but also provide opportunities for the mobility of people and goods and over a
long term influences patterns of growth and the level of economic activity (Meyer and Miller, 2001, p1). There is then no gain saying that urban mobility in its simplest or complex sense is generally concerned with creating and maintaining transport systems which provide mobility, access and other benefits such as the productivity of other sectors of the economy (Ugoja and Ukpere 2011, p3139), human sustainability and community development but also the provision of time and place utilities for all factors of production within the economy (Ikechi, Abadom, Wagbara and Tamuno, 2010, p 50). An enhanced urban mobility system is dependent on an efficient and effective urban transport systems and networks which can significantly contribute to achieving global, national and regional objectives through a wide range of policy domains (Jewell, 2012) and (Adenyi, 2000). The success of policies and policy objectives on urban mobility and transport systems impacts on socio-economic objectives and also serve as an important facilitator for growth, employment and sustainable development.

The achievement of the foregoing in the view of Coca-Stefianiak, Radominski and Ryczek (2009), Robertson (2007) and Oyadiran and Aregbesola (2008) involves the creation, maintenance and periodic review of the urban landscapes, transport architecture and geography through an interpretation of built form which creates efficient networking and allows manufacturers or producers to obtain raw materials or supply national or international markets at minimum cost with minimum delay, and allows access to the widest possible number of suppliers or workers. Appropriate strategies that vary with national and regional requirements which envisions a comprehensive and complete plan and provides decision makers with useful information for understanding problems facing urban cities, their mobility and improvement be made and enshrined in Development Action Plans (DAPs) by governments. These DAPs identifies alternative actions, selecting the best possible alternatives and helps in developing successful implementation strategies.

1.1 Methodology of the study

This study was undertaken to determine, evaluate and proffer solutions to the incessant mobility questions and problems in urban Port Harcourt, Nigeria and the extent of policy sustainability, sustainability of the city and that of its dwellers based on the various laws enacted, executive directives/guidelines and budgetary allocations/appropriations relative to urban planning, transportation and networking of roads within and around the city of Port Harcourt and its suburbs. To achieve the directional focus of this study, a combination of qualitative and theoretical research methods were adopted. Government data and policy documents were employed and supported with proven literature of scholars and institutions which forms the duangulation direction of the study (Cohen, Manion and Morrison 2002) and (Asika, 2009).

2. Urban mobility and systems

The issue of urban mobility has always taken centre stage in national and international forums all over the world. So also are attempts at increasing and enhancing the mobility of human and vehicular traffic within and around metropolitan cities. The issue of urban mobility has become paramount because world cities are increasingly under pressure of population growth occasioned by rural – urban migration leading to chronic problems of congestion, travel delays, fuel wastage and commuter stress (Shrank, Lomax and Eisele, 2011). Urban mobility has therefore been described as the revolutionary ways of moving people; and also a social cause that brings neigbourhoods and communities together, reminding us that we are part of a global village. It brings to us the concepts and designs which address the world growing urban sprawls, daily communication forms of transportation and environmental consciousness. Urban mobility examines the ways in which innovators, town planners
and administrators develops new technologies and policy thrust to not only move people but also bring them closer together (Lerner, 2011)

2.1. The Evolution of Urban Areas and Its Dynamics

The concept of interaction and interrelation present in the definition of systems applies to urban mobility. A common argument around the systemic approach is that every system is part of another system. In urban dynamics, and especially in urban mobility, this assertion holds true because urban areas and their suburbs are part of a state, regional or federal system. Urban mobility and transport networks as referred by (Simon, 1999, pp. 195) like all other referred sub-systems, acts as one building block of urban life and contributes to its configuration through interaction with land-use, environment and other subsystems.

Macario (2011) has asserted that for urban mobility to be possible, the following main properties of an urban mobility system have to be ensured:

- Robustness, meaning long term stability and sustainability;
- Adaptability, meaning the capacity to adapt services to evolutionary demands or new technological opportunities, often resulting from exogenous changes, which are typically initiated within the sub-systems where urban mobility requirements are generated, therefore not controlled by the mobility system;
- Efficiency, meaning high productivity, in the capacity to transform basic resources into service outcomes, and these into consumption units, providing the best results at the lowest possible cost;
- Diversity, capacity to respond to the different demands of different market segments in a dynamic match between supply and demand for urban mobility.

Rodriques (2009) has also argued that Urban Mobility and its Evolution Urban transportation is organized in three broad categories of collective, individual and freight transportation. While people movements are the outcomes of numerous individual decisions based on different rationales, freight movements are decided in tandem between the cargo owners (procurer and customer) and the transportation service providers. In several instances, passengers and freight movements are complementary to one another, but sometimes they may be competing for passengers, the usage of available land and transport infrastructures. Thus:

- Collective Transportation (public transit) provides publicly accessible mobility over specific parts of a city. Its efficiency is based upon transporting large numbers of people and achieving economies of scale. It includes modes such as tramways, buses, trains, subways and ferryboats.
- Individual Transportation: Includes any mode where mobility is the outcomes of a personal choice and means such as the automobile, walking, cycling and the motorcycle. The majority of people walk to satisfy their basic mobility, but this number varies according to the city considered
- Freight Transportation: As cities are dominant centers of production and consumption, urban activities are accompanied by large movements of freight. These movements are mostly
characterized by delivery trucks moving between industries, distribution centers, warehouses and retail activities.

2.2 Strategic Imperatives for Urban Mobility and Transport Networks

To meet the urban mobility and transport challenge, cities and its administrators need to implement one of the following strategies dependent on their location and maturity (Lerner, 2009).

- Network the System: for high performing cities, the first step towards achieving mobility through an enhanced transportation system is to fully integrate the travel value chain, increasing convenience by aggressively extending public transport, implementing advanced traffic management systems, good networks of roads and further reducing individual transport through greater taxation and road tolls.

- Rethink the system: cities in countries with a high proportion of motorized individual transport need to fundamentally redesign their mobility system so that they can become more consumer and sustainability oriented.

- Establish a sustainable core: sustainable development has become a norm and pattern of economic growth and development in which resource use aims to meet human needs while preserving the environment (Wikipedia, 2012). For cities in emerging countries, the aim must be to establish a sustainable mobility core that can satisfy short-term demand. With access to new and emerging transport infrastructure and technologies, cities have opportunity to become the best and breeding ground for tomorrow urban mobility systems.

3. Managing Transport and Urban transport networks

The beauty of urban cities and their suburbs lies in well articulated and manageable transport systems and networks. It also holds true that metropolitan area’s economic and social health depends to a large extent on the performance of its transportation system (Pollyn and Abadom, 2012) and (Meyer and Miller, 2001). It is of paramount importance to note that transportation not only provide opportunities for the mobility of people and goods, but over the long-term it influences patterns of growth and the level of economic activity through the accessibility it provide to the land.

In cognizance of this, countries of the world, world agencies like the United Nations, institutions, authors and professional organizations (WCTRS and CODATU) has made available policy documents, heed symposia and carried out researches on ways and means of increasing human and vehicular accessibility and mobility through a well planned transportation system and network. In Nigeria, the Federal Government right from independence has made policies and enactments to increase/enhance urban transport and mobility. These policies and enactment include:

- The 1965 statement of policy on transport
- 1993 National Transport Policy
- 2002 Master plan for Integrated Transport Infrastructure (MITI)
- 2003 Draft Transport Policy
- 2010 Draft National Transport Policy; and
- The Public Private Partnership Draft Policy on transport.

It is worthy of note that the central themes of these policies/draft laws and their enactment as succinctly captured by Sumaila (2008), Onokala (2008) and Ogunbodede (2004) is geared forwards overcoming three distinct urban distances: person – person; person – activities; and activities – activities. Therefore, an effective management of government transport policies brings life to bear in the achievement of such other policies as the National 20:20:20 Economic Vision, the Transformation Blueprint, NEEDS, Public Private Partnership (PPP) and International Commitments such as the Millennium Development Goals (MDGs) which all require a functional, reliable and effective transport system to, among other things, connect people, places, services, opportunities, etc. The National Transport Policies therefore provide the guidelines for planning, development, co-ordination, management, supervision and regulation of the transport sector.

4. The Evolution of Nigerian Transport System and Networks

The evolution of modern transport system and networks in Nigeria can be categorized into two distinct phases. These are:

(a) The colonial period marked the origin of modern transport system. The networks of rail, water and road developed then were geared essentially to meet the exportation of cash crops, such as groundnuts, cocoa, cotton and palm products and to the importation of cheap, mass produced consumption goods. These early transport systems were planned in the most economic way possible, as typified in sub-standard road and rail alignments and a sub base, which later proved inadequate to accommodate heavy vehicles.

(b) The post colonial period/attainment of independence. With a re-orientation of goods, transport because one of the instruments of unification of the country and an important tool for social and economic development. The development of petroleum resources from the 1950’s had significant impact on the nation’s social and economic growth, putting increasing demands on the transport system.

Goods and passenger movements in Nigeria are performed mainly by road, with the railway, airways and inland waterways also playing significant roles.

5. Challenges and Opportunities in Urban Transport Planning

The Nigerian transport system faces great challenges and also offers several opportunities. The predisposing factors include:

(a) The size of the country and its vast natural resources
(b) The growth of the Nigeria Economy and strategic Location in Africa.
(c) State government policies on urban transport management system
(d) The involvement of private individuals in the transportation chain
Public Private Partnership (PPP) in transport project such as the 2012 Lekki Toll management agreement in Lagos and the PPP construction of first Monorail Project in Port Harcourt.

6. **Organization of Urban Transport Networks**

Urban transportation networks in Nigeria are organized along three lines of ownership, construction and maintenance. Thus there are federal roads (referred to as Trunk A road), states governments roads (Trunk B roads) and local governments / council road (Trunk C and community streets). Oni (2003) reflecting on the Road Vision 2000 steering committee report revealed that the distribution of National Road Networks is as follows:

<table>
<thead>
<tr>
<th>Type of Pavement</th>
<th>Federal</th>
<th>State</th>
<th>LGA’s</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paved Trunk Roads</td>
<td>26,500</td>
<td>10,400</td>
<td>-</td>
<td>36,900</td>
</tr>
<tr>
<td>Unpaved Trunk Road</td>
<td>5,600</td>
<td>20,100</td>
<td>-</td>
<td>25,700</td>
</tr>
<tr>
<td>Urban Roads</td>
<td>-</td>
<td>-</td>
<td>21,900</td>
<td>21,900</td>
</tr>
<tr>
<td>Main Rural Roads</td>
<td>-</td>
<td>-</td>
<td>72,800</td>
<td>72,800</td>
</tr>
<tr>
<td>Village Access Road</td>
<td>-</td>
<td>-</td>
<td>35,900</td>
<td>35,900</td>
</tr>
<tr>
<td>Total (Kms)</td>
<td>32,100</td>
<td>30,500</td>
<td>130,600</td>
<td>193,200</td>
</tr>
<tr>
<td>Percentage</td>
<td>17</td>
<td>16</td>
<td>67</td>
<td>100</td>
</tr>
</tbody>
</table>


One major observation with road networks transport in Nigeria is that 83% of roads are maintained by state governments (that is the 16% and the 67%). This is because local governments are seen as an extension or appendage of the state governments. All state and local government roads and networks have one way or the other become the responsibility of the states that make policies for them in terms of planning and mobility. This study will therefore take a critical look at the effort of the Rivers State government in enhancing urban mobility through sound transportation, urban planning and sustainable development policies.

7. **Port Harcourt**

7.1 **History**

Port Harcourt is the capital of Rivers State and a port town in south-south, Nigeria. It lies along the Bonny River (an eastern distributary of the Niger), 41 miles (66 km) upstream from the Gulf of Guinea. Founded in 1912 in an area traditionally inhabited by the Ijaws and the Ikwerres of the lower Niger, it was incorporated into the Nigeria colonial administration in 1913. It is as a port town named after Lewis Vernon Harcourt - the colonial secretary. Port Harcourt as a state capital also serves as a
local government system until 1991 when it undergone administrative changes and shared into two local governments (Port Harcourt City Council and Obio-Akpor). With massive urbanization, the city has become a metropolitan unit with neighbouring towns like Eleme, Oyigbo and Okrika now forming part of the city. By the 2006 Nigeria population census, urban Port Harcourt has 541,115 people while the Metrocity has 1,382,592 people. This is projected to grow 3.05% annually. It has long been an important merchant port and is today the centre of Nigeria’s oil industry.

Port Harcourt was a site for World War I military operations against German Kamerun; it was once part of the Republic of Biafra which seceded from Nigeria and was dissolved in 1970. Commercial quantities of crude oil were discovered in Oloibiri in 1956 and Port Harcourt's economy turned to petroleum when the first shipment of Nigerian crude oil was exported through the city in 1958. Through the benefits of the Nigerian petroleum industry Port Harcourt was further developed with aspects of modernization such as overpasses and city blocks. Oil firms such as Royal-Dutch Shell and Chevron have offices in Port Harcourt. Port Harcourt's primary airport is the Port Harcourt International Airport located in the periphery of the city; Nigerian Air Force base is the location of the only other airport in the city used by commercial airlines for domestic flights. A 1973 social survey found that migrants made up 72 percent of Port Harcourt's population. From an area of 15.54 km² in 1914, Port Harcourt grew uncontrolled to an area of 360 km² in the 1980s.

Top: A street scene, Middle: Port Harcourt International Airport and The City Center; Bottom: Government House

Source: CIA World Factbook & www.en.wikipedia/portharcourt

### 7.2 Geography and climate

The main city of Port Harcourt is the Port Harcourt city in the Port Harcourt Local Government Area, consisting of the former European quarters now called old Government reservation area (GRA) and new layout areas. The Port Harcourt Urban Area (Port Harcourt metropolis) is made up of the city itself and parts of Obio/Akpor Local Government Area. Port Harcourt City, which the capital of Rivers State, is highly congested as it is the only major city of the state. A law has recently passed by the state house and governor Amaechi's administration to spread development to the surrounding communities as part of the effort to decongest the Port Harcourt metropolis and is known as the
Greater Port Harcourt urban area. Port Harcourt features a tropical monsoon climate with lengthy and heavy rainy seasons and very short dry seasons. Only the months of December and January truly qualifies as dry season months in the city. The harmattan, which climatically influences many cities in West Africa, is less pronounced in Port Harcourt. Port Harcourt's heaviest precipitation occurs during September with an average of 370 mm of rain. December on average is the driest month of the year; with an average rainfall of 20 mm. Temperatures throughout the year in the city is relatively constant, showing little variation throughout the course of the year. Average temperatures are typically between 25°C-28°C in the city.

The Eleme Junction Flyover and link Roads.

Source: GPCDA 2011

7.3 Economy and infrastructure

The city is a major industrial centre as it has a large number of multinational firms as well as other industrial concerns, particularly business related to the petroleum industry. It is the chief oil-refining city in Nigeria. Rivers State is one of the wealthiest states in Nigeria in terms of gross domestic product and foreign exchange revenue from the oil industry, crude oil being its main export earner. Some of Port Harcourt's more popular and well-known residential areas are Port Harcourt Township (or just 'Town'), GRA (Government Reserved Area) phases 1—5, Diobu, Amadi Flats, and Borokiri. The main industrial area is located in Trans Amadi. The Podium Block of Rivers State Secretariat is an icon of the city. An eighteen storey building, it is the tallest building in the South/South and South/East Geopolitical zones combined. The city also has two seaports (FOT Onne, Port Harcourt Quay), two stadiums (Sharks Stadium in the city center) and Liberation Stadium at Elekahia and two refineries. The city plays host to such Educational establishments as the University of Port Harcourt, Rivers State University of Science and Technology (Nigeria’s first), Ignatius Ajuru (Rivers State) University of Education, College of Health Sciences and Technology and the College of Arts & Science.

8. Government strategies for urban transport development and mobility in Port Harcourt, Nigeria
8.1 Inherent Mobility and Transport Networks Problems in Port Harcourt

We have already pointed out that 83% of road in urban cities in Nigeria is constructed, controlled and managed by state governments in Nigeria. This is true of Rivers State. Port Harcourt, the Rivers State capital with seven adjoining local government areas as its suburbs has witnessed an overstretched use of facilities and transport infrastructures and tends to inhibit the mobility of people and vehicular movement. One major feature of Port Harcourt which has posed mobility problems is its one-city nature. It is the only urban city with well developed social infrastructure and transport networks. With an overstretched urban mainland as a result of increasing population projected at an annual growth rate of 3.05%, the urban dwellers has found solace in the suburbs which hitherto were neglected and seen as ‘bush areas’. These bush areas has become a safe haven with massive land speculation and developments. These developmental activities in the suburbs has totally linked Port Harcourt to the surrounding local governments which comes with such problems as poor road networking (arising from economic maximization by the locals) and poor urban planning practices. There are also problems of poor building codes, zoning regulations and road networking. Land is cleared and ‘lean to’ buildings constructed sometimes overnight. This adds to flooding and sanitation problems. Parts of the city floods during heavy monsoon-type rains that fall for half the year and causes mobility problem leading commuter delay time and loss of man-hours.

The ever busy and chaotic Rumuokoro Junction (A federal Road often managed by the Rivers State Government)

![Image of busy and chaotic road junction](source: Author’s files)

8.2 Government Strategies to overcoming Mobility and Transport Networks Problems in Port Harcourt

Successive governments in Rivers State, Nigeria have made attempts at increasing and enhancing human mobility, transport networks and economic activities within and around the metropolitan Port Harcourt. Such transport /mobility policies and projects include the Greater Port Harcourt City
Development, construction of the first ultra modern monorail project in Nigeria and the setting up of the Rivers State Traffic Management Agency (TIMA –RIV).

8.2.1 Greater Port Harcourt City Development (GPHCDA)

In early 2009 the State Government under the leadership of Governor Chibuike Amaechi announced plans for the creation of a new city to be called the Greater Port-Harcourt City. The Greater Port Harcourt City Development initiative is established by The Greater Port Harcourt City Development Authority Law 2009 with a mandate to facilitate the implementation of the Greater Port Harcourt Master Plan and build a New City out of the old city and its adjoining eight local governments of Ogu Bolo, Eleme, Ikwere, Etche, Obio Akpor,Okrika, Eleme local government areas. The Mission of the Authority is to transform the Greater Port Harcourt Area into a world class city, internationally recognized for excellence, and the preferred destination for investors and tourist. The objective is to build a well planned city, through the implementation and enforcement of policies that will ensure the provision of first-rate infrastructure and delivery of quality services to enhance the mobility of people and also increase the standard of living and well being of the people.

The Greater Port Harcourt covers an area of approximately 1,900 square kilometres (40,000 Hectares of land) with a projected population of about two Million people. The New City will be an extension of the old Port Harcourt City. The intent is to allow for urban growth through strategic planning, and de-densification of the old city, whilst gradually integrating both cities as one single unit. It is expected to have 24 hours electricity supply, network of reticulated water supply, bulk sewage system, network of good roads/streets, public transportation system, storm water management, waste disposal systems, surveillance systems, well laid out residential, commercial and industrial areas, parks, garden etc.

1: The new city Master Plan
2: Completed Sports Complex

3: Planned Prototype Business District
8.2.2 Construction of Nigeria’s First Monorail

To ease urban mobility problems in the old Port Harcourt Township and its adjoining districts, the state government has commenced the construction of the Port Harcourt monorail under a public-private partnership initiative. As Amaechi (2012) noted, the monorail project with a cost of N150 Billion naira (or $937.5 million) covers a total of 19.1km with a daily passenger’s haulage of 63,000. To tap the benefit from the public-private law of the state, the monorail project is undertaken in partnership with STI International under an 80:20 funding scheme (STI 80% and the government 20%).
While the benefit of the project is enormous, the limiting factors about it is the project completion period which may take longer than expected, and the lack of public trust in the ability of the present governor to complete the project since Nigeria is known to lack the spirit of continuity in public policy implementation.

### 8.2.3 Expansion and construction of road networks

One other strategy for the improvement of mobility in Port Harcourt has been the construction of new road networks, expansion of existing ones to standard gauges, linking of the suburbs to the metro city through new road networks and bridges. New flyovers and internal road bridges are also vigorously pursued. As at December 2011, 1000km of road networks under construction is at different stages of completion. Among these are 4 flyovers/interchange and 2 diversionary 6-lane road networks.
8.2.4 The Rivers State Transport (Traffic) Management Authority (TIMA-RIV)

This agency was created by Sections 37-39 of The Rivers State Road Traffic Law; No. 6 of 2009. The functions of the Authority include control of traffic and enforce state laws relating to the safe use of vehicles on the road, deter road users from the commission of road traffic offences and apprehend road traffic offenders, conduct highly visible day and night traffic patrols to enforce traffic rules and regulations and clear highway of obstruction, enforce the use of bus stops and bus terminals. The law is the state instrument for increasing urban mobility in Port Harcourt. It is also a complementary tool to the Federal government’s Road Safety Commission activities. Summary of the law shows that:

- Part I (Ss.1 – 12) provides for the Establishment, duties and organization of the Motor Vehicle Inspection unit in the Ministry of Transport.

- Part II (Ss.13 – 23) makes provision for control of traffic. S.13 (1) places this responsibility on the Commissioner of Transport or the Local Government Council.

- Part III (Ss.24 – 36) legislates against offences and the punishment for the offenders.

- Part IV (Ss.37 – 39) provides for the establishment, functions and powers of the Rivers State Road Traffic Management Authority (The Authority).

- Part V (40 – 46) deals with the establishment, composition and functions of a Board for the Authority.

- Part VI (46 – 56) provides for the staff of the Authority and the Controller General of the Authority who is appointed by the Governor and is the Chief Executive Officer.

- Parts VII – IX (Ss.57 – 78) provides for the finances of the authority, offences and penalties.
and acquisition of land and supplemental matters respectively.

- Part X (Ss.79 – 80) makes general provision. S. 79 of the Law repeals the Road Traffic Law No. 80 of 2003, Road Safety Commission Law No. 5 of 2003 and the Commercial Motorcycle Operators Law No. 5 of 2001. S. 80

9. Concluding Remarks and the way forward

From the foregoing discussions, it is apparent that human mobility is a major societal challenge, therefore human ingenuity and innovation coupled with a well articulated politically backed vision can bring solutions for the benefit of all. The paper holds that the achievement of an enhanced urban mobility in the city of Port Harcourt is based not only on the achievement of policies but also on effective implementation and continuity, institutional frameworks for the observance of traffic regulations and urban development policies by the citizenry. We conclude that the state government should as matters of necessity continue to develop adequate transport infrastructure that will link transport and town planning practices together. In this vain, the construction of the six modern luxurious bus terminals outside the city to ease mobility is welcomed.

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