

**Urban Public Transport Challenge in the LNG  
Era: A case study of the Port Moresby Urban  
Public Transport**

**By**

**Jack Assa**

**May, 2015**

# Table of Content

|   |     |
|---|-----|
| LIST OF FIGURES.....  | iii |
| LIST OF TABLES.....   | iii |
| LIST PHOTOGRAPHS.....   | iii |
| ACRONYMS.....   | iv  |
| ABSTRACT.....   | v   |
| <br>  |     |
| CHAPTER 1 – INTRODUCTION.....   | 1   |
| 1.1. Background.....  | 1   |
| 1.2. Research Problem.....  | 1   |
| 1.3. Research Objectives.....   | 2   |
| 1.4. Research Benefits.....   | 2   |
| <br>  |     |
| CHAPTER 2 – LITERATURE REVIEW.....  | 3   |
| 2.1. Public Transport Literature review.....                              | 3   |
| 2.2. Decentralization and the Three-tier System of Government of PNG..... | 4   |
| 2.3. Public Transport Authorities.....                                    | 5   |
| 2.4. Theoretical Framework.....   | 5   |
| <br>  |     |
| CHAPTER 3 – RESEARCH METHOD.....  | 7   |
| 3.1. Research Setting.....  | 7   |
| 3.2. Research Design.....   | 7   |
| 3.3. The Key Informants of the Research.....                              | 7   |
| 3.4. Data Collection Techniques.....                                      | 8   |
| 3.5. Data Analysis Techniques.....  | 8   |
| 3.6. Research Schedule.....   | 8   |
| 3.7. Research Focus.....  | 9   |
| <br>  |     |
| CHAPTER 4 – RESEARCH RESULT AND DISCUSSION.....                           | 10  |
| 4.1. Public Transport Infrastructures.....                                | 10  |
| 4.1.1. Bus Stops.....   | 10  |
| 4.1.2. Bus Stop Rapid Shelter.....  | 11  |
| 4.2. Modes of Public Transport.....                                       | 13  |
| 4.2.1. Buses.....   | 14  |
| 4.2.2. Bus Fare.....  | 15  |
| 4.3. Efficient and Affordable Public Transport.....                       | 16  |
| 4.3.1. Friendliness.....  | 18  |
| 4.3.2. Cleanliness and Comfort.....                                       | 18  |
| 4.3.3. Safeness.....  | 19  |
| 4.3.4. Urban Public Transport Reliability.....                            | 21  |
| 4.4. Policies for Public Transport Improvement.....                       | 22  |
| 4.5. Impact on the General Public.....                                    | 23  |
| 4.6. Recommendations.....   | 23  |
| 4.7. Limitations.....   | 23  |
| 4.8. Conclusion.....  | 24  |
| <br>  |     |
| REFERENCE.....  | 25  |
| APPENDIX 1 (Interview Questions).....                                     | 27  |
| APPENDIX 2 (Survey Form 1).....   | 28  |

## **LIST OF FIGURES**

|               |   |
|---------------|---|
| Figure 1..... | 6 |
|---------------|---|

## **LIST OF TABLES**

|              |    |
|--------------|----|
| Table 1..... | 8  |
| Table 2..... | 9  |
| Table 3..... | 12 |
| Table 4..... | 14 |
| Table 5..... | 16 |
| Table 6..... | 17 |

## **LIST OF PHOTOGRAPHS**

|                   |    |
|-------------------|----|
| Photograph 1..... | 10 |
| Photograph 2..... | 13 |
| Photograph 3..... | 19 |
| Photograph 4..... | 20 |

## **ACRONYMS**

|          |  |
|----------|--|
| GoPNG :  | Government of Papua New Guinea                       |
| ICCC :   | Independent Consumer Competition Commission          |
| PNG :    | Papua New Guinea                                     |
| LT :     | Land Transport                                       |
| LNG :    | Liquefied Natural Gas                                |
| LTA :    | Land Transport Division                              |
| MVIL :   | Motor Vehicle Insurance Limited                      |
| NRSC :   | National Road Safety Council                         |
| NCDC :   | National Capital District Commission                 |
| OLPLLG : | Organic Law on Provincial and Local Level Government |
| PMV :    | Public Motor Vehicle                                 |
| RTA :    | Road Traffic Authority                               |
| UNPF :   | United Nation Population Fund                        |
| WTA :    | Works Transport Authority                            |

# ABSTRACT

## Urban Public Transport Challenge in the LNG Era: A case study of the Port Moresby Urban Public Transport

*Author: Jack Assa*

*MA (Public Policy), BA (Government and Politics), Dip (HRM).  
The Author is the Project Manager for Clean Green Energy Ltd.*

Today the cities are residence to half of the world's population, and in 2030, 60% of the population will live in a city (UNPF, 2004). The urban areas have an increasing importance in our society as they are continually growing, along with all the issues related to them. Papua New Guinea (PNG), the host to one of the world's largest Liquefied Natural Gas (LNG) project cannot easily escape from urban issues as LNG and other urban centered developments are partly cause of the issues faced in the urban centers today.

The continuous increase in Port Moresby's population is putting the urban public transport system in brink of collapsing. This study was conducted in Port Moresby and the researcher applied qualitative research techniques to extract data, analyses and present the data. The purpose of the study was to identify the problems faced in the urban public transport system and how it can be addressed using the right policy.

The study has brought to light some of the problems that are being faced in the public transport system today. It was identified that majority of the population living in the city depend largely on public transport. Given influx of the population in the cities due to city, the number of public buses operating in the cities cannot meet the high demand for the vital service, to travel from point A to point B. As a result, the bus fare fluctuates at the discretion of the PMV owners.

Apparently, the older men, women, sick and disable flocks are left to struggle for bus seats. Between, there are no others alternatives for the public transports users. This is equally important to our tourism industry. Urban centers needs to have different forms of public transports so that the people can decide and choose one that is comfortable and worth their money.

The study concluded that a single entity needs to be created by the government and through the organization, appropriate policies and strategies be formulated and implemented to address the problems identified. The following are some of the strategies that need to be included in the policy to improve the public transport systems in Port Moresby: (1) integrate various modes of transports; (2) introduce Smart Card System for user confidence and convenient; (3) provide transit services to make public transport more attractive to users; (4) paint the suburb buses for quick recognition; (5) design good-quality public transport infrastructure.

Having said that, city provides the first hand impression to the outside world. Appropriate regulations needs to be introduced to improve the image of the city and provide improved and efficient public transport services.

**Key Words:** Urban public transport system, congestions, policy

# CHAPTER 1

## INTRODUCTION

### 1.1. Background

Papua New Guinea is going through a drastic change and development. The population in the rural areas is declining as people are drifting to urban centers for ‘better service’. Urban centers cannot accommodate these changes, thus leading to problems. The government services found in the urban centers cannot mitigate these hitches. This can be seen in sectors such as the urban primary and secondary educational institutions and urban health centers. The classrooms and health centers cannot meet the demand of these additional changes. Not only that, the urban transport system has faced the biggest slice of the problem. The increase has an adverse impact on the government services. This can be clearly seen through the illegal land grabbing and unauthorized settlements popping in the recent years. With this increased population, Port Moresby’s city public transport cannot meet the demand, thus it needs sweeping improvement.

### 1.2. Research Problem

It is obvious in Port Moresby that the current public transport systems cannot adequately meet the demand for better services by the city residents. Some may argue that our cities have been poorly planned and built without catering the future. The government is now faced with huge test to find solution to these problems.

The population of PNG’s two major cities, Port Moresby and Lae are expected to double by 2025. This is due to centralization of the spin off benefits from PNG’s multi-million kina Liquefied Natural Gas (LNG) project and other government services in the urban center (Wilma: 2013). This is evident in the rural areas that many schools and health services have closed down or serviced by lone officer (Sia: 2012). The chase for better health, education, and better jobs and small business opportunities have led many people to leave their rural areas and live in the cities, thus, fueling the public transport crises that are seen in our major cities.

Majority of the population living in the city depend largely on public transport. There is a chain of reaction in the problems. Given the influx of the population, the number of public buses operating in the cities cannot meet the high demand for the vital service and that is to travel from point A to point B. Hence, the bus fare fluctuates at the discretion of the Public Motor Vehicle (PMV) owners. Given this, the public transport users have no choice but to pay the price for the transport provided.

Furthermore, according to Timson (2015) agrees that “older men and women flocks are left to struggle for bus seats”. In the process of the struggle to get into the bus and find a seat, petty criminals find it as an opportunist and execute their well-planned tactics in robbing passengers of mobile phones, wallets and other valuable items. It is pretty clear now that the main bus stops are the breeding place for petty thefts during rush hours. People with sick will eventually die inside the bus after the struggle. Other problems such as incompleteness of routes by bus operators and lack of effective enforcement relevant regulations are some of the tip of the problems that were identified during the preliminary study conducted by the author.

### **1.3. Research Objectives**

The main objective of this study is to:

- A. Identify and know the problems faced in the urban public transport in the LNG era
- B. Identify relevant policy options to address the problems faced in the urban public transport

### **1.4. Research Benefits**

This study is very important because it will benefit the government and its citizens in the following ways:

- A. Relevant government institutions: government can rely on past and present information provided from this study to make appropriate decision in making improving the urban public transport.
- B. Literature gap: PNG has a literature gap in the urban public transport sector, thus, this paper intent to provide the basis for public transport system literature. The study will contribute to the PNG’s existing literature on urban public transport by expounding on the challenges faced in the by the sector in the LNG era.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1. Public Transport Literature Review

More than 50% of today's world population is living in urban regions, making the planning of liveable future cities critically important (CAETS: 2012). Thus, many governments around the globe have taken this issue as a priority and taken steps to address this concern, focusing on the impediments and potential solutions to controlled sustainable urban development. Today the cities are residence to half of the world's population, and in 2030, 60% of the population will live in a city (UNFPA, 2004). The urban areas have an increasing importance in our society as they are continually growing, along with all the issues related to them.

That is why the essence of planning is very important because it provides adequate and equitable services to all groups. It has influences and impact on regional patterns of development, economic viability, environmental impacts and on maintain socially acceptable levels of quality life (Murray et al. 1998). Hanson (1995) states transport is an absolutely necessary means to an end and allow people to carry out the diverse range of activities that make up daily life. It contributes to pro-poor policy by providing access to opportunities and enhancements to security (through reduced isolation) as well as providing job opportunities in the sector (World Bank 2002). There are many reasons why people take trips in urban areas, but trips to work (40 to 50% of urban trips in developing countries) and school (20-35%) are major components of travel (Mohan 1994) in (Ingram 1998).

In general, transportation systems form the basis by which economic development can occur and the means by which society interact (Murray et al. 1998).

The urban transport sector, however, has many problems in most developing countries. Inadequate and poor infrastructures, mismatch between supply and demand, and increased rate of accidents are some of the problems. These problems are triggered by interrelated trends such as population growth, and (rapid, unplanned and uncoordinated) growth of cities (TranSafety, 1998).

In order to cater for the changes, it requires efficient intermodal public transportation and effective use of motorized individual transport (specifically cars and motorcycles), integrated into one optimized transportation system according to Murray et al. 1998).



Future cities have to fulfill the following basic criteria: sustainability; good quality of life (e.g., low noise, plentiful daylight and space, “coziness,” a sense of identity, etc.); a variety of local shops in each district to satisfy daily consumer needs; and an efficient, integrated transportation system. This should consist of firstly, a reliable and highly frequent public transportation between suburbs and inner city with a high modality; and secondly, measures to optimize motorized individual transport, such as traffic control systems, traffic management centers, and information systems for drivers. According to Wilson (2013:4), transportation makes its greatest contribution if it is integrated so that switches between different modes are seamless for the users, enabling them to choose the optimal solution for each leg.

Such integrated and optimized transport systems reduce the requirement for roads and parking; reduce congestion, air pollution and greenhouse gas emissions; support the optimization of resources used for transportation in general; and increase the quality of life. Suitable urban development, such as mixed land use, where work opportunities and residential units are closer to each other, can reduce the need to travel. Flexible working time models together with public transport incentives can reduce excessive peak period travel and encourage off-peak travel, and so make public transport more effective and affordable.

Vikash (2003) asserts that it is intuitively clear that urban development and transportation are highly interdependent. On one hand, change or growth of existing or new commercial or private living settlements creates needs for new transportation or increased capacity, more frequent services, and/or shorter travel times. Alternatively, better access to public transportation and more frequent and faster services create a new demand for settlement space nearby, be it for commercial or private purposes, and can completely change the character of an entire neighborhood or area. Hence, a feedback loop exists between urban development and public transportation, but the detailed mechanisms of this loop are not understood well enough to ensure efficient developments of space, transportation and living environments for humans.

## **2.2. Decentralisation and the Three-tier System of Government of PNG**

PNG has a three-tier system of government operating in a unitary fashion: the national or central government at the center, provincial governments below the national government and local governments. Under the present reformed system of decentralised government, the central or national government devolves law-making powers and public service responsibilities to provincial and local

governments. This is done through the Organic Law on Provincial and Local-Level Governments 1995 (OLPLLG), and the Provincial Government Administration Act 1997.

According to Sause (2012), Provincial governments exercise their power in those areas that have been designated primarily provincial functions in the OLPLLG and by formulating and executing policy in relation to these matters. Public services designated under the “primarily provincial functions” are delivered by the provincial governments’ bureaucratic machinery, the provincial administration. Those that fall under national functions are delivered by the national government, although provincial and national governments often act in concert deciding which level of government should be responsible for particular activities where boundaries are unclear. In terms of lawmaking, although provincial legislatures can make provincial laws, national legislation takes precedence over any regulation imposed by provincial authorities in areas where a national law already exists or in areas where there are no provincial laws.

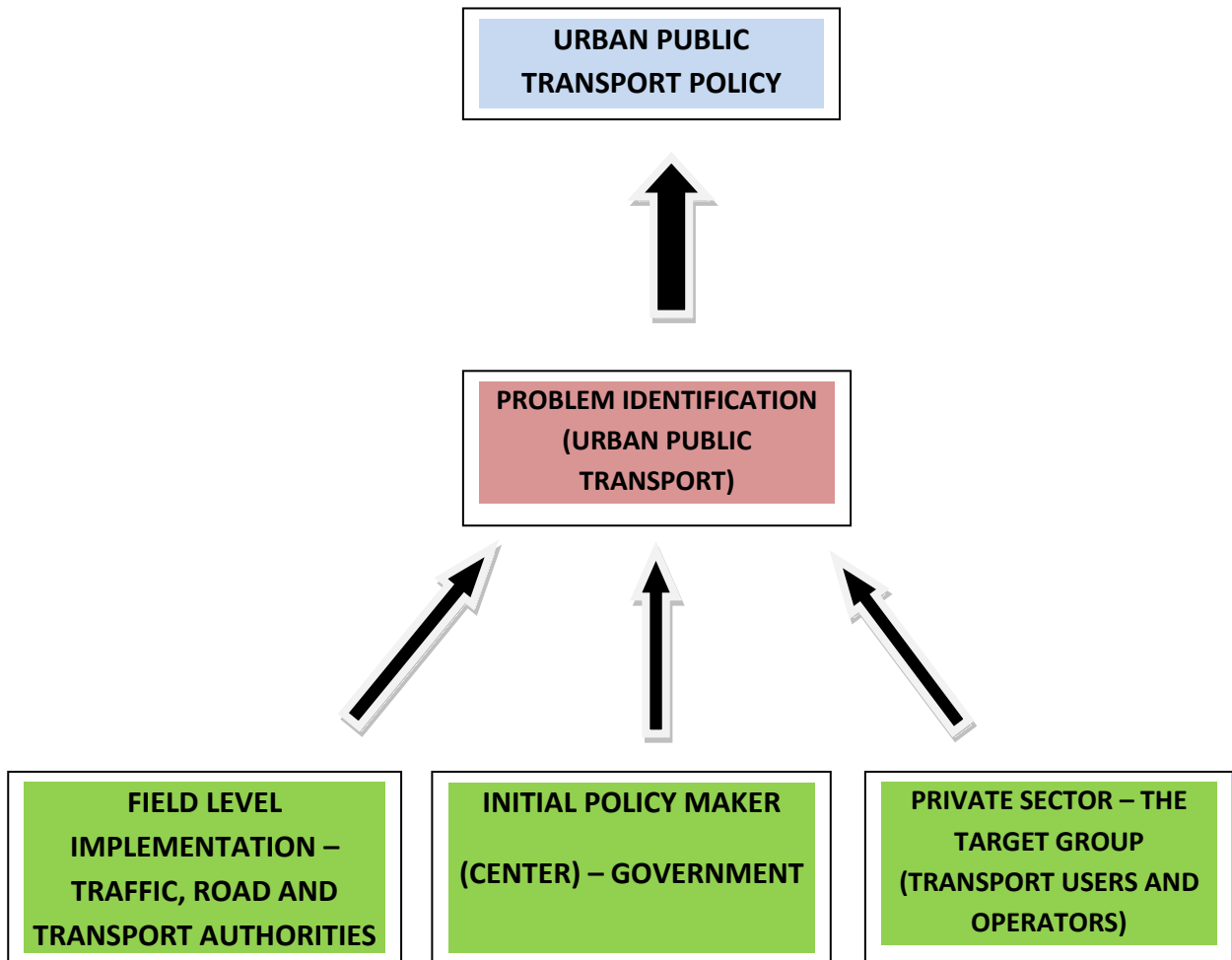
### **2.3. Public Transport Authorities**

Through the decentralization and three-tier system of government, public transport authorities or agencies responsible for enforcing, coordinating and monitoring public transport functions and regulations were established. This includes National Road Safety Council (NRSC), Road Traffic Authority (RTA), Land Transport Division (LTD), Motor Vehicle Insurance Limited (MVIL) and Works Transport Authority (WTA). These important agencies perform important functions in developing and coordinating the implementation of the public transport policies and other GoPNG’s ongoing public sector reform initiatives.

### **2.4. Theoretical Framework**

The theoretical framework of this study is based on the theory by Mazmanian and Sabatier (1983). They argue that for policies to be effectively implemented to address a particular problem, the government authorities (policy implementer) and central government (policy maker) and the private sector (target group) needs to jointly identify the actual problems and basing on problem identification, relevant policies are to be formulated and implemented. The theoretical framework for this study is illustrated in figure 1.

**Figure 1: Theory by Mazmanian and Sabatier (1983)**



## **CHAPTER 3**

### **RESEARCH METHOD**

This chapter deals with the research methodology of the study, including the research setting, research design, sources of data, sample and data collection instruments. According to Bernard (2002) in Tongco (2007:1), data gathering is crucial in research, as the data are meant to contribute to a better understanding of a theoretical framework.

#### **3.1. Research Setting**

The research setting refers to the place where the data are collected. In this study, data were collected in Port Moresby. The two sites are:

1. Public Bus Stops
2. Relevant Government Authorities

#### **3.2. Research Design**

According to Polit and Hungler (1999:155), research design is described as a blue print, or outline for conducting the study in such a way that maximum control will be exercised over factors that could interfere with the validity of the research results. The research design is the researchers overall plan for obtaining information that could be associated with the real situation. This study applied qualitative descriptive design to identify and collect, analyze and present data.

#### **3.3. The Key Informants of the Research**

The key informants are people in various capacities who provided information to the researcher. The key informants were selected using purposive sampling. In choosing a sampling method for informant selection, the question the researcher is interested in answering is of utmost importance. It is a nonrandom technique that does not need underlying theories or a set number of informants. Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experiences, according to Lewis & Sheppard (2006) in Tongco (2007:1). The key informants for this study are:

1. Land Transport Authority
2. National Road Safety Council
3. Public Motor Vehicle owners/operators

#### 4. Public transport users

### 3.4. Data Collection Techniques

From Creswell's techniques (2008:179), the followings were applied to collect data for this study: Firstly, the researcher conducted un-structured in-depth interviews with the key informants identified above. These interviews yield highest response rates in survey research. They also allowed the researcher to clarify ambiguous answers and when appropriate, seek follow-up information. Secondly, the researcher applied observation technique. Since, the main focus of qualitative research is naturalism, the researcher observed person or persons in their natural state as undisturbed as possible according to Potter (1996). And finally, documents as a secondary source of information were obtained from the relevant authorities and other sources like internet and public libraries.

### 3.5. Data Analysis Techniques

According to Creswell (2002:10), "during or immediately after data collection, you need to make sense of the information supplied to you by individuals in the study". He further adds that analysis consists "taking the data apart" to determine individual responses and then "putting it together" to summaries it. The data collected from interviews, observation and documents were analyzed through the process of data reduction, data display and conclusion drawing and verification.

### 3.6. Research Schedule

This study was conducted under the scheduled time frame as provided below.

Table 1. Research Schedule

| Research Activity            | January 2015 | February 2015 | March 2015 | April 2015 | May 2015 |
|------------------------------|--------------|---------------|------------|------------|----------|
| Research Preparation         | Yellow       |               |            |            |          |
| Data Collection              |              | Green         |            |            |          |
| Data Analysis and Completion |              |               |            | Dark Blue  |          |

### 3.7. Research Focus

The focus of this study is presented in table 2 below.

Table 2. Research Focus

| Variable  | Dimension                              | Indicator  | Informants  |
|---|--|--|---|
| <b>Urban Public Transport System (Port Moresby)</b> | <b>Public Transport Infrastructure</b> | 1. Bus Stops<br>2. Bus Stop Rapid Shelter  | 1. National Road and Safety Council<br>2. MVIL<br>3. Land Transport<br>4. Traffic Authority<br>5. Public Transport Users,<br>6. PMV Operators |
|   | <b>Mode of Transport</b>               | 1. Buses<br>2. Taxis   | 1. National Road and Safety Council<br>2. MVIL<br>3. Land Transport<br>4. Traffic Authority<br>5. Public Transport Users,<br>6. PMV Operators |
|   | <b>Efficient and Affordable</b>        | 1. Friendliness<br>2. Cleanliness and Comfort<br>3. Safeness<br>4. Reliability<br>5. Policies<br>6. Impact on General Public | 1. National Road and Safety Council<br>2. MVIL<br>3. Land Transport<br>4. Traffic Authority<br>5. Public Transport Users,<br>6. PMV Operators |

## CHAPTER 4

### RESEARCH RESULT AND DISCUSSION

This chapter presents the findings of the study. The results of the study are presented first followed by the recommendation and conclusion. The indicators were presented under their dimension or aspects.

#### 4.1. Public Transport Infrastructures

Public transport infrastructures are the responsibility of the government through its managing authorities to put in place. As a dimension of this research, the following indicators were studied to research the overall goals and objectives of this study and that includes bus stops, rapid shelters and roads. For the purpose of this study, bus stops and rapid shelters are only discussed here under the public transport infrastructure dimension.

##### 4.1.1. Bus Stops

Most of the bus stops in the city are considered dangerous and very narrow thus, causing traffic bottlenecks. Observations made at Wagani-Morata bus stop, opposite the Wagani Tiger's Rugby Oval is a clear example of such. In some centers in Port Moresby, it is very hard to locate the bus stops like in the case of Manu as depicted below (Photograph 1).

Photograph 1: Narrow Bus Stops



Source: Assa (2015) City Public transport Improvement Study, Port Moresby

Bottleneck bus stops are common in Port Moresby. The bus stops are very narrow that they cause traffic queue. In Port Moresby, buses are the “king of the road”. Of the 67 major bus stops visited by the researcher, only 40% of the bus stops are were noted as acceptable.

Nevertheless, bus operators have less care for bus stops as they are “used to stop for pick-ups and drop-offs” according to Chris Lima of Oro Province. He goes further by saying that “...these drivers have no care attitude. They are the king of the road. You have to wait so that they complete their business. It’s frustrating but we have no choice but to wait for them to clear the road...” (03/05/2015, Down-Town)

#### **4.1.2. Bus Stop Rapid Shelter**

This study found out that almost 80% of the bus stops are incomplete. Bus stations should have small rapid transit shelters that will provide shade for people during rain and heat. It should even have seats made of steels for public transport to sit and relax while waiting for buses. The table 3 below presents the full list of bus stations that were identified in Port Moresby with no transit shelters.

Table 3: City Bus Stops Rapid Shelter Study (*Next page*)

Source: Assa (2015). City Public Transport Improvement Study, Port Moresby.



| No | Names of Bus Stops            | Current Status | Full Rapid Shelter (%) | Incomplete Rapid Shelter (%) | No Rapid Shelter (%) |
|----|-------------------------------|----------------|------------------------|------------------------------|----------------------|
| 1  | Gerehu Stage 2 -              | One Side       |                        |                              |                      |
| 2  | Geregu stage 3                | One Side       |                        |                              |                      |
| 3  | Gerehu stage 4                | One Side       |                        |                              |                      |
| 4  | Gerehu stage 5                | One Side       |                        |                              |                      |
| 5  | Gerehu stage 6                | One Side       |                        |                              |                      |
| 6  | Gerehu stage 7                | One Side       |                        |                              |                      |
| 7  | Waikele                       | One Side       |                        |                              |                      |
| 8  | POM National High School      | One Side       |                        |                              |                      |
| 9  | ADCOL                         | One Side       |                        |                              |                      |
| 10 | Wagani                        | One Side       |                        |                              |                      |
| 11 | Vision City                   | One Side       |                        |                              |                      |
| 12 | Highlander                    | One Side       |                        |                              |                      |
| 13 | Central Wagani                | One Side       |                        |                              |                      |
| 14 | Tunnel (Stop and Shop)        | One Side       |                        |                              |                      |
| 15 | Garden Hill                   | One Side       |                        |                              |                      |
| 16 | Ministry of Works             | One Side       |                        |                              |                      |
| 17 | Boroko Main Bustop            | One Side       |                        |                              |                      |
| 18 | Foodland                      | One Side       |                        |                              |                      |
| 19 | 2 mile                        | One Side       |                        |                              |                      |
| 20 | Badili                        | One Side       |                        |                              |                      |
| 21 | Koki                          | One Side       |                        |                              |                      |
| 22 | Ela Beach                     | One Side       |                        |                              |                      |
| 23 | Downtown                      | One Side       |                        |                              |                      |
| 24 | Waterfront                    | One Side       |                        |                              |                      |
| 25 | Koni                          | One Side       |                        |                              |                      |
| 26 | PNG Power – Hohola            | One Side       |                        |                              |                      |
| 27 | CIS Bustop (Holiday Inn)      | One Side       |                        |                              |                      |
| 28 | Hohola 4                      | One Side       |                        |                              |                      |
| 29 | June Valley                   | One Side       |                        |                              |                      |
| 30 | Tokorara                      | One Side       |                        |                              |                      |
| 31 | TST Fire                      | One Side       |                        |                              |                      |
| 32 | TISA Haus                     | One Side       |                        |                              |                      |
| 33 | Waigani Office                | One Side       |                        |                              |                      |
| 34 | Australian High Com           | One Side       | 6                      | 30                           | 64                   |
| 35 | Limana                        | One Side       |                        |                              |                      |
| 36 | Wardstrip                     | One Side       |                        |                              |                      |
| 37 | Gordens Main Bustop           | One Side       |                        |                              |                      |
| 38 | Foodland                      | One Side       |                        |                              |                      |
| 39 | Ela Murry Inter Bustop        | One Side       |                        |                              |                      |
| 40 | 5 mile Bustop                 | One Side       |                        |                              |                      |
| 41 | East Boroko – Catholic Church | One Side       |                        |                              |                      |
| 42 | East Boroko Main Bustop       | One Side       |                        |                              |                      |
| 43 | Babarako                      | One Side       |                        |                              |                      |
| 44 | POM Grammer                   | One Side       |                        |                              |                      |
| 45 | Taurama                       | One Side       |                        |                              |                      |
| 46 | Manu Main Bustop              | One Side       |                        |                              |                      |
| 47 | Sabama Main Bustop            | One Side       |                        |                              |                      |
| 48 | Kilakila                      | One Side       |                        |                              |                      |
| 49 | Kaugere                       | One Side       |                        |                              |                      |
| 50 | Badili SnS (ITI)              | One Side       |                        |                              |                      |
| 51 | Badili (Ela Motors)           | One Side       |                        |                              |                      |
| 52 | Erima – St Peters             | One Side       |                        |                              |                      |
| 53 | Erima Main Bustop             | One Side       |                        |                              |                      |
| 54 | Erima – Wildlife              | One Side       |                        |                              |                      |
| 55 | ATS                           | One Side       |                        |                              |                      |
| 56 | DPI compound                  | One Side       |                        |                              |                      |
| 57 | 8 mile                        | One Side       |                        |                              |                      |
| 58 | 9 mile main bustop            | One Side       |                        |                              |                      |
| 59 | 5 mile Mountain               | One Side       |                        |                              |                      |
| 60 | Kanage Bustop                 | One Side       |                        |                              |                      |
| 61 | 6 mile (IBS)                  | One Side       |                        |                              |                      |
| 62 | 6 mile Main bustop            | One Side       |                        |                              |                      |
| 63 | 6 mile police station         | One Side       |                        |                              |                      |
| 64 | 7 mile gateway                | One Side       |                        |                              |                      |
| 65 | 7 mile main bustop            | One Side       |                        |                              |                      |
| 66 | Morota 1 main bustop          | One Side       |                        |                              |                      |
| 67 | Morota 2 Main bustop          | One Side       |                        |                              |                      |

From the table 3, it can be seen that almost 64% of the bus stations do not have rapid shelters. 30% of the bus stops have one side rapid shelters while only 6% of the bus stops have full rapid shelters on both sides. This basically reflects that the bus stops need complete improvement. As shown in the photograph 2 below, many bus stops do not have rapid shelters for users to sit and wait for PMV buses.

Photograph 2: Bus Stop with No Rapid Shelter



Source: Assa (2015) City Public Transport Improvement Study, Port Moresby

According to William Tangui of National Capital District Commission (NCDC) “we asked contractors and other private companies operating in Port Moresby to build small shelters at the bus stops but people with bad attitudes take them off. They sell it to people who need them. It’s very frustrating. We gave up because people cannot look after such service properly” (13/02/2015 - Port Moresby).

It can be seen that blame game exist in the public transport sector as each authorities point at each other in building and maintaining public bus stops.

#### **4.2. Modes of Public Transport**

Generally, Public Motor Vehicles (PMV) is provided by the government as services to its people. The users are allowed to pay certain amount of fees set by relevant authorities such as ICCC in PNG. In some countries, the government through its institutions allows private owners or business to

provide this vital service to its citizens. In PNG, it is the later that take presidences. The types of PMVs used are different from other countries or regions. In other words, the type of PMVs used are dictated by various factors such as culture, climate, religious beliefs, country's development status, population and the core reason is road condition. PNG's modes of public transports urban centers specifically Port Moresby City is bus. This study will look at the different modes of PMVs in Port Moresby.

#### 4.2.1. Buses

Buses, particularly 25 seater coaster and 15 seater buses are the common forms of transports used in PNG. Many people prefer 25 seater buses for short distances or cities and 15 seater for long distances. In Port Moresby, the suitability of the bus is dictated by the hot humidity or climate. Many city dwellers prefer 25 seater buses for space, health and safety reasons. According to the study, buses were found to be the dominant force in the urban public transport sector as shown in table 4 below.

Table 4: Types of Public Motor Vehicles in Port Moresby

| No | Type          | Capacity/Seats | Service Provided in the City | Routes                     |
|----|---------------|----------------|------------------------------|----------------------------|
| 1  | Coaster Bus   | 25             | 100%                         | Routes within the city     |
| 2  | Mini Bus      | 15             | 10%                          | Routes outside of the city |
| 3  | Trucks (Dyna) | 36             | 20%                          | Routes outside of the city |
| 4  | Taxi          | 4              | 30%                          | Routes within the city     |

Source: Assa (2015). City Public Transport Improvement Study, Port Moresby

Generally, the mini buses and truck (dyna) as stipulated in Table 4 operates from outside Port Moresby, such as Gaire and Sogeri village of Central Province. Within the city range, only coaster buses are given the permit to run PMVs according to MVIL and National Road Safety Council (NRSC).

This study reveals that there are no alternatives for the public transports users. This is equally important to our tourism industry. Main cities like Port Moresby, Lae and Mt Hagen should have

different forms of public transports so that the people can decide and choose one that is comfortable and worth their money. The public transport user's choices are restricted to use buses. What makes worse is that the buses are very small in size and not sufficient to service the whole population. This is a big problem that needs to be addressed

#### **4.2.2. Bus Fare**

The maximum fare for urban PMV service in Port Moresby is 90t for all urban routes according to the Independent Consumer and Competition Commission (ICCC). This is the fare for the next 5 years that took effect as of December 31, 2014. ICCC many times claimed that they will prosecute owners, drivers and crews of PMV buses that charges in excess of the maximum charge. According to ICCC Commissioner Dr. Bill Manoka "passengers are urged to contact the Commission with details of possible contraventions".

However, 20 PMV bus owners being interviewed by the researcher, argue that spare parts and service fees for buses are very expensive. They feel that K0.80 to K0.90 is not much given days taking of K200. According to Petrus Popil, a bus nine (9) driver argues that at the end of the day, he only makes K200 for serving bus nine route from Gerehu to Boroko. Other operators expressed dissatisfaction that the relevant authorities fail to impose heavy charges on buses and crews who do not comply with traffic rules.

Vagi Vele, a PMV operator from the Central Province claims that he spends K1500 per month to service his vehicle and it is a slap on his face for the ICCC to set K0.90 as the maximum fare without considering the pain and struggle the PMV owners are going through.

Other operators use the weakness in the enforcement agencies to carry out their normal PMV business. According to Kangeman James "...*mipela save trickim ol na drive...yu givim wanpla K20 em bikpela moni long ol blo buia na sumuk...*" (*We know how to trick them (traffic officers). Sometimes we give them K20 which is enough for their betalnut and smoke*) (22/04/2015 – Wagani).

Moreover, many public transport users agree that now are days, it's the PMV operators who set the maximum bus fare and not ICCC. Table 5 provides the changes in the bus fares for selected routes over the last few years in Port Moresby.

Table 5. Increase Fare dictated by Bus Owners

| No | Routes                | 2010-2014<br>Bus fare<br>(toea) | Maximum Bus<br>fare by ICCC<br>(toea) | PMV<br>Owners<br>chargers -<br>2015 (kina) | Peak<br>Hours -<br>2015<br>(kina) |
|----|-----------------------|---------------------------------|---------------------------------------|--|-----------------------------------|
| 1  | Wagani to Boroko      | 50                              | 80t                                   | 80t  | 1.00                              |
| 2  | Wagani to<br>Downtown | 70                              | 80t                                   | 2.00                                       | 3.00                              |
| 3  | Gerehu to Boroko      | 70                              | 80t                                   | 1.00                                       | 2.00                              |
| 4  | Downtown to<br>Boroko | 50                              | 80                                    | 1.00                                       | 2.00                              |
| 5  | Gordons to 8mile      | 70                              | 80                                    | 1.00                                       | 2.00                              |
| 6  | Gordons to 9mile      | 70                              | 80                                    | 1.00                                       | 2.00                              |

Source: Assa (2015). City Public Transport Improvement Study, Port Moresby.

From this table, it can be seen that the bus fares changes overtime. This also affirms that the relevant authorities have less or no control over the fares charged by the operators. It completely lacks monitoring and control. The city dwellers will continue to pay silently as they have “no option” according to Lakope Tarakali, a retired public servant.

#### 4.3. Efficient and Affordable Public Transport

Public transports must be efficient and affordable. This is the main objective that main city authorities around the world work hard to achieve. For Port Moresby, the interviews and observations made through this study reveals that public transport in the nation’s capital is not efficient and affordable. For the purpose of this dimension, 300 public transport users were asked to rate the indicators and the respond was overwhelming as presented in Table 6 (next page).

Table 6. Efficient and Affordable Public Transport Survey Results

| No | Indicators   | Results – (Ratings) |                 |                |
|----|--|---------------------|-----------------|----------------|
|    |  | Assessment Category | Participant (#) | Percentage (%) |
| 1  | Friendliness (operators presentation and friendliness to passengers and traffic rules) | Excellent           | 20              | 6.7            |
|    |  | Very good           | 75              | 25             |
|    |  | Good                | 174             | 58             |
|    |  | Poor                | 16              | 5.3            |
|    |  | Very poor           | 15              | 5              |
| 2  | Cleanliness of the crews and bus   | Excellent           | 27              | 9              |
|    |  | Very good           | 131             | 43.7           |
|    |  | Good                | 119             | 39.7           |
|    |  | Poor                | 17              | 5.7            |
|    |  | Very poor           | 6               | 2              |
| 3  | Comfortable seats  | Excellent           | 88              | 29.3           |
|    |  | Very good           | 102             | 34             |
|    |  | Good                | 70              | 23.3           |
|    |  | Poor                | 39              | 13             |
|    |  | Very poor           | 1               | 0.3            |
| 4  | Traffic rule adherence   | Excellent           | 16              | 5.3            |
|    |  | Very good           | 41              | 13.7           |
|    |  | Good                | 101             | 33.7           |
|    |  | Poor                | 142             | 47.3           |
|    |  | Very poor           | 0               | 0              |
| 5  | Safety   | Excellent           | 63              | 21             |
|    |  | Very good           | 108             | 36             |
|    |  | Good                | 118             | 39.3           |
|    |  | Poor                | 7               | 2.3            |
|    |  | Very poor           | 14              | 4.7            |
| 6  | Respect for women and people with disability   | Excellent           | 8               | 2.7            |
|    |  | Very good           | 15              | 5              |
|    |  | Good                | 67              | 22.3           |
|    |  | Poor                | 135             | 45             |
|    |  | Very poor           | 75              | 25             |

Source: Assa (2015): City Public Transport Improvement Study, Port Moresby

To further the discussion, the third dimension of this study has been decomposed into the following variables namely; friendliness, safe and comfortable and cleanliness as discussed hereafter.

#### **4.3.1. Friendliness**

The public transport system should provide a sociable environment for people from all works of life to enjoy and use public transport. This is important because such environment will encourage and boost the morale of the users. The bus crews (driver and support crew) need to promote friendliness through dressing, look and approach. According to the survey results (table 6), 60% of the participants believed that friendliness is just as good as poor. In other words, friendliness is an area that the operators need to improve.

#### **4.3.2. Cleanliness and Comfort**

Cleanliness is a very important aspect of healthy living. It is not only essential at home but at workplace, school, public transport and other places too. According to the study on efficient and affordable public transport survey only 9% of the participants think that the crews and their buses are clean and there is no problem when it comes to cleanliness. However, other participants believe that buses and their operators are not performing well when it comes to cleanliness.

Furthermore, most of the buses serving the main routes and suburbs in the city are not road worthy. The seats are broken, the windows and insides are filthy. Many of these buses contribute a lot to the cause of climate change through the carbon monoxide. Major cities should formulate policies and regulations that uphold green and sustainable cities in order to fight climate change problem. As portrayed in this photograph (3) taken by the researcher, many buses are filthy and hygienic is compromised.

Photograph 3: Buses Unhygienic and Uncomfortable



Source: Assa (2015), City Public Transport Improvement Study, Port Moresby.

From the study, it emerge that 60% of the buses using Morata One and Morata Two are not registered. In addition, out of all the buses in the city, these buses are seen as very filthy and unhygienic. Buses serving 8mile, 9mile and kilakila, Kaugere and Sabama are seen to be in the same category. Also emerged from the study is that, 50% of the buses operating Bus 9, 11 and 4 were clean as they drive through the main commercial centers which include Boroko, Downtown, Central Wagani and Wagani Office.

The general observation made by the researcher affirms the survey that almost all the buses are not clean, comfortable and friendly. Thus, it is a problem that needs proper analysis and solution.

#### **4.3.3. Safeness**

The system should be safe for its users and service providers. Urban public transports supposed to be freely and safely usable by all mankind including women, sick and disable people. From observation, urban public transports in Port Moresby are not safe for women, sick and disable people as it is a test of the survival of the fittest. Those who are strong enough will be able to get a seat.

In addition, Port Moresby's bus stops are becoming hot spots for criminal activities. Especially during peak periods and late hours, criminal activities are ripe at the bus stops. Observations and



interviews by the researcher reveals that most of the victims are women and people from the Coastal regions (Momase, Papua and Islands). In other words, “unfortunate youths” from the Highlands region of PNG are deemed as the main culprits behind this sort of illicit activities.

According to Issack Perano “... most city bus tops are the hot spots for petty criminal activities. You will see them very clear. They will just grab your mobile phone or pull wallet out of your pocket. They come in groups so sometimes they overpower the victims. Its terrible experiences...” (12/05/2015 - Koki Bus stop).

Betty Peter argues that “...a more active presence of police is required. The *rides* must be *safe* and *comfortable*, especially for elderly, pregnant women or people with disabilities”, (14/05/2015 – Down Town). As shown in the photograph 5 (*next page*), passengers have to physical fight for a seat.

Photograph 4: The Tug of war for Bus Seats



Source: Assa (2015) City Public Improvement Study, Port Moresby.

Conveying the same sentiments, young Vagi Taubada from the University of PNG agrees that the city public transport today is not safe, efficient, and comfortable. Many young girls are afraid and she voiced that she is fear of her life when using PMVs. “... *I don't know but it is true for me. I was robbed and almost raped one time when I got on a bus from Gordons to go to Koki. Thank God a missionary saved my life. It is frightening at times...*” (14/05/2015 – UPNG).

Urban public transport should be safe, friendly and comfortable to all the users including tourist. From this study, it can be asserted that safety issue is a big concern for many public transport users in Port Moresby.

#### **4.3.4. Urban Public Transport Reliability**

The question of reliability comes into one's mind when the buses are not safe, friendly, and comfortable. According to Mark Stonefall, an American tourist who was on his way to Karkar Island was able to share his experience in a more friendly way. According to Stonefall, "...the people here are very friendly... one fascinating thing here is that the urban public transports are confusing and not reliable. I got dropped twice along the road because the bus was not able to pick enough passengers..." – (16/05/2015 – Holiday Inn).

In addition to this problem is the incompleteness of route by the buses. The buses are not often monitored by the relevant authorities. They turn to look for green pastures when they see that their routes have not enough passengers. As such, many people have no choice but to pay for taxis or walk to their destination. It therefore gives them the privilege to join any route as they wish. Most times, buses leave their routes and operate on routes that look busy such as Gerehu-4mile and Gordans-4mile. The Chief Executive Officer of the NRSC Nelson Terema blames the buses drivers for this "attitude problem". He argues that "while NRSC Inspectors are always on the road conducting road blocks to ensure that PMVs and Taxis complete routes and observe traffic rules, PMV drivers have an attitude problem".

Moreover, the number of buses serving a particular route is not equal to another. For example, observations made by the researcher affirm that buses using the Gerehu- Boroko and to Downtown has many buses than buses serving Gordons - Hohola and Gordons - Gerehu. Even though the demand is high, the later routes have few buses because they do not have peak hour rates according to Peter Masul, a bus operator from Mt. Hagen. "... Wagani- 4mile na Wagani-Town gat planti bus bikos ol save kisim K3 or K4 long moning na apinun. Mepla nogat..." (Buses serving Wagani-Boroko and Wagani Town charge K3 and K4 during peak hours so that is why you find lot of buses serving those routes. We do not charge that). (2/05/2015 – Gordons).

This is the problem that needs to be addressed by the relevant authorities through good policies that calls for friendly, cleanliness and comfort, safe and reliable public transport.

#### **4.4. Policies for Public Transport Improvement**

Better policies put in place will lead to better and improved urban public transport system. This will then have a positive impact on the city and its occupants. It is believed that many of the public transport policies and regulations are considered to be outdated. The ICCC after lengthy consultation and workshop produced a report last year. Such report needs to be made public and its recommendation be reviewed and implemented.

According Roy Mumu of the Transport Department, he argued that the organization will put in place policy guidelines to monitor the import of cars. He explains that they are focusing on the four Es of road safety – education, enforcement, engineering and emergency, which will have a positive impact on the urban public transport system.

A similar sentiment was shared by Nelson Terema of NRSC that the rules and policies already in placed were made know to the public including the operators through public and mass media awareness but operators are ignoring the rules. “We have penalized drivers, issued traffic infringement notices, impounded vehicles but still operators continue to break the rules continuously” 11/05/2015 – Central Waigani. It has been made known that once the Road Traffic Authority is established and is in full operation “big head” operators will be heavily penalized and their vehicles impounded. The Road Traffic Authority will see the Land Transport Division, NRSC, Central Province Transport Authority and Traffic Policy merge to make one policing entity.

Furthermore, this study found out that all these transport authorities are not able to monitor and enforce the relevant Traffic Acts. According to the Chief Executive Officer Joe Wemin of Motor Vehicle Insurance Limited, there are 8225 unregistered vehicles in PNG roads, in which the Southern Region which includes Port Moresby has 4166 uninsured or unregistered vehicle on the road. (3/15/2015 – MVIL).

From this discussion, it can now be seen that there are more than five (5) different transport authorities doing the same work. The agencies are ineffective and inefficient in their performances because there is duplication and waste of public resources. The study observed that all the different authorities interested in public transport need to form a single entity to implement the relevant transport policies that will address the problems identified through this study.

#### **4.5. Impact on the General Public**

The issue discussed in this study has a direct impact on the general public and the nation as a whole. It also has a direct impact on the people who solely depend on public transports. For the people who are employed, they end up late at work and affecting the performance. They cannot deliver the expected output each day. Some of the personnel are even under warning and some being terminated, especially for the private sectors. This further has an adverse impact on the family of the employee.

Similarly, school children find it hard to get on time. For the schools that have their own transports for pick up and drop off are lucky. But for those who depend on public transport end up late in class, missing out important lessons, tests or exams, and this affects the performances of the students.

#### **4.6. Recommendations**

These and many other issues relating this subject needs to be addressed accordingly to make our cities a place where our citizens and tourist can find comfort, relaxed, satisfaction and safety. A city represents the image of a country. The outside world can make a quick conclusion just by looking at the main city and impression it portrays of the whole country. Therefore, the problems mentioned needs mitigation through appropriate policies.

Nevertheless, policies formulated to improve the urban public transport should involve some strategies such as providing alternative mode of transport (i.e. coaches), providing transit services, painting of buses to avoid illegal use of unauthorized routes, introducing card system, improving public transport infrastructures such as rapid shelters, amendment of current legislations to cater for the changes and developments faced in Port Moresby. Such guidelines and regulations should also take into account the relationship between and respective responsibilities of the public and service providers, recognizing the value of partnerships in developing and financing modern, sustainable, integrated urban environments. It was also noted that wider consultation needs to be made to extract views and opinion from the users, operators and the responsible state agencies.

Moreover, this study recommends for further research and development on this subject matter to ensure that the relationship between land use and transportation is well understood and the issues faced in the public transport sector.

#### **4.7. Limitations**

The two major limitations are:

- a) Financial constraint was one of the major limitations for this study. The researcher used his own money collect information and analysis produce the output of the study. This might have also influenced the quality of analysis due to presence of some gaps in data collection.
- b) Time limitation was also a big problem. This study was purposely conducted to see the impact of the LNG project on the Urban Public transport, which the final paper supposed to be presented in June, 2015 PNG LNG Update Seminar. As such, data collected were not given ample time to analyze and present. This may have also influenced the output of this paper.

#### **4.8. Conclusion**

The much talked LNG project and other impact projects have both positive and negative impacts on the society. The urban public transport sector is faced with many issues as identified through this research. The study affirms that urban transport is doing far below the expected level even though PNG is facing a boom in its economy due to the project named. Problems such lack of proper public transport infrastructures, unhygienic and cleanliness, are discovered to on the top of the issue. In addition, transport users are restricted to a single mode of public transport which is bus and there is no alternative. The bus fares are decided by the market supply and demand relevant fall short of regulation.

This study also points out that comfort and safety has been compromised and responsible institutions are failing to enforce the traffic regulations and protect this very important sector that presents the image of the nation's capital.

It is therefore recommended that, the government dissolves all the different institutions that are duplicating the responsibilities and wasting government resources. By doing so, a single Public Transport Authority needs to be created so that it can dominantly formulate and implement policies that can improve the urban public transport system.

## References

- Black W. 2000. Socio-economic barriers to sustainable transport. *Journal of Transport Geography*, Volume 8: 141-147
- Creswell, J. 2002. *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Merrill Prentice Hall.
- Creswell, J. 2008. *Research Design: Qualitative, Quantitative and Mixed Methods Approach*. (3<sup>th</sup> Edition). Sage Publication, India.
- Dye, R. Thomas. 2008. *Understanding Public Policy* (11<sup>th</sup> Edition), Pearson Prentice Hall, New Jersey, USA.
- Hanson, 1995. *The Geography of Urban Transport*”, The Guilford press, Newyork, London.
- Ingram, 1998. Patterns of Metropolitan Development: What have we learned?’ *Urban Studies* 35,7. 1019-1035
- Jones, Charles O. 1984. *An Introduction to the Study of Public Policy*, (3th Edition). Brooks/Cole Publishing Company, California, USA.
- Mazmanian, A. Daniel and Sabatier A. Paul. 1983. *Implementation and Public Policy*. Scoot, Foreman and Company, USA
- Murray, Davis et al. 1998. “Public transport access”, *Transport Research D*, 3,5,319:238.
- OECD, 2002. *Guidelines towards environmentally sustainable transport*. France: OECD Publication Service
- OECD, 2000. *The OECD Initiative on Sustainable Development. Progress report to the 2000 ministerial council meeting*
- Pes Wilson., 2012. School and Health Centers Closing due to LNG Project, *Post Courier* ( 13/06/2007), Port Moresby.
- Sause, L., and Kinkin, E., 1997. ‘Managing decentralisation in local-level governments: Papua New Guinea’, *Pacific Economic Bulletin*, 12(2):45–53.
- Sause, L., 2002. *Policy Transfer and Policy Learning: the case of public management reforms in Papua New Guinea*, paper presented at the Policy Network Conference, University of Tasmania, 31 January–1 February, Hobart (unpublished).
- The World Bank, 2002b, “Cities on the Move”. *A World bank Urban Transport Strategy Review* , the world Bank. Washington DC, USA
- TranSafety I., 1998. *Strategies for Solving Urban Transportation Problems in Developing Countries*. Road Management and Engineering Journal.
- Timson Rakimai., 2015. *City Bus Woes Continuous*, - *Port Courier* (12/03/2015), Port Moresby

UNFPA. The United Nation Population Fund. 2004. *State of the World Population 2004*, New York: The United Nation Population Fund UN Habitat

Vikash, 2003, “Variegated System of Mass rapid Transit: An innovation that changes the “familiar World” of Urban transport’, Map India, transportation.

Wilma, James., 2013. Spin off benefits Not Reaching other Centers – The National (18/09/2013), Port Moresby.

[http:// news.pngfacts.com.2014/07/Wikipedia-blocks-pages](http://news.pngfacts.com.2014/07/Wikipedia-blocks-pages)

<http://wiki.greencitystreets.com/improve-public-transport/real-time-information/information www.pngloop.com.2014> for more

# APPENDIX 1

## INTERVIEW QUESTIONS

Question Asked during Interview

### **1: Bus Operators**

Is this your bus?

How much do you make per day?

Can I have a look at inside?

What do you think about operating a bus business?

How often do you service your bus?

Do you complete your routes? Why sometimes you join other routes?

What do you think about the performance of entities in charge of the urban transport?

What is your name? is it okay if I use your name or quote?

### **2. Public Transport User**

Why do you use PMV buses?

What do you think about the crews? Are they welcoming, clean, friendly?

What do you think about the performance of the transport agencies?

Tell me how you catch bus? is it easy?

Tell me some problem you think is common in the urban transport industry.

How about your safety and comfort when using PMVs?

Do you enjoy riding in PMV buses?

What are some of the areas you think the sector can improve?

What is your name? is it okay if I use your name or quote?

### **3. Relevant Agencies**

What do you think about urban public transport system? It's infrastructure? Operators? Users? Are we doing well?

What are the problems you see in this sector?

How can we improve this sector?

Tell me about policies your department is working on to improve the public transport?

Is it okay with you if I use your name or quote?

Thank you for your time.

Jack Assa

Researcher



## Appendix 2 Survey Form 1

**Instructions:** Participants are asked to tick the categories that they think is correct in regards to Port Moresby Urban Public Transport System.

| No | Indicators   | Results – (Ratings) |                    |
|----|--|---------------------|--------------------|
|    |  | Assessment Category | Participant (Tick) |
| 1  | Friendliness (operators presentation and friendliness to passengers and traffic rules) | Excellent           |                    |
|    |  | Very good           |                    |
|    |  | Good                |                    |
|    |  | Poor                |                    |
|    |  | Very poor           |                    |
| 2  | Cleanliness of the crews and bus   | Excellent           |                    |
|    |  | Very good           |                    |
|    |  | Good                |                    |
|    |  | Poor                |                    |
|    |  | Very poor           |                    |
| 3  | Comfortable seats  | Excellent           |                    |
|    |  | Very good           |                    |
|    |  | Good                |                    |
|    |  | Poor                |                    |
|    |  | Very poor           |                    |
| 4  | Traffic rule adherence   | Excellent           |                    |
|    |  | Very good           |                    |
|    |  | Good                |                    |
|    |  | Poor                |                    |
|    |  | Very poor           |                    |
| 5  | Safety   | Excellent           |                    |
|    |  | Very good           |                    |
|    |  | Good                |                    |
|    |  | Poor                |                    |
|    |  | Very poor           |                    |
| 6  | Respect for women and people with disability   | Excellent           |                    |
|    |  | Very good           |                    |
|    |  | Good                |                    |
|    |  | Poor                |                    |
|    |  | Very poor           |                    |