



Report of the Auditor General of  
the Republic of Trinidad and Tobago on  
a Special Audit of  
The Public Transport Service Corporation



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This Report has been prepared under  
Section 116 of the Constitution of the  
Republic of Trinidad and Tobago  
and Section 9(2)(C) of the Exchequer and  
Audit Act Chapter 69:01



Auditor General of the Republic of Trinidad and  
Tobago  
Auditor General's Department  
Levels 2-4, Tower C  
Port of Spain International Waterfront Centre  
1, Wrightson Road  
Port of Spain  
Phone: (868) 625-6585; (868) 627-6727  
Fax: (868) 222-8972  
[www.auditorgeneral.gov.tt](http://www.auditorgeneral.gov.tt)

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- Chairman, General Manager and staff of the Public Transport Service Corporation;
- The Permanent Secretary and staff of the Ministry of Works and Transport;
- The Permanent Secretary and staff of the Ministry of Education;
- The Chief Executive Officer and staff of Vehicle Management Corporation of Trinidad and Tobago;
- Directors, Division of Ageing and Disability Affairs Unit and staff of the Ministry of Social Development and Family Services; and
- Dr. Trevor Townsend, Transportation Expert.

Special thanks to Mr. Robert Reeve, Consultant for his guidance during the conduct of this audit.

Sincere appreciation is also extended to the officers of the Auditor General's Department whose efforts contributed to the successful completion of this assignment.

## EXECUTIVE SUMMARY

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1. The Public Transport Service Corporation (PTSC) is governed by the Public Transport Service Act, Chapter 48:02, (the Act) and is mandated to provide a “...safe, adequate, economic and efficient public transportation system, adapted to the needs of the country...”. PTSC offers public transportation through the provision of commercial bus services and operates out of six hubs in Trinidad and one in Tobago.
2. In addition to transportation services, PTSC provides other services to the public such as rental of commercial space and advertising space. Fares are charged for its transportation services, however, old age pensioners, senior citizens 60 years and over, uniformed school children and recipients of public assistance are entitled to free transport on the public transportation system operated by PTSC.
3. PTSC receives funding for its operations from the Government through the Ministry of Transport (line Ministry) and is also required to generate income from its operations.
4. This study examines the efficiency and effectiveness of PTSC’s management of its bus fleet and the role of its line Ministry in monitoring and evaluation.

### Key Findings

#### Poor governance and management of PTSC

5. **Government policy documents have been silent on public transport.** The Government through the Ministry of Transport guides the strategic direction of PTSC through its policies. Developments in national transportation continue to take place in the absence of an updated National Transportation Plan as the last plan was done in 1967. In 2005, Government through the then Ministry of Works and Transport spent \$3.4 million on a Comprehensive National Transportation Study which was subsequently not accepted.
6. **PTSC’s performance has not been monitored nor evaluated.** During the period 2010-2014 we saw no evidence of PTSC’s performance being monitored or evaluated by the Ministry of Transport. The Ministry of Transport has failed to establish benchmarks and key performance indicators to measure PTSC’s performance.
7. **The Chairman and members of the Corporation approved a Strategic Plan for the period 2012 - 2016 which was not approved by the line Ministry.** PTSC had no Strategic Plan for the period 2010 - 2011 and the 2012 - 2016 plan was not fully implemented as the line Ministry failed to approve the plan. As a result PTSC’s strategic direction was stymied.

8. **PTSC's management has failed to improve performance.** PTSC has recorded consistent losses for the period under review where both numbers of passengers transported and income generated have declined. PTSC has not met its legislative requirement to generate sufficient revenues to cover expenditure.

### **Fleet acquisition**

9. **PTSC was not responsible for the acquisition of all its buses.** Although the Act confers on PTSC the authority to purchase buses this authority has not always been exercised. For the five years 2010 – 2014 a total of 144 buses were procured on three occasions, however PTSC was only responsible for the purchase of buses on one occasion. The other two purchases were done by agencies external to PTSC.

10. **PTSC was unable to generate sufficient income to meet its capital expenditure (acquisition of buses).** Government provides funding for the acquisition of buses. The acquisition of new buses is subject to Cabinet's approval and budgetary allocations in the national budget. During the period 2010 - 2014 Government provided \$118.6 million for the acquisition of 144 buses.

11. **PTSC does not have a bus replacement policy.** The absence of a bus replacement policy and PTSC's dependence on Government funding for the acquisition of new buses has resulted in PTSC using and maintaining a fleet of buses that ranges in age from three to 24 years. At present PTSC uses its buses until they are no longer operational. Over the years buses were procured from various manufacturers which have resulted in a fleet comprising 21 different makes and models of buses. As a result PTSC has faced challenges in servicing and maintaining such a diverse fleet which has negatively impacted on its ability to provide a reliable and efficient service to the public.

12. **Inconsistencies in recording PTSC's fleet size.** The records of its Finance and Accounts Division showed PTSC owned 548 buses as at December, 2014 while the records of its Engineering and Operations Divisions gave the fleet size as 462 buses. PTSC's failure to accurately account for its fleet represents a serious weakness in the control of its main revenue generating assets. The unavailability of accurate information prevents PTSC from making appropriate decisions concerning acquisitions and fleet availability and could result in the loss of assets without management's knowledge.

## Utilization of fleet

13. **PTSC has failed to provide an adequate service to all of its routes.** Analysis done by PTSC showed that in 2014, it was only able to provide an average of 69 per cent service on its 154 routes. While PTSC stated that its ideal daily bus requirement to provide proper route service was 336 buses, for the period under review it was only able to put into operation an average of 255 buses daily.

14. **PTSC's passenger numbers and income generated declined over the period 2010 - 2014.** Overall there was a decrease of five million passengers transported by PTSC between 2010 and 2014. Likewise income from sale of tickets declined from \$27 million in 2010 to \$22 million in 2014.

15. **PTSC did not have a policy for the establishment of routes.** We were informed by PTSC that it takes into account factors such as population density, road conditions, bus stop locations and traffic conditions in the determination of new routes. We examined the establishment of six routes during the period 2010 – 2014; however we saw no evidence of the above criteria being used to establish these routes.

16. **PTSC failed to utilize data generated from the Global Positioning System (GPS) to manage fuel cost.** At the end of 2014 PTSC had installed GPS units on 372 buses and these generated data in respect of idle time, speeding and bus location. PTSC did not utilize data generated from the GPS in the management of its fuel consumption. We calculated that PTSC could have saved approximately \$5 million in fuel cost over the period 2010 - 2014 due to excessive idling of buses. The installation of GPS devices was the first phase of the GPS project; however to date the other phases have not been implemented.

17. **PTSC's last fare increase was in 1990's.** PTSC has not reviewed the fares charged for its core services since the 1990's although section 27 (1) of the Act allows PTSC to set its fares. PTSC sets fares on introduction of new services or for special occasions. From our discussions with PTSC's officials no one knew the procedure or process for the review of its fares neither was any fare policy produced. The fares charged by PTSC have not kept pace with the changing economic conditions.

## Management of the repair and maintenance functions

18. **PTSC's Engineering Division was unable to achieve its planned maintenance of buses as scheduled.** For the period 2010 - 2014 planned maintenance jobs scheduled for buses totalled 15,358 however only 6,968 of these jobs or 46 per cent were completed. There was no evidence that maintenance schedules were revisited and evaluated to determine whether they were realistic or achievable. Failure to perform planned maintenance on PTSC's buses has had a direct impact on the road worthiness of buses and has led to high incidents of breakdowns. It cost PTSC \$118 million to repair and maintain its bus fleet for the period 2010 - 2014. We noted that PTSC spent a similar amount to acquire 144 new buses during the same period.

19. **PTSC did not provide continuous training for the workers of its Engineering Division.** There was no documentary evidence of PTSC's training of workers in new technology and methods in the repairs and maintenance of buses. Workers indicated that they had received no training and had limited exposure in the repair of the different types of buses in PTSC's fleet.

20. **Space allocated for the Engineering Division was not adequately utilized.** Although PTSC occupies significant portions of land we found that the space allocated for the Port of Spain and San Fernando Engineering facilities were cramped and poorly laid out. Comparison of PTSC's facilities to another fleet management provider revealed PTSC's layout did not facilitate a smooth flow of vehicles from one maintenance activity to the other.

## Other issues

21. **PTSC'S management failed to ensure a proper system for storage and retrieval of documents.** PTSC stores most of its documents at an off-site location which we visited during the audit. Documents were seen strewn on the floor and showed evidence of water damage. The lack of a proper system prevented us from accessing information in a timely manner as well as hindered PTSC in providing requested documents.

## Conclusion

22. As the only national bus transportation provider, PTSC has an integral role to play in national transportation; however that role has not been clearly defined. The effective management of PTSC's bus fleet is required in fulfilling its role of public transport provider; however management has not been able to ensure the adequacy and reliability of its fleet. Government has continued to invest more funds into PTSC's operations; however substantial improvements in the delivery of its services to the travelling public have not been achieved.



23. PTSC's Strategic Plan is a basis for public transport planning and action; however there is more to do to achieve adequate and effective public transport including:

- the adoption of best practice in its bus procurement and route planning;
- the upskilling of its Engineering labour force to meet the challenges of new technology;
- robust data acquisition methods and utilization which are incorporated into policy and decision making;
- decisions on spending priorities which are related to strategic objectives; and
- utilization of information technology in major areas of operations.

24. There is scope for the line Ministry to develop clearly defined objectives and performance measures to monitor achievement of outcomes for PTSC. Public transport should be given a much higher profile than at present. Policies to promote a modal shift in favour of public transport do not exist. The following recommendations are intended to improve public transportation management.

## Recommendations

1. **The last National Transportation Plan was done in 1967.** The Ministry of Works and Transport should seek to ensure that an updated National Transportation Plan be developed for the country. Such a plan would guide and inform the state's long term vision for transportation for years to come. With the development of this plan, PTSC's role in respect of national transportation should be outlined and would minimise the implementation of transport initiatives in an ad hoc manner.
2. **PTSC's performance has not been monitored nor evaluated.** The Ministry of Works and Transport and the Management of PTSC should implement a system to monitor and evaluate the performance of PTSC. Measurable targets should be established whereby PTSC's performance can be measured and reported. This would help to improve management performance and assess the impact of its projects and services.
3. **PTSC should develop a bus replacement policy.** In keeping with its overall strategic goals PTSC should seek to develop a Bus Replacement policy which would guide when buses are to be replaced and the manufacturers from whom these buses should be purchased. PTSC should therefore seek to revisit the recommendation of the "Rationalisation of PTSC Bus Fleet Committee"<sup>1</sup> in respect of the procurement of buses. The restriction of the number of manufacturers from whom buses are purchased would assist in reducing the number of makes and models of buses in its fleet. PTSC can also benefit from economies of scale in the purchase of parts, reduced maintenance costs and the development of expertise amongst its technicians.
4. **PTSC does not evaluate the performance of its routes.** PTSC should put a system in place for the monitoring and evaluation of its routes on a regular basis. This would assist in identifying the non-performing routes thus enabling management to focus resources on routes that are more economical and efficient in terms of passenger volume or income generation.
5. **PTSC did not implement the other phases of the Global Positioning System (GPS) Project.** PTSC should consider pursuing the timely implementation of the other phases of this Project. The implementation of these phases would allow PTSC to electronically gather data on passenger numbers; implement electronic fare payment; provide up to date information to its passengers; assist in the scheduling of its buses and the tracking of maintenance costs.

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<sup>1</sup> A Ministerial Committee appointed to make recommendations for the rationalisation of PTSC's bus fleet.

6. **PTSC has failed to maintain its buses as planned.** As recommended in the Parliament's Joint Select Committee report PTSC should seek to have "*...a proper vehicle maintenance and repair system be established or if already in existence modified to ensure that the down time for buses is kept to a minimum*"<sup>2</sup>. This would ensure that PTSC's buses are maintained as scheduled to achieve the optimal performance of its fleet.

7. **Space allocated for the repair and maintenance functions was not properly utilized.** PTSC should review the layout of its garages and other maintenance facilities in order to improve the efficiency of its maintenance operations. PTSC should also consider the removal of all derelict buses and unauthorized vehicles from its facilities which currently occupy valuable and limited space.

8. **PTSC's last fare increase was in 1990's.** PTSC should institute a fare policy to guide its approach to setting of fares.

9. **PTSC's system of document and other information storage and retrieval is inadequate.** PTSC should seek to review its system of document management with a view to improving the storage and easy retrieval of documents and information. Timely retrieval of information will assist PTSC's management in its decision-making. A document management system that is incorporated into an integrated management information system will give managers feedback about their own performance and facilitate monitoring of the organization as a whole. Such a system shows actual data against targeted and therefore measures progress against goals.

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<sup>2</sup> Parliament's Twelfth Report of the Joint Select Committee on the Administration and Operations of the National Transportation System of Trinidad and Tobago dated 14<sup>th</sup> June, 2013

# PART ONE - Introduction

## Background

1.1 The Public Transport Service Corporation (PTSC) was established as a statutory body and came into being on 1<sup>st</sup> May, 1965. PTSC is governed by the Public Transport Service Act, Chapter 48:02, (the Act) which mandates PTSC to provide a “...safe, adequate, economic and efficient public transportation system, adapted to the needs of the country...”

## Vision and mission


1.2 PTSC in line with its mandate has adopted the following:

**Vision:** “PTSC will be: A customer-focused, employee-driven, technology-supported, world-class transportation solution provider, contributing to national development.”

**Mission:** “Safe, reliable, efficient, effective, environmentally sound and socially responsive transportation solutions and other services, supported by innovative practices, modern technology and highly motivated employees.”

## Services

1.3 PTSC has sole responsibility for the provision of commercial bus services in Trinidad and Tobago and seeks to provide this through the following services –

Service	Details
National Bus Transportation 	Deluxe Coach Service - introduced in March 2010 on the Port of Spain to San Fernando and Port of Spain to Sangre Grande routes.  The Express Commuter, Transit and Rural services operate throughout Trinidad and Tobago.
Charter Bus	This service is offered to individuals, schools, public and private institutions.
Contracted School Transport	Since 1994 PTSC has been managing the Contracted School Transport service on behalf of the Ministry of Education for which it is paid a management fee.  Maxi Taxis operators are contracted to transport school children from various parts of the country to their respective schools.

Service	Details
<p>Specialized Transport</p> 	<p>This service is offered through the Elderly and Differently-Abled Mobile (ELDAMO) service. PTSC partnered with the then Ministry of the People and Social Development to launch this service in 2012 in Trinidad and Tobago. The service is free to its users and can be accessed by calling a toll free number.</p>

1.4 PTSC’s services, excluding Specialized Transport, can be accessed through the purchase of bus tickets, monthly bus passes or payment of rental fees. Passengers 60 years and over, recipients of social assistance and school children in uniform can access bus services free of charge.

1.5 PTSC conducts its operations from seven hubs located throughout Trinidad and Tobago. Passengers can access buses at all hubs. In addition, maintenance services are carried out at four of these hubs (Figure 1).

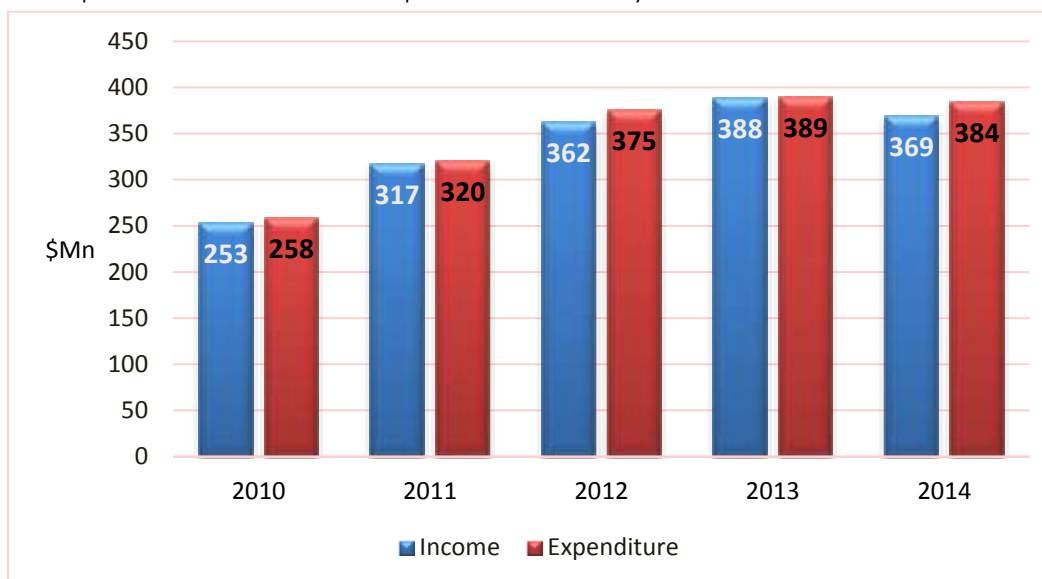
Figure 1: Location of PTSC’s hubs



## Funding

1.6 The Act states that PTSC is required to ensure that its “revenues are sufficient to cover operating expenses, including taxes, if any, and to provide adequate maintenance and depreciation, and interest payments on borrowings”. For the period 2010 – 2014 PTSC’s income totalled \$1.689 billion while expenditure totalled \$1.727 billion. We analysed income and expenditure for the period and found that PTSC has not generated sufficient revenues to cover expenditure in each of the five years (Figure 2).

Figure 2: Comparison of income and expenditure for the years 2010 – 2014

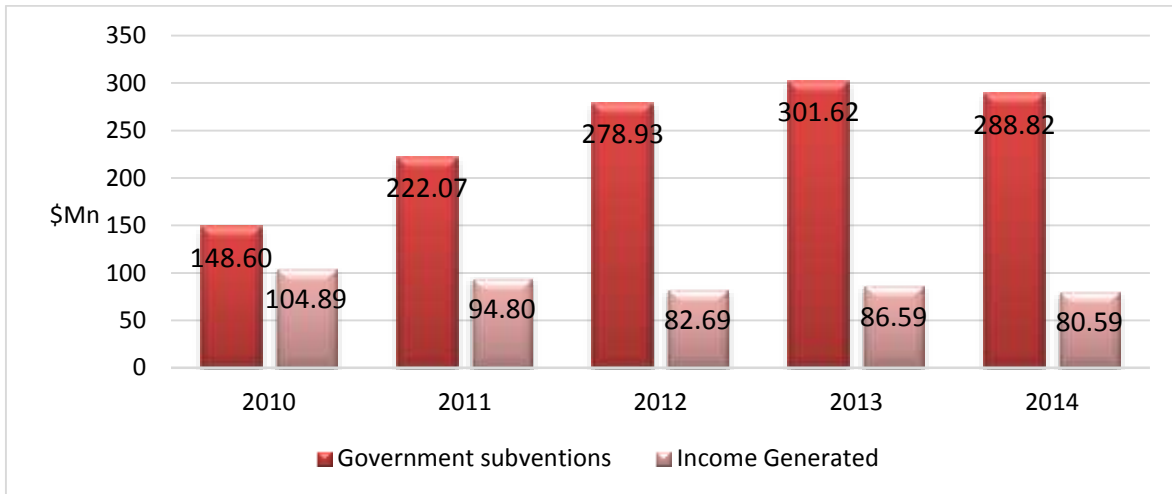


Source: PTSC Financial Statements 2010-2014

1.7 Income includes funds allocated by the Government in the form of subventions through its line Ministry, the Ministry of Transport<sup>3</sup>. Over the period 2010 - 2014 funds allocated by the Government increased from \$149 million in 2010 to \$289 million in 2014, an increase of \$140 million or 94 per cent. However, income earned from operations over the same period showed a continuous decline, from \$105 million in 2010 to \$81 million in 2014 a decrease of \$24 million or 23 per cent as shown at Figure 3.

<sup>3</sup>The Ministry of Transport was established as a separate Ministry in July 2011. Prior to July 2011 line responsibility for PTSC resided with the Ministry of Works and Transport.

**Figure 3:** Government subventions and income generated for 2010 - 2014

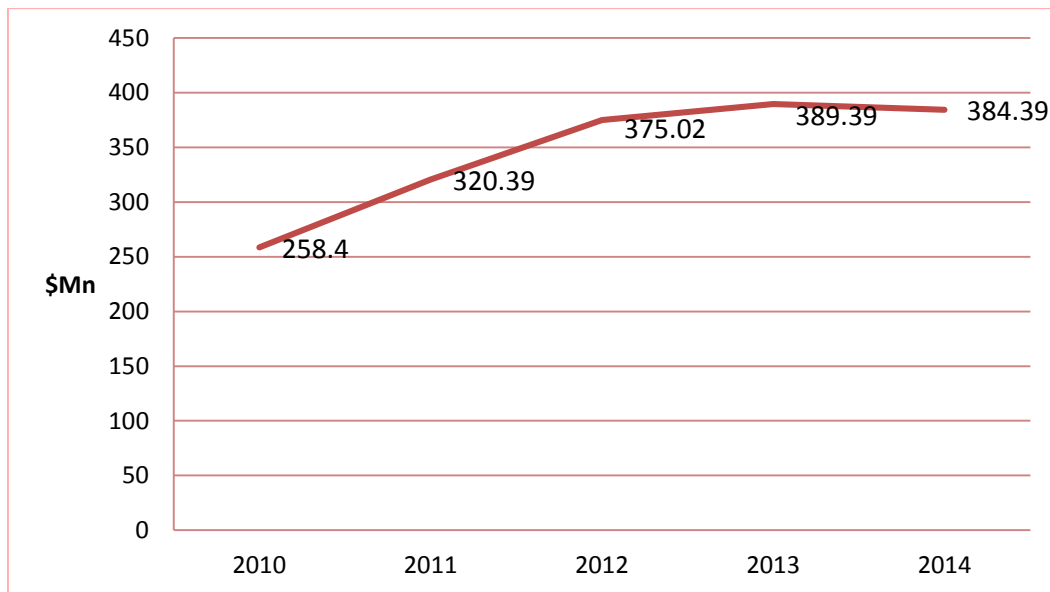


Source: PTSC's Financial Statements 2010 - 2014

### Expenditure

1.8 For the period 2010 – 2014, PTSC's total expenditure was \$1.727 billion. **Figure 4** shows expenditure increased from \$258 million in 2010 to \$384 million in 2014, an increase of \$126 million or 49 per cent.

**Figure 4:** PTSC's expenditure 2010 - 2014



Source: PTSC's Financial Statements 2010 - 2014

1.9 Of the \$1.727 billion spent by PTSC, the major item of expenditure was wages and salaries totalling \$800 million or 50 per cent while other notable expenditure items were as follows:

Expenditure item	Amount \$ Mn	Percentage of total expenditure
Repairs and maintenance of bus fleet	118	7
Loan repayments on the purchase of buses	30	2
Security of PTSC assets	106	6

### Staffing

1.10 As at 1<sup>st</sup> January, 2010 PTSC's staff complement stood at 1,111 employees, however this expanded to 1,959 as at 31<sup>st</sup> December, 2014 an increase of 848 employees or 76 per cent.

### Audit objective

1.11 Our audit examined the operations of PTSC to determine whether PTSC is managing its fleet of buses in order to deliver an efficient and effective service to the Public.

### Audit scope and methodology

1.12 Our audit was planned and conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAIs) for Performance Auditing. The planning process involved gaining a thorough understanding of the systems in place for the management of PTSC's fleet.

Our examination focussed on determining whether PTSC:

- has put in place a strategy to ensure the appropriate management of its fleet;
- is delivering a reliable service to the public; and
- is meeting its legislative requirements to cover operational expenditure through income generation.

1.13 Our assessment was based on the review of documents, analysis of data, site visits, interviews with key PTSC personnel, subject matter experts and other stakeholders and surveys and focus groups conducted by the audit team. The scope of the audit covered the five year period 2010 to 2014.



### Limitation of the audit

1.14 A scope limitation is a restriction on an audit caused by the deliberate or unintentional actions of the client or caused by issues that are beyond the control of both the client and the auditor. Other events that do not allow the auditor to complete all planned audit procedures in a timely manner may also restrict the scope of the audit assignment.

1.15 During the audit we experienced long delays in accessing information and PTSC also failed to produce requested information in a timely manner which in turn affected the delivery of our Report.

1.16 Ministries, Departments and Statutory Bodies are required to secure their documents in accordance with Financial Regulations, Chapter 69:01 for at least seven years. Further, Section 10 (2) of the Exchequer and Audit Act, Chapter 69:01 states that “...the Auditor General shall have access to all records...”.

1.17 We noted that PTSC stores most of its documents off-site at the Vehicle Management Corporation of Trinidad and Tobago (VMCOTT) Laventille compound. During our visit to this location we observed that documents as recent as 2013 were strewn on the floor and some documents showed evidence of water damage. Also, the documents were covered with dust and the storage room had a musty smell (**Figure 5**).

**Figure 5:** PTSC’s documents stored at VMCOTT Laventille compound



Source: Auditor General’s Department

## PART TWO - Poor governance and management of PTSC

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### Government's policy on public transport not identified

2.1 The Government through its Medium-Term Policy Framework 2011 - 2014 outlined its objectives, direction and priorities for the development of the country. This document was silent on Government's policy on public transportation and the role it plays in the development of the country. Government has exercised influence over PTSC's strategic direction. In May 2011 Government announced that all persons aged 60 years and over and school children in uniform would be eligible to travel free on the buses of PTSC. The line Ministry failed to obtain Cabinet's approval for this decision; however we noted that the Chairman and members of the Corporation of PTSC proceeded to implement free travel to eligible persons as stated above.

2.2 A National Transportation Plan for the country was done in 1967. In 2005 attempts were made to update the Plan with the undertaking of a Comprehensive National Transportation Study. Although expenditure of \$3.4 million was incurred on the study, the report was not accepted by the then Government.

2.3 Parliament's Twelfth Report of the Joint Select Committee on the Administration and Operations of the National Transportation System of Trinidad and Tobago dated 14<sup>th</sup> June, 2013 indicated that *"transportation infrastructure investment decisions are being taken in the absence of an updated and credible national transportation plan"*. According to the Report *"...old and new plans must be integrated into a single comprehensive development policy..."*

2.4 To date no further developments for a national transportation plan have been made.

### The line Ministry's role

2.5 PTSC's line Ministry, the Ministry of Transport, was established as a separate Ministry in July 2011. Prior to July 2011, responsibility for PTSC resided with the Ministry of Works and Transport<sup>4</sup>. We noted that during the period under review 2010 - 2014 four different Ministers had responsibility for PTSC.

2.6 The Ministry of Transport is responsible for ensuring that State Bodies falling under its purview adhere to and implement the Government's policies and guidelines. As part of this function the Ministry of Transport was required to establish a Monitoring and Evaluation Unit. We were informed by the Accounting Officer of the Ministry of Transport that such a unit was not established and neither benchmarks nor key performance indicators were developed to measure PTSC's performance. However we were told that communication between the Ministry and PTSC took place on a regular basis.

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<sup>4</sup> From September 2015 responsibility for PTSC resides in the merged Ministry of Works and Transport.

## The role of the Corporation

2.7 PTSC is a statutory body and has a Chairman, Vice-Chairman and at least five members who are collectively known as the Corporation. The Corporation is accountable to its line Minister and its main responsibilities are planning, monitoring and controlling the activities of PTSC to ensure optimal utilization of its resources and the achievement of its corporate objectives.

2.8 The Corporation performs a specific set of functions which is directed to meet the Mission of the organization. The strategic direction of PTSC as outlined in its Strategic Plan 2012 – 2016 was approved by the Corporation in June 2012. A review of decisions taken by the Corporation revealed that approval was not granted by the line Ministry. In the absence of an approved Strategic Plan the Chairman informed us that management followed policies and procedures established through custom and practice. It was also stated that the goals and objectives for PTSC were the same as those detailed in the Strategic Plan 2012 - 2016.

## The lack of an approved strategic plan did not prevent PTSC from furthering transportation initiatives

2.9 A strategic plan is essential as it provides direction in using resources appropriately to meet overall objectives in tandem with measurable targets. There was no strategic plan for the period 2010 to 2011.

2.10 During the period 2010 - 2014, PTSC's management focussed on the delivery of its mandate and sought to achieve some of the objectives outlined in the Strategic Plan 2012 - 2016. We examined this Plan and found that it outlined nine objectives of which only one was partly achieved at the time of the audit. PTSC has failed to make significant strides in attainment of the other eight objectives given at **Appendix 1**.

2.11 PTSC was able to complete the following initiatives during our period of review, although these were not identified in its Strategic Plan:

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### **1. Establishment of a Bus Drivers Training Academy**

In May 2012 PTSC established a Bus Drivers Training Academy located at the Vehicle Management Corporation of Trinidad and Tobago (VMCOTT) Laventille compound. The total cost of establishing this academy was not provided, however we noted that a Bus Driving Simulation System was purchased at a cost of \$7.3 million. For the period May 2012 to April 2014 a total of 772 bus drivers were trained. At the time of our visit on 30<sup>th</sup> November, 2015 we were informed that training was not being done as the Simulator had not been in use since April 2014.

## 2. Establishment of bus fleet rationalization committee

We found that buses acquired during the period 2010 to 2014 were of different makes and models to what existed in prior years, which contributed to increasing the number of makes and models of buses in its fleet. PTSC recognized the challenges in maintaining a fleet comprising of various makes and models of buses and in June 2014, through the Ministry of Transport established a Committee<sup>6</sup> to make recommendations on the rationalization of its fleet. The Committee finalized its report in December 2014 which was subsequently approved by the then Cabinet.

## 3. Implementation of new bus routes

PTSC implemented 41 new routes during the period 2010 - 2014. However, we saw no evidence of PTSC's plan to vary the number of routes serviced. Despite numerous requests we were not provided with evidence of any feasibility study done to determine if there was a need for additional routes to meet the needs of the travelling public. Whether PTSC had the resources to service these additional routes could not be ascertained since information was not forthcoming. We noted that in spite of the additional routes the number of passengers transported decreased from 12.6 million in 2010 to 7.6 million in 2014.

### Management failed to optimize resources to improve PTSC's performance

2.12 The General Manager and senior executives manage the day-to-day operations of PTSC and are responsible for implementing policies and directives set by the Corporation.

2.13 Although PTSC continued to receive increased subventions and new buses, management failed to utilize these resources to improve PTSC's performance. For the period 2010 - 2014 we noted that performance deteriorated in the following areas as shown below (**Figure 6**).

**Figure 6:** Performance for the period 2010 - 2014

Areas	Impact	2010	2014
Income generated	Decreased	\$105 million	\$81million
Net Operating Position (Losses)	Increased	(\$4.9 million)	(\$14.9 million)
Income from ticket sales	Decreased	\$27 million*	\$23 million*
Passengers transported	Decreased	12.5 million	7.6 million

**Source:** Auditor General's Department summary of PTSC's data

\* This figure is also included in Income generated

<sup>6</sup> Rationalisation of the Public Transport Service Corporation Bus Fleet

## PART THREE - Fleet acquisition

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### Procurement of buses

3.1 PTSC is guided by legislation and policy in the acquisition of buses. According to section 8 (3) (a) of its Act, PTSC has the power “...to construct, manufacture, purchase, maintain and repair anything required for the purpose of any of the activities of the Corporation”. PTSC has an established procurement process which is formalized in its policy document ‘Contract Procedures – Tender Committee Rules’ dated July 1986. A revised document called the ‘Procurement Rules Revised’ was issued in August 2014.

3.2 We examined the above policy document which we found made no specific mention of the procurement of buses, PTSC’s main assets. However we were informed by PTSC that buses were classified as goods and its procurement was included in the policy. Our examination of the procurement process and contract documents showed that PTSC followed its procurement procedures in the purchase of 24 buses in 2012 and the initial steps to purchase of 35 additional buses in 2012 (see paragraphs 3.5 - 3.6).

### PTSC was not responsible for the procurement of all its buses

3.3 Although the Act confers on PTSC the authority to purchase buses, we found that this was not always done. For the five years 2010 – 2014 a total of 144 buses were procured on three occasions, however PTSC was only responsible for one such purchase. The other two bus acquisition exercises were conducted by agencies external to PTSC.

3.4 The process for the procurement of buses begins with PTSC making submissions through its line Ministry as any purchase above \$5 million requires the approval of Cabinet. Cabinet in giving such approval also identifies the state agency responsible for the procurement of buses.

3.5 The details of bus acquisitions during our period of review are listed below:

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#### **1. Acquisition of 85 buses by Vehicle Management Corporation of Trinidad and Tobago**

In 2010, 85 Chinese manufactured Yutong buses were acquired at a cost of \$66.3 million of which Government provided \$25 million and the balance of \$41.3 million was funded by a bond issued by the Trinidad and Tobago Unit Trust Corporation. The Vehicle Management Corporation of Trinidad and Tobago (VMCOTT)<sup>11</sup> was the agency responsible for the acquisition of these buses. In 2010 the ownership of these buses was transferred to PTSC together with the liability for the repayment of the bond<sup>12</sup>.

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<sup>11</sup> VMCOTT is a wholly owned state enterprise established in August 2000 for the purpose of providing government and state owned vehicle repair and maintenance services. In 2009 Cabinet approved VMCOTT to provide full fleet management services to the Public Sector and in particular to PTSC and the Trinidad and Tobago Police Service.

<sup>12</sup> Cabinet Minute No. 496 dated August 12, 2010

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## 2. Acquisition of 24 buses by PTSC

PTSC undertook the procurement process for the purchase of 24 Chinese manufactured Yutong buses to provide service for the elderly and the differently-abled community. In 2011 tenders were invited and after evaluation, the contract was awarded in July at a total cost of \$13.6 million. The buses were delivered in 2012.

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## 3. Acquisition of 35 buses by National Insurance Property Development Company Ltd.

In August 2011, Cabinet granted approval for PTSC to purchase 100 buses at an estimated cost of \$150 million. By letter dated 29<sup>th</sup> February, 2012, the Minister of Transport advised PTSC to proceed with its invitation to bid for the first tranche of 35 buses. In March 2012 PTSC proceeded to invite tenders. However, in April 2012 the process had to be abandoned as Cabinet<sup>13</sup> took a decision for the National Insurance Property Development Company Ltd (NIPDEC)<sup>14</sup> to undertake the procurement of these new buses. NIPDEC being the new purchaser had to invite new tenders. In August 2013, a contract was awarded for the supply and delivery of 35 Chinese manufactured Sunlong compressed natural gas fuelled buses at just over TT\$38.7 million. The buses were delivered to PTSC in December 2014.

3.6 Cabinet's decision to change the procurement agency for the purchase of the 35 Sunlong buses resulted in the process taking more than three years to complete as the procurement process was not under the direct control of PTSC.

### All funding for the acquisition of buses was provided by Government

3.7 For the five year period 2010 to 2014, PTSC was only able to generate 27 per cent of its total income of \$1.689 billion (see paragraph 1.6); the shortfall was provided by Government subventions. The amount of income generated was not sufficient to cover the purchase of buses and as a result PTSC has had to depend on State funding for this expenditure. Funding is dependent on budgetary allocations in the national budget (**Figure 7**). Funds were disbursed through the line Ministry under the Public Sector Investment Programme. For the period 2010 – 2014 we found that \$118.6 million was used to acquire 144 buses.

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<sup>13</sup> Cabinet Minute No. 597 dated March 15, 2012

<sup>14</sup> NIPDEC is a wholly owned subsidiary of the National Insurance Board of Trinidad and Tobago and was incorporated as a private limited liability company in July 1977. NIPDEC provides a range of services such as project management, procurement management, facilities management and commercial services to Government and its agencies.

**Figure 7:** Cabinet approvals for acquisition of buses 2010-2014

Cabinet Minute	Buses approved for Acquisition	Estimated Cost	Actual Cost
August 27, 2009	60 (29-33 seats) 25 (49-seats)	TT\$66.3 million	TT\$66.3 million
February 3, 2011	24 (12-15 seats, 3 wheelchairs)	TT\$22 million	TT\$13.6 million
August 30, 2011	15–Bi-articulated (72 seats) 45–medium-sized (40-60 seats) 40–mini-sized (20-30 seats)	TT\$150 million	TT\$38.7 million for 35 buses (first tranche)

Source: Cabinet Minutes

3.8 PTSC’s dependence on government financing for the acquisition of new buses has resulted in PTSC using and maintaining buses that range in age from three to 24 years (**Figure 8**). This has negatively impacted on PTSC’s ability to have a fleet of buses capable of providing a reliable service to the public.

**Figure 8:** PTSC – Acquired, disposed and available buses

Year of Purchase	Number of buses			Age of buses 2015
	Acquired	Removed from service	Available for service	
2014	35	-	35	1
2012	24	-	24	3
2010	85	-	85	5
2009	30	-	30	6
2008	90	1	89	7
2007	100	-	100	8
2006	39	-	39	9
2004	34	10	24	11
2001	5	-	5	14
2000	56	17	39	15
1992	1	-	1	23
1991	49	20	29	24
<b>Total</b>	<b>548</b>	<b>48</b>	<b>500</b>	

Source: PTSC’s Fixed Asset Listing

### PTSC does not have a bus replacement policy

3.9 A bus replacement policy outlines factors such as maintenance costs, age and mileage which are used in making replacement decisions. We found that PTSC does not have a bus replacement policy which would guide it in optimizing bus use and in determining how long buses should be kept. PTSC informed us that its buses are used until they are no longer operational. Additionally, PTSC’s procurement policy made no mention of the replacement of buses.

3.10 The Federal Transit Administration (FTA) is an agency within the United States Department of Transportation that provides financial and technical assistance to public transit systems. The FTA established standards for the minimum service life of buses (**Appendix 2**). We used FTA guidelines and computed the average service life of a bus as 8.5 years<sup>15</sup>. Using this average service life, we found that 137 buses or 30 per cent of PTSC's available fleet had surpassed the minimum service life of 8.5 years.

3.11 As PTSC did not have a replacement policy to guide its bus replacement decisions, PTSC spent huge sums on the repairs and maintenance of buses some of which were 24 years old. During the period 2010 - 2014 repair and maintenance costs increased from \$24 million in 2010 to \$30 million in 2013; however this declined to \$20 million in 2014. In 2012 - 2013, approximately \$3 million was spent to refurbish six Marco Polo buses that were 14 years old. PTSC indicated this was a one-time project done to extend the service life of its fleet; however at the time of the audit, we noted that only three of these refurbished buses were functional. We saw no evidence of an evaluation being done on whether the buses should have been replaced or restored.

3.12 The absence of a bus replacement policy resulted in bus purchasing decisions which were not in keeping with international best practice of the transport industry. Our examination of PTSC's historical data of bus purchases between 1992 and 2014 showed that there were varied time lags between purchases, with two year and eight year lapses occurring (**Figure 9**). Best practice in the industry indicates that when buses have reached the end of their useful life, decisions should be taken as to whether the useful life of buses can be extended by further repairs or be replaced.

#### Acquisition of buses resulted in an uneconomical fleet composition

3.13 PTSC has no policy as to the composition of its fleet, therefore over the years buses were procured from numerous and varied manufacturers. Based on the Fixed Asset Register we determined that PTSC's fleet of 548 (**Figure 9**) comprised 21 different makes and models of buses averaging 26 buses per make and model. When PTSC's fleet composition was compared with two regional public bus companies, it was noted that Jamaica has four different makes and models in its fleet whereas Barbados had six different makes and models of buses (**Figure 9**).

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<sup>15</sup>Our minimum service life calculation was based on years and not miles.



**Figure 9:** Comparison of Regional Fleet Composition

Country	Total Fleet Size	Number of Bus Types (Model)	Ratio (Fleet size: Bus Type)
Barbados	200	6	33:1
Jamaica	600	4	150:1
Trinidad and Tobago	548	21	26:1

**Source:** Final Report of the Committee on the Rationalisation of PTSC bus fleet dated December 9, 2014 and Auditor General's Department

3.14 PTSC having recognized the challenges in maintaining such a diverse fleet appointed through its line Ministry, a Committee to make recommendations for the rationalization of its bus fleet. The Committee recommended and in 2015 Cabinet<sup>16</sup> accepted that PTSC should purchase its buses from two suppliers.

3.15 Our review showed that in February 2012, the Corporation expressed its concern about the variety of buses as it contributes to inefficiency. Although the Corporation advised that selective tendering be used as a measure to limiting the number of bus types we observed that open tendering was used by PTSC in the procurement of 24 buses in 2012. This acquisition and the purchase done by NIPDEC; of 35 Sunlong buses; resulted in the addition of two new bus types to PTSC's fleet.

3.16 The maintenance of a fleet of various makes and models of buses has impacted on PTSC's ability to source replacement parts in a timely manner. This contributes to the down time of buses as we were informed that it takes approximately three months for parts to arrive from China. Also a wide variety of bus types requires maintenance personnel with requisite competencies and skills for servicing purposes.

#### Inconsistencies in recording PTSC's fleet size

3.17 Records presented by PTSC revealed inconsistencies in the fleet size. The Fixed Assets Register maintained by Finance and Accounts Division showed PTSC owned 548 buses as at 31<sup>st</sup> December, 2014. The Engineering and Operations Divisions' records gave the fleet size as 462 buses as at the same date. Our comparison of the above documents showed that 47 buses recorded on the Fixed Asset Register were not on the Engineering listing and entries of 42 buses on the Engineering listing were not on the Fixed Asset Register. We also examined the Engineering Division Fleet Status Report which revealed that PTSC's fleet consisted of 440 buses as at 31<sup>st</sup> December, 2014. We noted that that this report showed that 55 buses were scrapped and removed from service however the Fixed Asset Register highlighted that only 48 buses were removed.

<sup>16</sup> Cabinet Minute No. 1290 dated May 28, 2015

3.18 Failure to accurately account for its fleet represents a serious weakness in PTSC's control of its revenue generating assets. The unavailability of accurate information would hamper PTSC from making appropriate decisions concerning acquisitions, fleet availability and could result in the loss of assets without management's knowledge.

# PART FOUR - Utilization of fleet

## PTSC was unable to use its entire fleet to service all of its routes

4.1 PTSC operated its buses on 154 predetermined fixed routes as at 31<sup>st</sup> December, 2014; 136 routes in Trinidad and 18 in Tobago. Of these 154 routes, 41 new routes were added to its schedule during the years 2010-2014, none of which were established in Tobago (Figure 10).

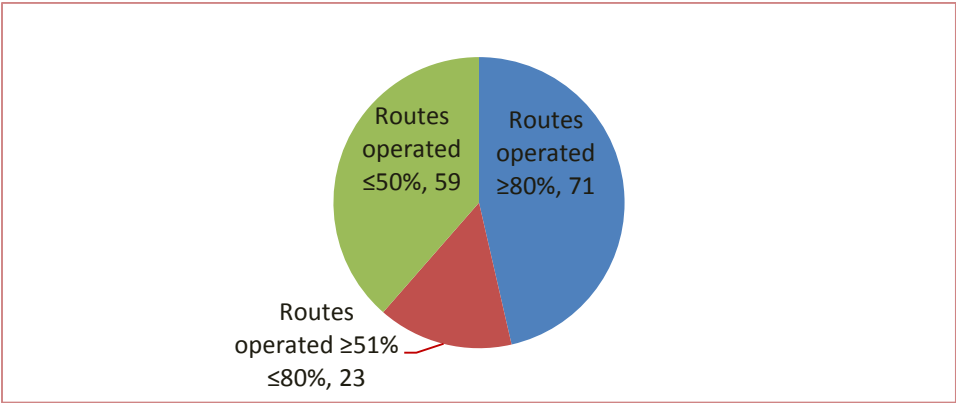
Figure 10: Number of routes operated by PTSC

Year	Total number of routes	Additional routes added yearly	
		Trinidad	Tobago
2014	154	3	0
2013	151	6	0
2012	145	6	0
2011	139	10	0
2010	129	16	0
2009 <sup>17</sup>	113		

Source: PTSC Statistics 2005 – 2014

4.2 PTSC has been unable to provide an adequate service on all its routes, yet it continued to add routes to its schedule over the period 2010 - 2014. The results of a PTSC study done in April 2014<sup>18</sup> showed poor performance in providing a daily service on the majority of its routes in Trinidad and Tobago. The study found that service provided to 59 routes was at the level of 0 - 50 per cent and out of these, 26 routes received no service. Further, PTSC was able to provide between 51 - 80 per cent service on 23 routes and over 80 per cent service for 71 routes (Figure 11). We noted that of the 18 routes in Tobago, 11 received service of less than 50 per cent, five of which received no service; four received service of over 80 per cent and three routes had service of between 50 - 80 per cent.

Figure 11: Service levels of routes operated by PTSC in Trinidad and Tobago for April 2014



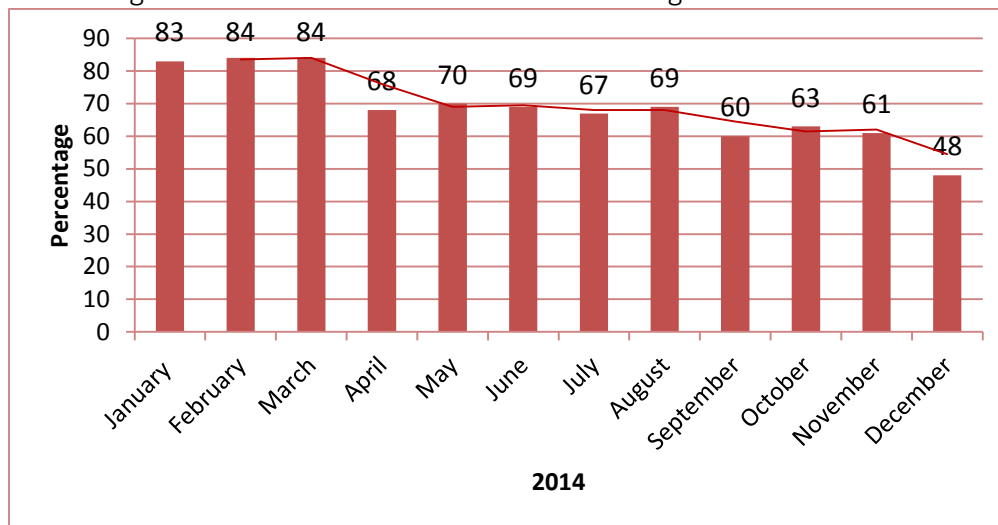
Source: PTSC Analysis of its Service Levels during April 2014

<sup>17</sup> The number of routes operated by PTSC in 2009 is shown here for calculation purposes, only.

<sup>18</sup> As at April 2014 PTSC operated 153 routes and one route was added at year-end.

4.3 Our review of monthly reports for 2014 showed that of the 154 established routes, service was provided only on 126 routes or 83 per cent in January; however this declined to 72 routes or 48 per cent in December of that year (Figure 12).

Figure 12: Percentage of routes serviced in Trinidad and Tobago 2014



Source: PTSC Monthly Achievement Reports (Operations Division)

4.4 We also examined the total number of trips scheduled on the Port of Spain City Service<sup>19</sup> routes and noted that for 2010 only 63 per cent of scheduled trips occurred whereas in 2011 only 64 per cent of scheduled bus trips took place. As a result, PTSC failed to provide 37 per cent of its scheduled trips during this time (Figure 13). Comparable information of City Services routes for the years 2012 – 2014 was no longer presented in the monthly reports produced by the Operations Division.

Figure 13: Service provided on Port of Spain City Service routes 2010 - 2011

Year	Routes Operated	Operating Days	Scheduled Trips	Actual Trips	Percentage of Actual Trips
2010	8	1,992	19,993	12,556	63
2011*	8	1,678	16,994	10,864	64

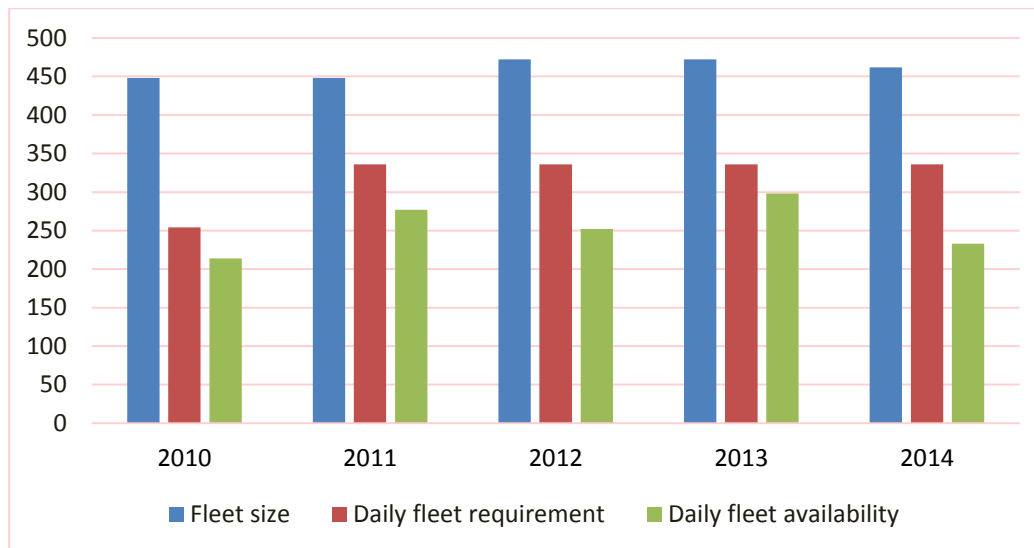
Source: Monthly Operations Reports

\*Data was not provided for June and December 2011

<sup>19</sup> Data was not provided for the other routes

4.5 Although the fleet size averaged 460 buses, our documentary review revealed that a standard daily requirement of 336 buses was necessary to be able to service all routes. However we noted over the period 2010 – 2014, this was never achieved as PTSC was only able to put into use on its routes an average of 255 buses on a daily basis (**Figure 14**) resulting in unsatisfactory servicing of its 154 routes. Also, evidence of management’s monitoring and analysis of routes performance by passenger numbers or income generated was non-existent. Data analysis of routes would highlight to management where additional bus services are required and routes which are no longer viable.

**Figure 14:** PTSC’s Fleet size, daily fleet requirement and availability 2010 - 2014



Source: Analysis of PTSC Statistics 2005 – 2014 September 12th, 2014 and Monthly Operations Reports

### An increase in the number of routes did not result in passengers or income growth

4.6 PTSC in its Strategic Plan 2012 – 2016, proposed to increase passenger ridership and income in alignment with its strategic goal of improving the efficiency and effectiveness of public transportation service. Targets set to increase passengers transported and income by 10 per cent in 2011, 30 per cent in 2013 and 50 per cent in 2015, were not met as PTSC failed to meet any of its established objectives.

4.7 Instead we found that passengers transported declined from 12.6 million in 2010 to 7.6 million in 2014, a decrease of five million passengers or 39 per cent. We noted that in 2011 a recorded high of 14 million passengers were transported followed by a continuous decline of 6.7 million or 47 per cent from 2012 to 2014 (**Figure 15**). In 2011, the Government’s promise of free transport for persons 60 years and over and school children in uniform was implemented.

4.8 We also noted that there was a 22 per cent increase in ticket sales as income rose from \$27 million in 2010 to \$34 million in 2011. While PTSC achieved and exceeded the target set in 2011 for increased income from sale of bus tickets it failed to do so in the following years 2012 through 2014. Ticket sales steadily declined from \$34 million in 2011 to \$23 million in 2014 or 33 per cent (**Figure 15**).

**Figure 15:** Targeted and actual passengers transported and income 2010 - 2014

Year	Passengers transported		Income		Total number of routes
	Target (Million)	Actual (Million)	Target (\$Million)	Sale of Bus Tickets (\$Million)	
2014	19.0	7.6	39.5	22.8	154
2013	17.3	9.7	35.9	24.2	151
2012	15.7	11.5	32.6	26.3	145
2011	14.3 <sup>†</sup>	14.2	29.7	33.7	139
2010	13.0	12.6	27.0	27.1	

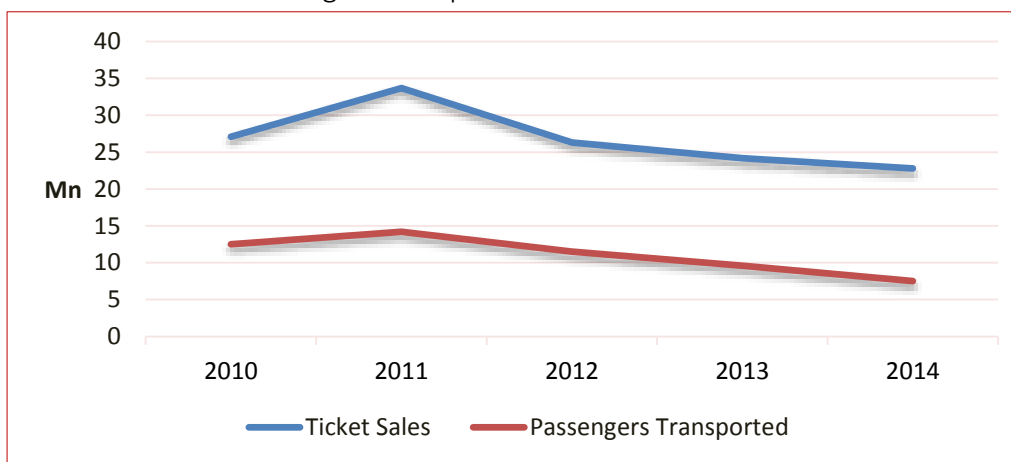
**Source:** PTSC Strategic Plan 2010-2016 and Analysis of PTSC Statistics 2005 – 2014 September 12<sup>th</sup>, 2014

<sup>†</sup>While PTSC indicated the 2010 base passenger ridership figure was 14 million, this was found to be inaccurate and should have been 13 million. The target for passengers, as above, is calculated using 13 million.

4.9 PTSC’s main source of income generation is from the sale of bus tickets. Fares at different rates are charged for accessing bus services. We were informed by PTSC that there has been no adjustment to its established fares since the 1990’s although section 27(1) of the Act states *“The fares and other charges to be charged by the Corporation for the carriage of passengers and goods and other services shall be in accordance with such fares and charges as may, from time to time, be fixed by or under this Act or any other enactment...”*. We noted that when the new Deluxe Coach Service was introduced, the fare for such service was set by PTSC. Upon introduction in 2009 a price of \$10.00 per ticket was charged while the regular bus service cost \$6.00. PTSC also increases its fares on special occasions such as Carnival. To date PTSC has not made any adjustments to its fares.

4.10 Our review revealed that although PTSC increased the number of routes serviced, it failed to increase its passenger numbers or income generated (**Figure 16**).

**Figure 16:** Ticket Sales and Passengers transported 2010 – 2014



Source: PTSC's Financial Statements and Ridership information 2005-2014

### PTSC did not have clear strategy or policy for the establishment of bus routes

4.11 PTSC's Strategic Plan 2012 - 2016 did not include objectives for the establishment of new routes yet it added an average of eight routes per year from 2010 onwards. We were informed by PTSC's management that it considered factors such as population density, road conditions, bus stop locations and traffic conditions to determine whether new routes should be established. In addition, the occupancy of the Housing Development Corporation homes was also a determinant in the establishment of new bus routes. However we saw no policy formalizing these factors by which bus routes are to be established or designed.

4.12 We sampled 14 requests for new bus service routes from external parties consisting of residents, Members of Parliament and Regional Corporation representatives; six of these requests resulted in the introduction of new routes. We could not confirm the use of any of the identified factors to assess the criteria by which these six routes were established as the information requested was not provided by PTSC.

4.13 PTSC did not have a documented method for the setting of new routes to ensure that bus services are well distributed throughout the country to meet the needs of the travelling public.

### PTSC has failed to reduce its accident rate

4.14 As seen in the monthly Operations Division's reports, 1,942 accidents occurred during the period 2010 - 2014. The Strategic Plan 2012 - 2016 identified targets for a reduction in accidents of 25 per cent by 2011 and 50 per cent by 2013 when compared to its base year 2010.

4.15 We found that PTSC failed to meet any of its targeted accident reduction rates. In 2011 the actual number of accidents was 457, surpassing the projected rate of 306 accidents by 50 per cent. In 2014, the actual number of accidents was 316, which exceeded the projected rate of 102 accidents by 200 per cent (**Figure 17**).

**Figure 17:** Targeted and Actual Accidents 2010 – 2014

Year	Target	Actual
2014	102	316
2013	204	373
2012	255	363
2011	306	457
2010	408	433
<b>Total</b>		<b>1,942</b>

**Source:** Operations Division's Monthly Reports 2010 – 2014 and Strategic Plan

4.16 In 2012, PTSC acquired a Bus Driving Simulation System to assist in the training of its drivers. Prior to this acquisition the average number of accidents occurring per month was 36 in 2010 and 38 in 2011. Subsequent to the acquisition of the simulator PTSC safety levels improved as we noted a reduction in the number of accidents per month. For the years 2012 to 2014, average accidents per month decreased from 30 to 26.

4.17 Results of our survey of 1,149 users of the bus service conducted in the months of May to September 2015 revealed that 970 or 93.9 per cent of passengers surveyed rated the bus transport safety level as good to excellent. Additionally 963 passengers or 93.3 per cent found that the bus drivers' skills were good to excellent.

### PTSC has not implemented all phases of its Global Positioning System project

4.18 In 2009 Cabinet agreed to the implementation of Global Positioning Systems (GPS) on vehicles owned and operated by State sector stakeholders<sup>20</sup>. This GPS project was intended as a basis for further development of an Intelligent Public Transport System including arrival information displays; Automatic Passenger Counters (APCs) and Electronic Ticketing. PTSC proceeded with the implementation of the first phase of the GPS project - Vehicle Tracking - at a cost of \$2 million (**Figure 18**). The installation of vehicle tracking units began in May 2012 and was completed in July 2012. GPS units were installed on 328 functional buses (i.e. buses which are available for transport service). As at December 2014, PTSC indicated that GPS units were installed on 372 buses inclusive of the 35 new Sunlong buses. The GPS system is sustained at an annual maintenance fee of \$1.6 million.

<sup>20</sup> Cabinet Minute No.3153 of November 19, 2009



**Figure 18:** Phases of the GPS project

Phases	Outcome	Achievements
Phase 1	Vehicle Tracking	Completed
Phase 2	Automatic Passenger Counting & Traveller Information Services	Not Done
Phase 3	Transit Communication	Not Done
Phase 4	Automated Scheduling	Not Done
Phase 5	Electronic fare payment	Not Done
Phase 6	Maintenance Tracking	Not Done

**Source:** Twelfth Report of Joint Select Committee on Ministries, Statutory Authorities and State Enterprises (Group 2)

4.19 Phase one of the GPS project provided PTSC with data such as bus idle time, bus speed and vehicle location tracking. PTSC has indicated that the GPS facilitated:

- monitoring of its buses while in service;
- assignment of buses on high density routes such as Port of Spain to Arima, Chaguanas, San Fernando; and
- tracking of bus drivers' speeds via speed reports.

4.20 While PTSC collects bus idle time data, these reports are not analysed to inform its decision making process. We examined bus idle time and its impact on fuel usage. We reviewed GPS generated data of idle time in excess of 30 minutes for a two month period in 2014. We did not utilize data of less than 30 minutes as this time period was assumed to be reasonable to allow for passengers boarding and disembarking. We found that for the two month period 189 buses recorded idle time in excess of 30 minutes which totalled 30,412 hours. We calculated fuel consumed for a 12 month period applying this same rate of excess idle time. We estimated that if PTSC improves its fuel usage in terms of reducing idle time it could achieve savings of 670,008 litres<sup>21</sup> of fuel valued at approximately \$1 million per annum (**Figure 19**).

**Figure 19:** Amount and cost of diesel fuel utilized by buses idling in excess of 30 minutes

Description	2 months	12 months
Hours lost in idle time	30,412 hours	182,472 hours
Litres of fuel used per hour	3.67	3.67
Total litres used	111,668	670,008
Cost per litre of diesel	\$1.50	\$1.50
<b>Total cost of diesel fuel consumed</b>	<b>\$167,502</b>	<b>\$1,005,012</b>

**Source:** Auditor General's Department Analysis of PTSC Idle Reports September and October 2014

<sup>21</sup> We calculated fuel consumed by excessive idling for a 12 month period applying the same rate of consumption as in the two month sample period.

4.21 We are in agreement with PTSC's Management that the GPS idle time reports are not the most efficient method to measure fuel consumption. At PTSC, the lack of a fleet management system which incorporates fuel consumption, measurement and analysis does not allow for a more accurate assessment of fuel management.

4.22 PTSC relies on the Government for the provision of funds to proceed with installation of the other phases outlined in **Figure 18**. The implementation of the other phases can assist PTSC in improving the efficiency and effectiveness of its service to the travelling public. Benefits to be derived may include:

- electronic signage displays of up to date information on arrival and departure;
- online access of arrivals and departures information to inform passengers;
- mobile messaging of services and information; and
- electronic ticketing for safer and efficient revenue collection.

Phases 2-6 of the GPS project have not been implemented at the time of the audit. As full implementation was not pursued by PTSC the project outcomes could not be fully realized.

#### Data captured by PTSC was not seen to be utilized in the management of its fleet

4.23 Section 8 paragraph (3) (b) of the Act confers on PTSC the powers *"to hold inquiries and conduct studies respecting economy and efficiency in the transport service"*. PTSC conducted one such study into the efficiency of its bus service in 2012, when it carried out a survey of 400 users and non-users at its Port of Spain hub. The objective of the survey was *"to quantify demand for current services"*.

Significant findings of the PTSC survey revealed that of the persons surveyed:

- 78 per cent indicated they were unaware of the services offered by PTSC;
- 47 per cent used the services of PTSC;
- 62 per cent stated the PTSC service was not punctual; and
- 55 per cent found that the service was efficient and reliable.

4.24 We surveyed 1,149 users of PTSC's service at the seven hubs during the months May to September 2015, to gather data on user satisfaction. The results of our survey showed that 54 per cent of passengers indicated that buses were not punctual and 49 per cent found that the buses were unreliable. In comparison to PTSC'S 2012 survey, our survey results showed slight improvements in these areas.

## PART FIVE - Management of the fleet's repair and maintenance functions

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5.1 One of PTSC's core divisions is Engineering. This Division is responsible for the repair and maintenance of buses in order to ensure the quality, efficiency and adequacy of its buses. The Engineering Division plans, organizes and implements repairs and maintenance programmes for the buses. The main repair and maintenance facility is located at Port of Spain with smaller facilities located at San Fernando, Sangre Grande and Tobago (**Appendix 3**).

### PTSC has been unable to ensure that its buses are properly maintained

5.2 PTSC's Maintenance Policy (September 2000) was developed to ensure reliability, service life and maximum utilization of its fleet. The policy details three types of maintenance to be done:

- Planned Maintenance
- Unplanned Maintenance
- Refurbishment

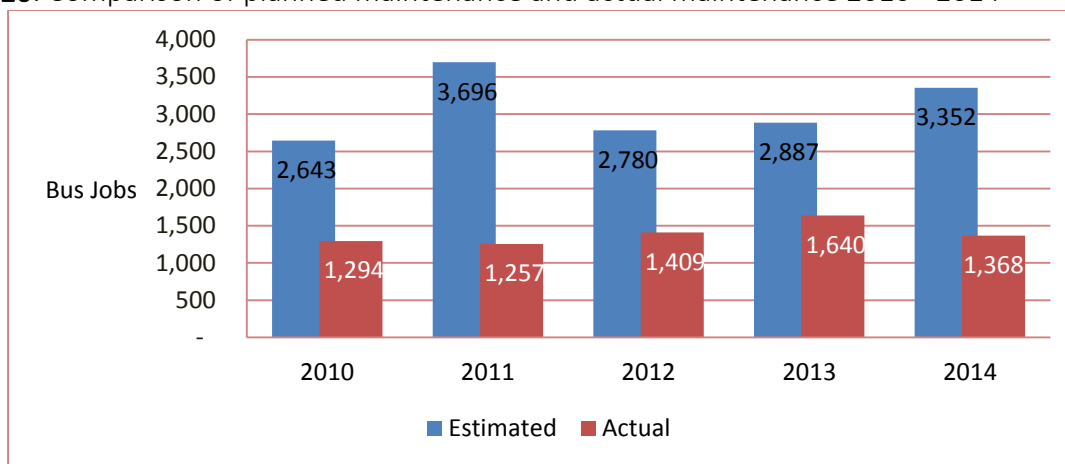
We focussed on Planned and Unplanned maintenance.

### **Planned Maintenance**

5.3 According to its policy PTSC requires that *"All vehicles **MUST** undergo planned maintenance as per schedule"*. Buses are scheduled for planned maintenance on a monthly basis at predetermined levels that are either time or mileage based.

5.4 We found that PTSC was not able to achieve its planned maintenance scheduled for the period 2010 - 2014. For this period, PTSC scheduled 15,358 buses for planned maintenance but was able to complete work on only 6,968 planned jobs or 46 per cent. The highest level of planned maintenance achieved was in 2013 with 1,640 or 57 per cent of planned jobs completed. In 2011, the lowest level was achieved with 1,294 or 34 per cent of planned jobs completed (**Figure 20**).

**Figure 20:** Comparison of planned maintenance and actual maintenance 2010 - 2014



Source: PTSC’s Engineering Division’s Monthly Reports 2010 – 2014

5.5 There was no evidence that maintenance schedules were revisited and evaluated to determine whether they were realistic or achievable. Failure to perform planned maintenance on buses has had a direct impact on the road worthiness of buses and has led to high numbers of breakdowns. From the information provided, there were 430 breakdowns<sup>22</sup> in 2014, or an equivalent of 35 buses per month at the Port of Spain hub.

### Unplanned Maintenance

5.6 Unplanned maintenance is maintenance carried out due to malfunction and breakdown of buses while the bus is in operation. We found that repairs and maintenance jobs done at the four hubs varied significantly for the period 2010 – 2014. There was a steady rise in the total number of repair jobs done with effect from 2011. Repairs and maintenance jobs increased from 8,675 in 2010 to 48,557 in 2013 an increase of 39,882 or 460 per cent, (Figure 21). Information was not available on the number of buses repaired during March – December 2014.

**Figure 21:** Repairs and Maintenance jobs done for the period 2010 - 2013

Year	Port of Spain	San Fernando	Tobago	Total
2013	27,316	12,570	8,671	48,557
2012	10,490	8,741	6,580	25,811
2011	2,875	10,167	No data	13,042
2010	2,880	5,795	No data	8,675

Source: Engineering Division’s Monthly Reports 2010 – 2013

<sup>22</sup> Port of Spain hub analysis done by PTSC for the year 2014

5.7 We noted that the Engineering Division added 238 new workers in the years 2010 – 2012 which contributed to the increase in maintenance jobs being done. Although the number of repair jobs rose this did not translate into a similar boost in the average daily fleet availability (Figure 22).

### PTSC's spend on repairs did not improve the performance of its buses

5.8 PTSC spent approximately \$118 million in repairs and maintenance costs for the period 2010 – 2014. We noted that a similar amount was paid to acquire 144 new buses during the same time. In 2010 PTSC expended an average of \$52,902 to repair a bus. In 2013 the average cost of repairs reached a high of \$63,771 per bus amounting to over \$30 million allocated to bus repairs and maintenance (Figure 22).

5.9 Consequently this resulted in the highest average daily fleet availability of 298 buses. However, in 2014 with annual repair costs of \$20.4 million the daily fleet availability decreased to 233 buses or 22 per cent. Our review of Operations Division's monthly reports for 2014 revealed that Port of Spain servicing workshops had to be shut down due to asbestos contamination and therefore very little work was done.

**Figure 22:** Average cost of repairs based on fleet size and average availability

Financial Year	Annual cost of repairs \$ Million	Fleet size	Average annual cost per bus \$	Average daily fleet availability
2014	20.4	462	44,156	233
2013	30.1	472	63,771	298
2012	19.8	472	41,949	252
2011	24.3	448	54,241	277
2010	23.7	448	52,902	214
<b>Total</b>	<b>118.3</b>			

Source: PTSC's Financial Statements and Analysis of PTSC Statistics 2005 – 2014

### Major challenges experienced due to a diverse fleet

5.10 The maintenance of a diverse fleet requires the Engineering Division to have staff with varied competencies and skills which would allow them to adequately repair and maintain the buses. As at December 2014, the Division had 471 employees consisting mainly of mechanics, welders, electricians and cleaners to service its fleet of buses. These workers were allocated across the four maintenance hubs with the majority being stationed at the Port of Spain hub which has the highest allocation of buses.

5.11 PTSC's fleet comprised 21 different bus types with some as old as 24 years therefore the skillset required to repair and maintain these buses needed to be of vast experience, appropriate qualifications and proper training. Over the past years we found that PTSC had engaged the services of foreign technicians associated with the various bus manufacturers to carry out repairs to its buses. This was done with the intention not only to refurbish the buses but to train and equip its workers with the necessary skills and knowledge.

5.12 PTSC did not provide continuous training of workers in new technology and methods to upgrade their skills in the repairs and maintenance of buses. This was also found to be consistent with comments received from focus group discussions held with the staff of the Engineering Divisions at the various maintenance hubs. Feedback from our discussions with employees revealed that:

- participants had received no training for the period under review;
- their exposure in repairing the different types of buses owned by PTSC was limited. For example, although there are three ELDAMO buses in Tobago, the mechanics indicated that they were never trained in the repair of these buses; and
- Sangre Grande staff relied heavily on their own experiences to repair buses.

5.13 PTSC neglected to ensure that its engineering staff remained up to date in technological methods to allow for the repair and maintenance of its varied fleet of buses.

#### PTSC's maintenance facilities were poor and inadequate

5.14 The main maintenance facilities are located at the Port of Spain hub with a smaller facility at the San Fernando hub. The Port of Spain maintenance facilities occupy approximately 155,000 square feet of property while the San Fernando facilities occupy a smaller area. During our visits to the maintenance hubs in May and July 2015 we observed that the Port of Spain and San Fernando hubs were old and cramped despite its spread on significant portions of land. Audit noted that some of the buildings located at these sites were more than 50 years old having existed since the time of the former Trinidad Government Railway. We also noted that buses were parked in a disorderly manner; workers' private vehicles were positioned between the buses and many derelict buses were seen on the compounds.

5.15 We noted that the Chairman and members of the Corporation expressed concern about the unauthorized parking by staff of private vehicles on the compound. They described the lack of space as critical as there was no room within the Port of Spain compound to park newly acquired buses. We have noted that PTSC made numerous attempts to relocate the Port of Spain Engineering Division to a more suitable location, however to date this has not been achieved.

5.16 PTSC stated that most of its equipment, tools and machinery are obsolete as they are over 30 years old and are not suitable for use in the repair and maintenance of the newer buses. The findings from focus group discussions held with engineering staff at the four maintenance hubs supported this statement as workers stated that:

- modern and upgraded tools were needed to work with;
- a larger area is needed to facilitate the servicing of articulated buses as the yard at Port of Spain was too small;
- the Port of Spain garage was filled with smoke from the constant flow of traffic; and
- there was a need for better lighting at all garages.

### Comparison of VMCOTT’s and PTSC’s repair and maintenance facilities

5.17 VMCOTT repairs and maintains State owned vehicles and up to March 2011 had responsibility for the repair and maintenance of one bus type - the International model. The maintenance function was returned to PTSC with effect from April 2011 in Trinidad and July 2011 in Tobago. In July 2015 we visited VMCOTT’s Laventille facilities in order to compare its operations and layout with PTSC’s Port of Spain facilities.

5.18 We found that VMCOTT utilizes an electronic fleet management system in areas such as inventory, real time job scheduling, monitoring and information retrieval whereas PTSC utilizes a manual system to accomplish these functions. We also observed that the physical layout of VMCOTT’s compound facilitated a smooth flow of vehicles from one maintenance activity to the next as all servicing units were located under one building. PTSC’s facilities differed in space and layout as repairs and maintenance functions were conducted from four separate buildings (Figure 23).

**Figure 23:** PTSC’s Port of Spain maintenance facilities

Building	Services provided
One	First line checks, refuelling and washing of buses Repairs less than 15 minutes
Two	Second line checks and repairs more than 15 minutes but less than 2 hours Tyre repairs and replacement Under-washing
CNG fuel station (temporary)	Refuelling of CNG buses only
Three	Engineering headquarters and Stores
Four	Central Workshop comprised: <ul style="list-style-type: none"> <li>• medium term repairs – more than two weeks but less than one month</li> <li>• long term repairs – more than one month</li> </ul>

Source: Auditor General’s Department

5.19 The maintenance buildings are spread over a large geographical area and as such buses are required to be moved to different buildings for repair. As a result drivers and fuel are additional requirements in having to move the buses from building to building which impacts efficiency and timeliness of repairs. We were informed by PTSC that at times buses are damaged during the manoeuvring process due to the layout of the Port of Spain facilities.

5.20 PTSC's facilities are a remnant of the previous railway company and have not been updated to meet the needs of PTSC such as bus types, equipment and advances in technology.

29<sup>th</sup> June, 2016  
PORT OF SPAIN

MAJEED ALI  
AUDITOR GENERAL



## APPENDICES

### Appendix 1 – Objectives outlined in the Strategic Plan

Objectives	Strategies	Remarks
1. Rebrand PTSC by 1 <sup>st</sup> September, 2012	Design and implement programmes to re-invent the image of PTSC	<b>Not achieved</b>
2. To increase revenue and ridership by 20 per cent per annum commencing October 2012	Use new public image of PTSC to increase revenue and ridership	<b>Not achieved</b> The number of passengers transported decreased from 14 million in 2011 to 7.6 million in 2014 a decrease of 6.5 million or 46 per cent There was also a steady decline in income generated from \$105 million in 2010 to \$81 million in 2014 a decrease of \$24 million or 23 per cent
3. Increase mode share of public transport to 30 per cent	Use new public image to increase mode share (PTSC's share of the transport market)	<b>Not achieved</b> Mode share decreased
4. Diversify PTSC's mode of transport and services	Review existing mode of transport	<b>Not achieved</b> Ridership decreased
5. Diversify PTSC's services	Introduce new transport products e.g.  - Park and Ride  - Premium bus service  - Cargo transport	<b>Achieved</b> – offered in December only  <b>Achieved</b> - Deluxe Coach Service  <b>Not achieved</b>
6. Bring facilities and infrastructure up to international standards	Establish benchmarks for different facilities and infrastructure and upgrade facilities	<b>Not achieved</b> Attempts to modernize Engineering Division have been unsuccessful

## Appendix 1 con't

Objectives	Strategies	Remarks
7. Provide optimum ICT Connectivity at a rate of 33 per cent per annum	<p>Acquire cutting edge ICT/IS infrastructure including hardware and software</p> <p>Integrate management systems</p>	<p><b>Not achieved</b></p> <p>Fleet system is managed manually</p>
8. Move towards meeting international environmental standards by 2015	<p>Establish environmental benchmarks</p>	<p><b>Not achieved</b></p> <p>Benchmarks not established. (New buses are fuelled with Compressed Natural Gas)</p>
9. Refine PTSC's delivery systems through institutional strengthening projects & programmes	<p>Implement a Change Management Framework</p> <p>Establish a Monitoring and Evaluation Unit</p>	<p><b>Not achieved</b></p>

## Appendix 2 – Federal Transit Administration Minimum Service – Life Categories for Buses

Category	Minimum Life (Whichever comes first)	
	Years	Miles
Heavy-Duty Large Bus	12	500,000
Heavy-Duty Small Bus	10	350,000
Medium-Duty and Purpose-Built Bus	7	200,000
Light-Duty Mid-Sized Bus	5	150,000

Source: Federal Transit Authority

## Appendix 3 - Details of PTSC's maintenance facilities

### Port of Spain

Building	Services provided	Nature of Facilities
One (1)	First line checks, refuelling and washing of buses Repairs less than 15 minutes	Two pits for inspection purposes and small repairs and two bays for the washing and sanitizing of buses Filling station with two pumps (diesel)
Two (2)	Second line checks and repairs more than 15 minutes less than 2 hours Tyre repairs and replacement Under-washing	Six service bays and two post lifts Four pits Tyre shop Two washing bays
CNG fuel station (temporary)	Refuelling of CNG buses only	Two pumps
Three (3)	Engineering headquarters and Stores	Two-storey structure
Four (4)	Central Workshop comprised <ul style="list-style-type: none"> <li>• medium term repairs – more than two weeks but less than one month</li> <li>• long term repairs – more than one month</li> </ul>	<p>Medium Repairs:</p> <ul style="list-style-type: none"> <li>• Air-conditioning</li> <li>• Electrical/battery shop</li> <li>• Fuel Injection Shop</li> <li>• Mechanical repairs</li> <li>• Body shop</li> <li>• Welding shop</li> <li>• Radiator shop</li> <li>• Transmission room</li> <li>• Machine Shop</li> <li>• Small component shop</li> <li>• Engine overhaul shop</li> <li>• Painting and Upholstery</li> </ul> <p>Long term repairs:</p> <ul style="list-style-type: none"> <li>• Repair and refurbishment including mechanical, electrical and body</li> <li>• Repairs on CNG buses</li> <li>• Repairs and maintenance of customized buses for external clients</li> </ul>

## Appendix 3 con't

### **San Fernando**

San Fernando has facilities similar to Port of Spain but on a smaller scale and no long term repairs are done. This hub has two bays for planned maintenance and six bays for major repairs and engine jobs.

### **Sangre Grande**

Only first line checks and minor repairs are done at the Sangre Grande hub.

### **Tobago**

At present, PTSC Tobago shares facilities with VMCOTT at Shaw Park, Scarborough. Both parties entered into an arrangement to share the compound from July 2011. PTSC's hub at Sangster Hill was condemned in 2011. There are six bays to facilitate the repair and maintenance of 41 buses.