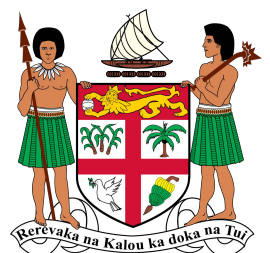
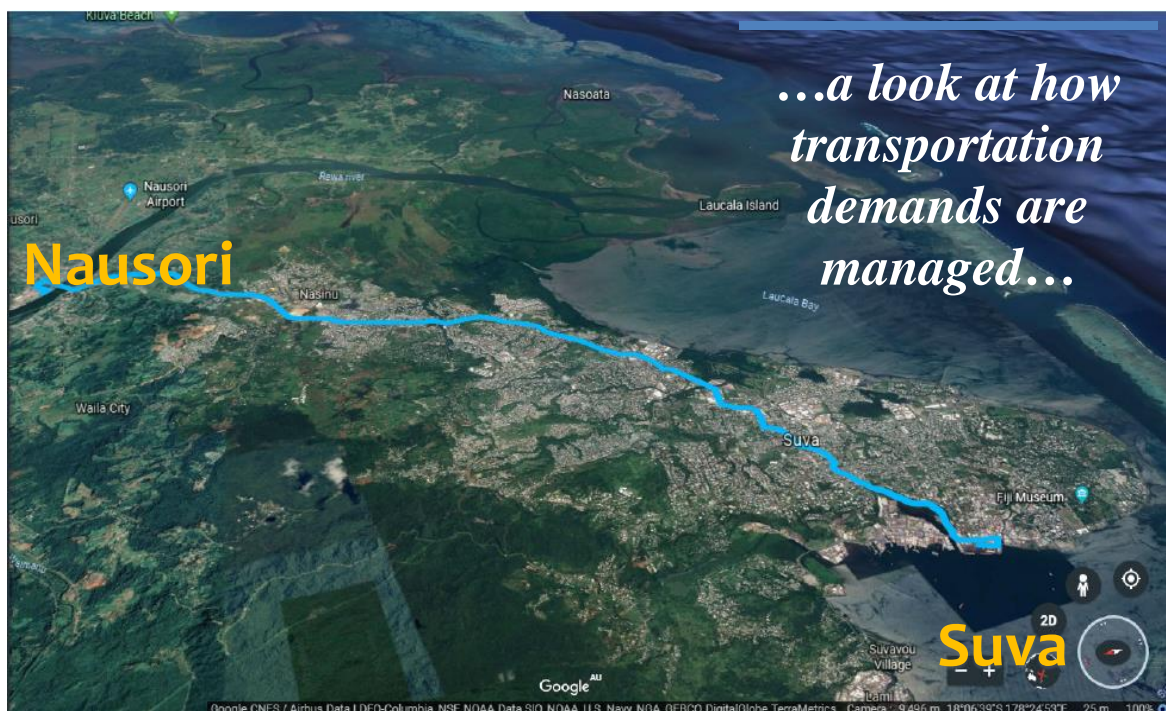




OFFICE of the AUDITOR GENERAL
Republic of Fiji

REPORT OF THE AUDITOR GENERAL OF THE REPUBLIC OF FIJI

Performance Audit on Management of Traffic Congestion





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OFFICE OF THE AUDITOR-GENERAL – REPUBLIC OF FIJI

Location : Level 8, Ratu Sukuna House
2-10 MacArthur Street
Suva, Fiji

Postal : P O BOX 2214, Government Buildings

Address : Suva, Fiji

Telephone : (679) 330 9032

Email : info@auditorgeneral.gov.fj

Website : www.oag.gov.fj

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6-8TH Floor, Ratu Sukuna House
2-10 McArthur St
P. O. Box 2214, Government Buildings
Suva, Fiji

Telephone: (679) 330 9032
Fax: (679) 330 3812
E-mail: info@auditorgeneral.gov.fj
Website: <http://www.oag.gov.fj>



File: 102

14 February 2020

The Honorable Ratu Epeli Nailatikau
Speaker of the Parliament of the Republic of Fiji
Government Buildings
Constitution Avenue
SUVA

Dear Sir

PERFORMANCE AUDIT REPORT ON MANAGEMENT OF TRAFFIC CONGESTION

In accordance with section 152(13) of the Constitution of the Republic of Fiji, I am pleased to transmit to you my report on Performance Audit on Management of Traffic Congestion.

A copy of the report has been submitted to the Minister for Economy who as required under section 152(14) of the Constitution shall lay the report before Parliament within 30 days of receipt, or if Parliament is not sitting, on the first day after the end of that period.

Yours sincerely

Ajay Nand
AUDITOR-GENERAL



Encl.

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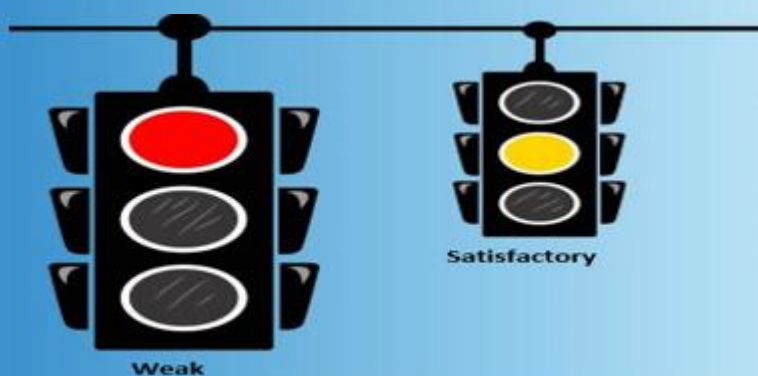
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Audit Findings at a Glance



INSTITUTIONAL FRAMEWORK

- | | |
|---|---|
| ● Policy Framework | ● Legislative Framework |
| ● Stakeholder Arrangement and Engagement | ● Integrated Transport Assessment |
| ● Human Capacity to Manage Traffic Congestion | ● National Transport Consultative Forum |
| | ● Increased Number of Vehicles on Fiji's Road |

ADDRESSING DEMAND SIDE CAUSES OF CONGESTION

- | | |
|--|---|
| ● Public Transport Service Improvement | ● Duty of Traffic Police Officer on Public Road |
| ● Electronic Road Pricing Initiatives | ● Review of the on-street car parking |
| ● Dedicated Bus Lane | |
| ● Carpooling | |
| ● Cycling and Pedestrian Lane | |
| ● Leverage opportunities for demand management | |
| ● Implications for future Investment decisions | |

MONITORING & REPORTING STRATEGIES

- | | |
|--|--|
| ● Monitoring state-wide congestion management initiative | ● Governance Arrangements for monitoring and reporting |
| ● Monitoring Congestion Patterns | ● Centralized System for Data Collection, Analysis & Sharing |
| ● Monitoring Network Efficiency | |
| ● Monitoring into action response program modification | |

Audit Overview

We carried out this audit to assess whether the institutional framework for the management of Traffic Congestion along the Suva-Nausori corridor are adequate and effective.

We also assessed the extent of implementing the existing and proposed frameworks and institutional arrangements in managing the road congestion problem along the Suva-Nausori corridor. Moreover, the audit examines whether efforts of the lead agencies in the form of congestion management strategies and initiatives are effective and efficient.

Finally, we assessed whether monitoring and reporting arrangements over the implementation of the framework, strategies and initiatives are effective. This will enable us to form a conclusion on whether planned congestion management strategies are followed through and achieves not only the targeted outputs but the necessary outcome to manage the problem of traffic congestion.

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Acronyms

Abbreviation	Meaning
ACP	Annual Corporate Plan
APTP	Acting Principal Transport Planner
AWP	Annual Work Programme
BP	Business Plan
CCF	Consumer Council of Fiji
CEO	Chief Executive Officer
COP	Costed Operational Plan
DOT	Department of Transport
ERP	Electronic Road Pricing
FBOA	Fiji Bus Operators Association
FBOS	Fiji Bureau Of Statistics
FPF	Fiji Police Force
FPCL	Fiji Ports Corporation Limited
FLIS	Fiji Lands Information System
FNTPD	Fiji National Transport Planning Database
FRA	Fiji Roads Authority
FY	Financial Year
GGGI	Global Green Growth Institute
GSA	Greater Suva Area
GSTS	Greater Suva Transportation Strategy
HTS	Household Travel Survey
ITA	Integrated Transport Assessment
ISSAI	International Standard for Supreme Audit Institution
LTA	Land Transport Authority
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MLG	Ministry of Local Government
MOIT	Ministry of Infrastructure & Transport
MOU	Memorandum of Understanding
NDP	National Development Plan
NRSC	National Road Safety Council
NTCC	National Transport Coordinating Committee
NTCF	National Transport Consultative Forum
OCC	Operational Control Centre
QPPR	Quarterly Physical Progress Report
RUC	Road User Charge
S3	SARUP 3 - Suva Arterial Road Upgrading Project 3
SDG	Sustainable Development Goal
SOV	Single Occupant Vehicle
SDP	Strategic Development Plan
TOR	Terms of Reference
TDM	Transportation Demand Management
UN	United Nations

EXECUTIVE SUMMARY

The negative effects of traffic congestion are many, from increased stress levels, increasing energy use, pollution to delayed deliveries, but stalling local economies may not be one of them according to a paper recently published by Matthias Sweet. Sweet found that, in fact, for some cities congestion is more “good” than it is “bad”. Traffic congestion is a sign of economic growth. In Fiji, when schools close during the school breaks and holidays, economic activities in the country decline and consequently, traffic congestion eases. When schools resumes classes, more economic activities resumes, from school drop and pick up by parents and hired taxis, increased tailor orders for uniforms, books purchases and teachers travelling to schools to teach. While most strategies to reduce traffic congestions will be favouring reduced energy use and pollution, we should be careful with its effect on economic growth. With some proposals, the cost of trying to rectify the traffic congestion problem may be more than the cost of congestion itself. Proper evaluation of proposals to reduce traffic congestions should be carried out with more consultation and engagements of stakeholders. Apart from the supply of transport infrastructure for any particular road system, the town planning and growth strategies are also important factors that affect the issue.¹

In Fiji, one area of this congestion takes place along the Suva to Nausori Corridor. This is characterised by a fixed road length of about 20km connecting land travellers between the city of Suva and the ever-growing town of Nausori with around 6,000² of its citizens needing to move at the same time each day in the same direction. This immediately causes traffic congestion during peak hours in morning as well as in the evening with on average, general public spending two hours to travel between these two towns (for a driver driving during this peak period, the speed is at 10km per hour). On average, a commuter from Nausori spends 33 days each year (wastage) stuck in the traffic congestion.

The current stakeholders directly involved in dealing with the traffic congestion are the Department of Transport within the Ministry of Infrastructure and Transport, the Traffic Unit within the Fiji Police Force, Fiji Roads Authority and Land Transport Authority. It is also important to include other key stakeholders such as the Department of Town and Country Planning (for Traffic Impact Assessments) and the Ministry of Waterways and Environment and the Ministry of Economy; Fiji Ports Authority, Maritime Safety Authority of Fiji and Vodafone Fiji. There is a greater need for active engagement and close collaboration amongst stakeholders in dealing with traffic congestions especially with the need of a paradigm shift from dealing with mobility to sustainable accessibility.

Purpose

Traffic congestion is a sign of economic growth but if not properly managed can effectively contribute to negative factors that neutralises the factors that drove the same economic growth in the first place. In Fiji, the Household Travel Survey 2018 report saw not only increased household car ownership but also increase in trip making within urban areas; increased travel time for work trips with low vehicle occupancy with sixty seven per cent of vehicles carrying no passengers’.³ With due respect to the report it does not include additional carbon emissions, time wastage, delays resulting in late arrivals, inability to forecast travel time accurately, stressed and frustrated motorists, induced spill over into secondary roads and side streets as Fijians look for other means and ways to reach their destination on time.

¹ Mathias Sweet -**Traffic Congestion's Economic Impacts: Evidence from US Metropolitan Regions** (10/10/2013)

² Extrapolated from Carpooling Survey by LTA Transport Planning & Statistics Department in October 2016

³ Fiji Household Travel Survey 2018 Final Report April 2019

It is against this background that our audit was carried out to assess how traffic congestion has been managed.

Scope in line with the objectives

The scope of the audit included key stakeholders that were identified and responded including the Department of Transport (DOT) within the Ministry of Infrastructure and Transport, Fiji Roads Authority, Land Transport Authority, Fiji Police Force, Ministry of Local Government, Suva City Council and Nausori Town Council.

The objective of our audit was to assess the effectiveness of three areas with management of traffic congestions. The first area looked at the Institutional Framework that exists within and amongst the road transport stakeholders, and how each stakeholder worked amongst each other within this framework. The second area focused on addressing the transportation demand that caused the congestion and the third relates to the strategies that have been put in place for monitoring, evaluating and reporting of traffic congestion.

Key Findings and Recommendations

Coverage The audit on the Management of Traffic Congestion focuses on three areas namely ‘*Institutional Framework*’, ‘*Addressing the Transportation Demand Causes of Congestion*’, and ‘*Monitoring, Evaluation and Reporting Strategies*’.

Key findings *Institutional Framework*

- Several legislation, policies and plans require amendments and reviews.
- Absence of formal agreement and Memorandum of Understanding (MOU’s) between the Department of Transport (DOT) and the other land transport lead agencies.
- Absence of a policy framework hindering the core roles of the DOT.
- Lack of coordination and proper systematic approach in ensuring that Traffic Impact Assessments (TIA’s) are conducted for relevant new developments.
- Issues discussed during the National Transport Consultative Forum (NTCF) are rarely resolved and reappear from one forum to the next.
- Significant increase in volume of imported vehicles due to provision of duty concessions.
- Capacity constraints to managing traffic congestion.

Addressing the Transportation Demand Causes of Congestion

- Weakness in regulating and enforcement of buses of all ages.
- Lack of support to fund and implement Electronic Road Pricing Initiatives for managing traffic congestion.
- Lack of a comprehensive implementation strategy to fully leverage the transportation demand strategies identified in the 15 year Greater Suva Transport Strategy, in managing traffic congestion across the road networks.
- Lack of a comprehensive strategy for implementing carpooling initiatives in managing traffic congestion across the road networks.
- Lack of a comprehensive strategy for implementing identified active low cost and environmentally friendly forms of transport such as cycling and walking.
- Limited evidence of active follow-up on identified opportunities presented in the traffic congestion solution discussion paper.
- Approach to traffic congestion management remains dominated by expensive supply-side initiatives due to absence of coordinated demand management strategies.
- Absence of identified strategies or initiatives in the Fiji Police Force’s annual corporate outputs and the lack of specified times for police officers when starting and concluding the daily routine tasks assigned to them.
- Lack of a comprehensive strategy to fully implement on-street car parking restrictions.

Monitoring, Evaluation and Reporting Strategies

- Strategic level monitoring is not perpetuated on the ground. Instead monitoring is done in isolation by implementing lead agencies.
- Absence of systematic reporting by agencies on the impact of nation-wide congestion management initiatives.

- Lack of data to enable a full assessment of the holistic pattern of congestion.
- Lack of performance measures and targets or key parameters for monitoring the performance of the road and transport network in Fiji.
- Lack of collaboration and coordination between lead agencies to integrate all related data in the centralized national transport database.
- Land transport lead agencies do not address how monitoring is turned into action responses or program modifications.

**General
Recommendations**

We recommend that legislation, policies and plans are amended and implemented in an efficient and effective manner, proper agreements between land transport lead agencies and policy framework to guide the Department of Transport (DOT) oversight role are developed and implemented. Coordination and establishment of proper systematic approach for conducting Traffic Impact Assessments needs to be strengthened for relevant developments. Furthermore, the NTCC to be used as a platform for discussing transport related issues should be revived and ensure that the National Transport Consultative Forum consider traffic congestion management as a priority. Also, capacity for managing traffic congestion in the country needs to be strengthened.

In addressing the transportation demand causes of congestion, we recommend that the DOT in consultation with land transport lead agencies develop and implement a nation-wide transportation demand management strategy. There is a greater need to strengthen active collaboration, engagement and effective coordination of all stakeholders in the Land Transport Sector especially in addressing the transportation demand of road users during the peak hours of traffic.

Furthermore, there is a need to strengthen coordination, planning, delivery of operational services and monitoring mechanisms of the Fiji Police Force in terms of proper implementation during critical times of traffic congestion. In addition, resources should be adequately available to support the coordination and implementation of identified activities that manage the transportation demand of road users during peak hours of traffic.

Monitoring, evaluation and reporting procedures and systems needs to be strengthened so that proper and appropriate action responses and program modifications can be properly developed and implemented.

**Overall
Conclusion**

While legislation and policies to govern the land transport sector exist in Fiji, its effectiveness and adequacy can be improved through proper and regular reviews and evaluations. This warrants holistic reviews so that land transport issues, traffic congestion being a major one, can be appropriately and expeditiously addressed. Coupled with the absence of prescribed procedures at the DOT, there is a lack of formal arrangements/agreements to establish coordination between lead agencies in addressing the problem of congestion on Fiji's roads. This weak coordination is particularly apparent during infrastructure developments where Traffic Impact Assessments are in most part where the authority in charge of developing the road networks such as Fiji Roads Authority are not consulted prior to these developments.

The existence of certain governance structures such as the National Transport Consultative Forum (NTCF) is acknowledged. Though the forum finds traffic congestion issues encapsulated into the various themes, besides the lack of urgency in turning planned strategies into action, the forum in its entirety falls short of committing to congestion management and reduction as a primary theme. The provision of duty concession which has seen the increase in the volume of vehicles into the country has further added to the number of vehicles on the roads. Capacity constraints impedes on the overarching responsibility for congestion management strategies/project effectiveness.

Transportation Demand Management has not been effectively used in Fiji provided the ever growing population in the area between Suva to Nausori corridor as a tool for managing traffic congestion. While limited transportation demand management initiatives have been explored and implemented since 2015, collectively this has been neither comprehensive nor sufficient to materially impact transportation demand for road use and related congestion. Apart from the daily work of the Police in directing traffic at congestion spots, other recent progress in the management of traffic along Suva Nausori corridor has been from the supply of additional road (double lane) between Nakasi and Nausori.

Monitoring and Evaluation (M&E) arrangements are compromised by the absence of a clearly defined land transport sector-wide monitoring and evaluation system at the strategic level, absence of systematic reporting by agencies on the impact of nation-wide congestion management initiatives, absence of traffic data to enable a full assessment of the holistic pattern of congestion, absence of key indicators and trends in traffic performance and performance measures and targets, lack of collaboration in integrating all related data in the centralized national transport database and monitoring not turned into action responses or program modification.

At national level, there is no institutional integration framework to manage traffic congestion amongst the key stakeholders. Consequently, there is no national plan that clarifies the objectives, priorities, performance measures and roles of all transport agencies in managing traffic congestions. Monitoring and reporting arrangements can be further improved.

1.0 INTRODUCTION

In 2015, the Republic of Fiji adopted the 2030 Agenda for Sustainable Development that is aimed at improving people's lives economically, socially and environmentally. The 2030 Agenda for Sustainable Development is a United Nations (UN) global initiative containing 17 sustainable development goals and 169 targets. The 15-year Agenda came into effect from January 2016 following on from the expiry of the Millennium Development Goals (MDG).

Sustainable Development Goal (SDG) 11 highlighted the objective to make cities and human settlements inclusive, safe, resilient and sustainable. Under this goal, target 11.2 specified that at the end of 2030, nations are able to provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

The 2013 Constitution of the Republic of Fiji under Section 34, contains the right of every person to have reasonable access to transportation. It also contains provisions for non-discrimination on the basis of, amongst other criteria, age, ethnicity and gender. This indicates that the design of transport systems should be such as to be accessible and safe to use by different groups in the community including women, children, aged and disabled persons.

The National Development Plan (NDP) also emphasizes on access to transportation through an efficient and sustainable transport network. It also emphasises the need to ensure safe, efficient and affordable transportation which includes reducing traffic congestion.

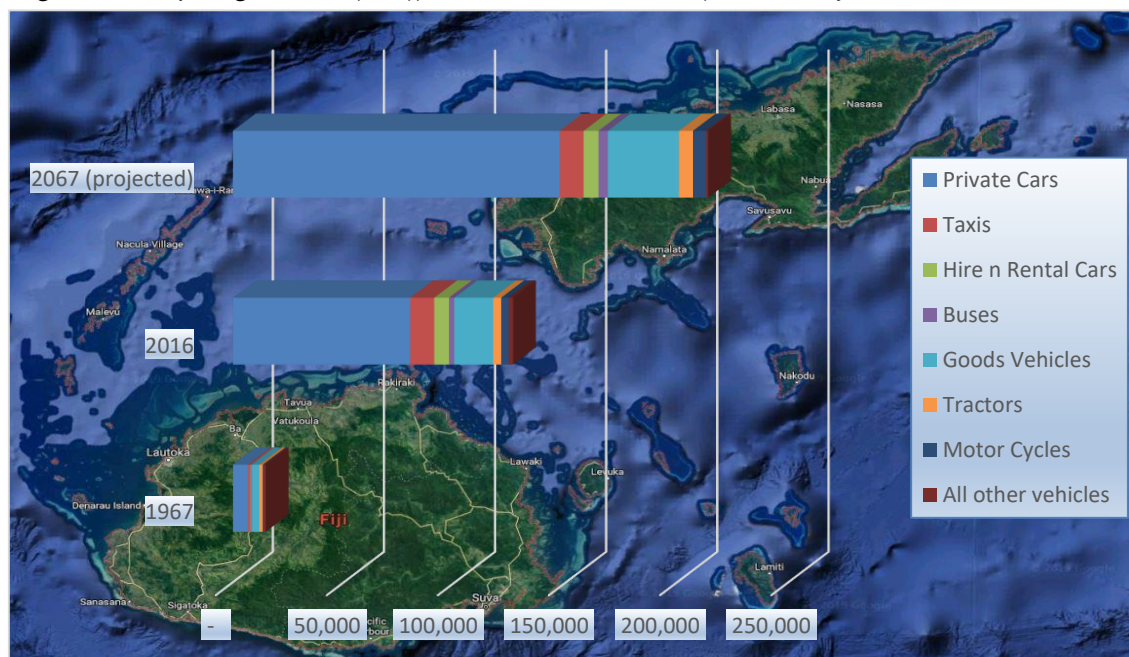
The Greater Suva Transportation Study 2015 – 2030 (GSTS), commissioned by Fiji Roads Authority (FRA) and completed in August 2014, reviewed the previous 2011 strategy, covering the developing urban area from Lami in the southwest to Nausori in the northeast. The study sets out packages of options to improve traffic flow, promote public transport, better provide for pedestrians, reduce congestion, and improve observance of traffic regulations through a variety of location, route and area-wide measures.

The Greater Suva Transportation Strategy (GSTS) is the transport blueprint for the Greater Suva Area over the next 15 years. It addresses key issues such as traffic congestion, enforcement and regulation, bus infrastructure and routes, quality of transport infrastructure, road safety and driver education and awareness.

1.1 Background

Statistics show the increased vehicle population over the 50 years with an average growth rate of 17% per annum with a projected 2067 population, should this growth rate prevail.

Figure 1.1: Comparing Volume of Traffic within 50 Years and Project next 50 years



Source: Fiji Bureau of Statistics 1967 to 2016 Actual Data and projected figures based on audit calculations

Given that the road expansion plans will be relatively placed within the non-expanding land size of Viti Levu and Vanua Levu; the dominating factor of increase in volume of traffic (see Figure 1.1) over the last 50 years (1967-2016) and the next 50 years (201-2067) has not only intensified the pressure on fixed economic scarce resource (horizontal space) but also on limited national financing ability to build adequate and sustainable infrastructures.

During a technical working group meeting on Road Safety Consultation and Land Transport held on 13/08/19 which was attended by stakeholders in the transport sector, it was found that there were approximately 126,719 vehicles on the road in 2018 whilst the numbers increased to 129,674 in 2019.

Implementing road infrastructure can be very expensive and as noted in some countries, building more roads has not solved the congestion problem thus a more effective method would be to address the transportation demand by travellers. This will be the focus of this audit.

1.2 Reasons for the audit

There has been an increasing concern from the public with regards to traffic congestion. A survey conducted by the Department of Transport on 8 February 2017 has estimated that it takes approximately two hours to travel from Nakasi to Suva in the morning.

The existence of traffic congestion is a possible indication of inefficiency in the road transport management. There are various causes to this such as rapid economic growth, employment

opportunities in the cities, preference for car ownership, barriers and obstacles on roads, lack of alternative public transport options and poor land use and transport planning.

As indicated above, the excessive congestion has led to undesirable consequences including the increased costs to the community and businesses through longer, less predictable travel times, lost productivity, additional running costs of vehicles including energy consumption and more pollution to the environment from the fumes of travelling vehicles spending more time on the road.

Therefore, traffic congestion can have a negative impact on the Government's goal of providing a coordinated transport system that is safe, affordable to all, efficient, cost effective, environmentally and economically sustainable.

2.0 AUDIT OBJECTIVE, SCOPE AND METHODOLOGY

2.1 The purpose of our audit

The objective of our audit was to:

- Ascertain whether the institutional framework for the Transportation Demand Management are adequate and effective for managing traffic congestion along the Suva-Nausori corridor.
- Assess whether key strategies and initiatives implemented for the Transportation Demand Management to address traffic congestion along the Suva-Nausori corridor are effective.
- Assess whether there is an established and effective monitoring, evaluation and reporting system in place to ensure that planned transportation demand management strategies are followed through and achieves not only the targeted outputs but also the necessary outcome to alleviate the problem of traffic congestion.

2.2 What we audited

We examined the existing institutional framework, records of implemented strategies and initiatives in addressing traffic congestion, monitoring and reporting arrangements undertaken towards the effective management of traffic congestion along the Suva to Nausori corridor. This audit covered the roles of Department of Transport under the Ministry of Infrastructure and Transport, Fiji Roads Authority, Fiji Police Force and Lands Transport Authority as major stakeholders in traffic management. The Suva City Council and Nausori Town Council were also consulted during the audit.

2.3 How we audited

Audit techniques used for gathering evidence and conducting audit analysis include the following:

- I. Interview of key personnel at the Department of Transport, Fiji Police Force, Land Transport Authority, Fiji Roads Authority, Municipal Councils and Department of Town & Country Planning;
- II. Documentary review of legislations, policies, development plans, strategies, reports, media articles, etc.;
- III. Analysis of data gathered, key performance indicators, measurement of outputs and performance information systems; and
- IV. Examination of database on traffic data and counts.

3.0 INSTITUTIONAL FRAMEWORK

The Institutional framework pertaining to the Management of Traffic Congestion covers the legislation, policies and arrangements in place to manage traffic congestion and the availability of sufficient human capacity to effectively manage traffic congestion.

Contributing factors such as continuous accumulation of population in certain areas, infrastructural developments taking place, pedestrian and driver behaviour, changes in import duty policies and increase in the volume of vehicles on the roads in the urban centres of Fiji has led to difficulty in coping with traffic congestion. These factors pose new challenges for traffic management, urban transportation, and land use system planning and management.

Therefore, this section of the report elaborates on the findings upon analysing the institutional framework put in place such as the; national legislation, policies, procedures and regulations, international, national and ministerial level plans and responsibilities, other stakeholder and key agency plans and responsibilities, existing and planned human capacity resourcing through which the Government together with the associated land transport agencies such as the Department of Transport (DOT), Fiji Roads Authority (FRA), Land Transport Authority (LTA) and the Fiji Police Force (FPF) plans to curb the issue of traffic congestion.

Theme 1: Legislative Framework

Audit observation

We noted that several legislation, policies and plans require amendments and reviews. Regular amendments and reviews are essential to focus on the changing circumstances or make laws that are compatible to those changing circumstances.

Criteria

Government departments, statutory authorities and state owned commercial enterprises (SOEs) with residual regulatory powers in the transport sector may delegate functions within the provisions of their governing legislation. Where delegations are made, the legal instruments of delegation must provide for, at least the following:

- A clear definition of the functions and activities being delegated;
- The period of delegation, which must not be indefinite, but which can be subject to extension or renewal.⁴

Evidence and Analysis

The Ministry of Infrastructure and Transport in their policy documents consisting of the Maritime and Land Transport Policy and Sector Assessment document had identified that the land transport policy and accompanying institutional responsibilities will involve some legislative change. There is also a need for a general review of land transport legislation to remove redundant and obsolete legislation, to update some older legislation and to rearrange, consolidate and reprint legislation that has undergone multiple amendments. It is envisaged that the process of legislative review will

⁴ The Maritime and Land Transport Policy, Chapter 2, Section 5.3.1, paragraph 1, p.31-32.

require inputs from a specialist or specialists in transport law and legal drafting under the oversight of MOIT, to prepare draft legislation for review by the Fiji Parliamentary Counsel and assist in obtaining the necessary passage through Cabinet and Parliament. The MOIT will have overall responsibility for managing the process.⁵

The Land Transport Act 1998 as stipulated under Section 8, specifies that the functions of the Authority are:

- a) to devise, initiate, and carry out measures for the co-ordination, improvement and economic operation of passenger transport and goods transport by road;
- b) to ensure so far as is practicable the provision of road transport passenger services adequate to meet the requirements of the public;
- c) to register vehicles, license drivers and establish standards for such registration and licensing consistent with the objectives of road safety;
- d) to develop and implement traffic management strategies and practices consistent with the needs of road users and the objectives of road safety, in conjunction with highway authorities;
- e) to develop and implement enforcement strategies in consultation with the Commissioner of Police consistent with road safety and road infrastructure protection objectives;
- f) to do anything incidental or conducive to the performance of any of the preceding functions.⁶

“There is also a need for a general review of land transport legislation to remove redundant and obsolete legislation, to update some older legislation and to rearrange, consolidate and reprint legislation that has undergone multiple amendments”

The Land Transport Authority (LTA) has a wide range of functions which includes traffic management strategies which is done in collaboration with the Fiji Roads Authority. The LTA also has responsibilities for traffic law observance with on road enforcements which is done in collaboration with the Fiji Police Force Traffic Division. Any matters of policy which require amendments to the acts or laws under the authority of LTA will be agreed after consultations with the FRA and DOT.

We noted that there is no clear demarcation of roles in the Act to commensurate with the relevant institutions and their area of expertise. For example, traffic management and surveys, heavy vehicle statistics and enforcement is managed by the Fiji Roads Authority; economic regulatory policy for road transport is the responsibility of the Department of Transport, while LTA acts as an implementing and enforcement agency.

The powers to control traffic and parking is described in section 73 of the Land Transport Act 1998. The powers mentioned in this section are shared between the LTA enforcement officers and the police. These powers include directing traffic, seizing and removing of vehicles and arresting people loitering on public streets. These powers work well with the police as it allows them to exercise their powers to arrest.

The Fiji Roads Authority Act 2012 establishes the Fiji Roads Authority and to provide for its functions and powers for the purpose of managing roads and for related matters. Part 2, Section 6 of the Act states that the Authority shall be responsible for all matters pertaining to construction, maintenance and development of roads in Fiji, including but not limited to the following:

⁵ The Maritime and Land Transport Policy, Chapter 2, Section 6.8, paragraph 1, p.49.

⁶ Land Transport Act 1998, Section 8, Part (1), pp.1.7-8.

- a) Managing (land provision, network planning, designing, constructing, maintaining, renewing and generally managing the use of) all roads;
- b) Traffic management (including road design, traffic signs and markings);
- c) Road safety (relating to provision and management of the road);
- d) The issuing of over-width, height and lengths limits;
- e) Planning and management of road survey and design;
- f) Provide advice, programme management services, design, supervision services for capital works programme; and
- g) For such other matters, as the Minister may direct.⁷

The Fiji Police Act 1965, under Part IV, section 23, Part (1) states that the duties of the force is to-

- a) regulate and control traffic;
- b) divert all or any particular kind of traffic, when it is in the public interest to do so.

The above requirement of the Act has been mainstreamed into the Maritime and Land Transport Policy, indicating that the Police Road Traffic Unit is obliged to carry out its duties in accordance with the Fiji Police Act. The policy outlines the major road traffic operations as on-road enforcement of speed limits, testing for drug and alcohol impairment and attendance at the scene of road traffic crashes and recording of crash details.

The Bicycles Act 1939 generally describes the law in terms of bicycle riding requirements, where should people ride the bicycles (i.e. not on or along any footpath or footway), bicycle registration, change of ownership, licensing, seizure of bicycles and penalty, etc.

The relevant stakeholders, through their National Transport Consultative Forum (NTCF) had considered the use of bicycles as an alternative means of transportation. This would require the installation of proper bicycle infrastructure.

Dialog between the public and private sector is needed to promote a mutual understanding of the issues, demands and constraints in the transport sector that act on the Government agencies on one hand and private businesses on the other. Existing dialog, such as the National Transport Consultative Forum (NTCF) plays a valuable role in this regard. In order to strengthen public-private sector coordination in freight transport across all modes, the DOT utilizes the forum for freight interests, transport services operators and Government to work together with the overall aim of improving the efficiency, safety, security and reliability of transport infrastructure, freight and passenger operations.⁸

The Railways Act 1976 provides for the regulation of the transportation of passengers and goods by railway. The powers are vested in the Central Traffic Authority, subsumed into the LTA. Under the Act, all railways must be licensed, and no distinction is made between railways used for public carriage on public land versus private railways on private land. The main need for regulation of railways is for traffic management where railways cross or lie within road reserves and where there is shared public road access over rail bridges owned by FSC.⁹

The relevant stakeholders in the transportation sector through the National Transport Consultative Forum (NTCF) has identified strategies to:

- Explore other potential railway network system that can connect to other transport modes for the respective corridors.

⁷ Fiji Roads Authority Act 2012, Part 2, Section 6

⁸ The Maritime and Land Transport Policy, Chapter 2, Section 5.4 paragraph 1, p.33

⁹ The Maritime and Land Transport Policy, Chapter 2, Section 6.8.5, Paragraph 1, p.50-51.

- Nationalize the railway.
- Use railway for freight, tourism and public transport.

In February 2018, at the World Sustainable Development Summit held in New Delhi, India, Fiji secured railway infrastructure development assistance from the Government of India.¹⁰

Carpool is defined as an arrangement between people to make a regular journey in a single vehicle, typically with each person taking turns to drive the others.

In the Land Transport Act 1998, under section 61 of Public Service Vehicles, it is stated that:

1. Subject to subsection (2), a motor vehicle used for the carriage of passengers for hire, reward or other consideration is deemed to be a public service vehicle for the purpose of this Act and the regulations.
2. A motor vehicle may, on an application made to the Authority, be exempted as a public service vehicle although it is being used for the carriage of passengers for hire, reward or other consideration if-
 - (a) such carriage is not the principal activity of the owner of the vehicle and the passengers are being carried in the course of that principal activity; or
 - (b) the vehicle is also being used for the carriage of goods and is carrying the owner of the goods or his employee.¹¹

According to LTA's survey in 2016, more than 75% of private vehicles along the heavily populated Suva-Nausori corridor during peak periods comprised of either the driver only or just one passenger. At that time, the survey also found that while 20 per cent of cars on the road had 2 to 3 passengers, only 2 per cent of cars on the road carried a full load of passengers. A research by LTA's Transport Planning and Statistics Department also found that carpooling one vehicle with a driver and four passengers on board is equivalent to taking at least 3 to 4 vehicles off the road. When multiplied exponentially, the potential number of vehicles off the road could be quite significant. LTA has planned to distribute more carpooling awareness pamphlets to motorists with the theme- "Carpooling- Share the Ride to Arrive on Time".¹²

Causes

While the Land Transport Act 1998 provides the mandate on traffic management in regards to irregular traffic caused by an accident, improper parking, stopping of vehicles, loading on and off of goods and passengers from carrier vehicles, it also notes that the Authority may, for the purpose of marking stands, safety zones or parking areas or for the purpose of guiding, directing or regulating traffic, place, erect or install in public streets, posts, signs, studs and other contrivances and markings on or in the surface of a public street.

However, looking at the current traffic issue which has been attributed by the increase in volume of vehicles on the roads, the Act may lack the inclusion of provision of certain measures that would help reduce traffic congestion during peak hours. These mechanisms may include restricting the times for heavy vehicles to enter and exit highways and cities during peak hours and provision of lanes dedicated to buses.

According to the Ministry of Infrastructure and Transport, the LTA has been undertaking a review of the Land Transport Act (1998) and its regulations, amendments and other subsidiary legislation.

¹⁰ 15th National Transport Consultative Forum Communique 2018, Issue No 13

¹¹ Land Transport Act 1998, Section 61, Part (1) – (3), p.22.

¹² <https://fijisun.com.fj/2017/05/27/carpooling-trials-with-to-curb-traffic-congestion/>

This review should be completed within the framework of an overall programme of review for land transport legislation. The review should also consider whether the provisions of repealed legislation, in particular the Traffic Act and its subsidiary regulations and orders have been fully and correctly taken into account in subsequent legislation.¹³

However, the Land Transport Authority confirmed in a meeting with the Auditor General's office that a review of the Act is yet to be done.¹⁴

The Bicycles Act 1939 does not specifically highlight any law on having bicycle lanes as one of the major modes of transportation for the citizens. There are no specific legislation that encourage the use of bicycles as one of the main modes of transportation.

The Maritime and Land Transport Policy highlights that the Bicycles Act 1939 provides for the identification and regulation of bicycles. It relates to their ownership and use and also to dealers and repairers. It is not clear why bicycles require special legislation, except that they are not covered under legislation dealing with motor vehicles or vehicles in general.¹⁵

The Railways Act requires the Authority to make regulations for the purpose of regulating the use of railways and the transportation of passengers and goods thereon.

If the government is to seriously consider the use of railways as a means of transportation, this needs to be incorporated by the Land Transport Authority in the Act.

Section 61 of the Land Transport Act 1998, provides for carpooling. While the Land Transport Authority is creating awareness and encouraging the citizens of Fiji to practice carpooling, it is yet to enforce the law.

Effects

Legislation review and amendment is a vital part of a policy management. If legislation is not revised when required then it will not address the current or forthcoming risks and challenges.

Good Practices

Further to the Land Transport Act 1998, LTA is also governed by Land Transport Regulations that deal with Traffic movement and other related issues. These regulations include:

- Land Transport (Vehicle Registration and Construction) Regulations 2000;
- Land Transport (Drivers) Regulations 2000;
- Land Transport (Traffic) Regulations 2000;
- Land Transport (Fees and Penalties) Regulations 2000;
- Land Transport (Photographic Detection Devices) Regulations 2000;
- Land Transport (Electronic Ticketing) Regulations 2000

Section 23 of the Fiji Police Act 1965 specifies the duties of the Force to keep order on public roads. This is further reflected in the Fiji Police Force's Strategic Plan 2015-2019 with the objective of "effective traffic control management" that emphasizes on strengthening collaboration with partner agencies to enable the free flow of traffic; promoting road safety through education,

¹³ The Maritime and Land Transport Policy, Chapter 2, Section 6.8.3, Paragraph 1, p.50.

¹⁴ Exit Meeting Minutes with LTA, dated 3/10/19, page 14.

¹⁵ The Maritime and Land Transport Policy, Chapter 2, Section 6.8.4, Paragraph 1, p.50.

innovation and targeted enforcement; embracing technology as a tool for deterring road & traffic related offenders.

Expected Benefits

The amended and updated legislation would help to:

- Combat emerging risks related to traffic congestion.
- Address new systems, tactics and technologies which would result in consistent practices.
- Help close the loop holes in the current legislation.

Recommendations

- Relevant legislation should be amended in order for it to cater for the new challenges the country is facing in terms of traffic congestion. This would be a guiding or governing tool for any new implementations or action plans being carried out. In particular:
 - The Land Transport Act 1998, to be amended so as to specify and list which traffic management strategies to be carried out by the Land Transport Authority so that there is no overlap of responsibilities with the Fiji Roads Authority.
 - The Bicycles Act 1939 to be reviewed in order to incorporate the use of bicycles as an alternative means of transportation.
 - The relevant stakeholders must also consider the use of railways as a means of transportation.

Theme 2: Stakeholder Arrangement and Engagement

Audit observation

We found that the Department of Transport (DOT) does not have formal agreements or Memorandum of Understanding (MOUs) with other agencies which have a role in traffic management like FRA, LTA, Fiji Police Force and Department of Town and Country Planning to encourage coordination and an integrated transport planning system.

Criteria

The network planning responsibilities of the DOT are at a strategic level concerned with the roles of each transport mode, their integration and interfaces, the monitoring of sector operation and development and the progress of the 20 year Transport Infrastructure Investment Plan.¹⁶

The intended functions of the DOT that led to its establishment were:

- (i) policy analysis and advice on measures to improve the performance and efficiency of the transport sector;
- (ii) strategic planning, including responsibility for implementing and updating the Fiji National Transport Sector Plan 1993;
- (iii) programme formulation and evaluation assistance to the line agencies; and

¹⁶ The Maritime and Land Transport Policy, Chapter 2, Section 5.1.5, paragraph 4, p.29.

- (iv) develop information systems and tools for transport system performance and monitoring, including a transport database and multi-modal transport modelling capability.¹⁷

Evidence and analysis

Tackling congestion requires an integrated multi-level approach and therefore a multi-level framework of planning and decision making. Such an integrated approach needs to span five broad levels encompassing:

- Operational integration of different transport network operators.
- Integration between instruments affecting different modes and between those involving infrastructure, traffic management, information and pricing.
- Policy integration between transport and land use.
- Organizational integration of government bodies and agencies with different responsibilities for transport policy; and
- Possibly organisational integration between transport and land use policies and other policy areas such as health and education.¹⁸

“Tackling congestion requires an integrated multi-level approach and therefore a multi-level framework of planning and decision making”

These require a plan that encompasses the complexities of the congestion problem. One that addresses the spatial extent of the region’s travel patterns and one that involves the relevant institutional and private actors across the urban area. A report on Managing Transport Congestion found that in order to improve the management of transport congestion, institutional changes are needed to include a stronger role for public transport, a single transport budget and common project appraisal criteria.¹⁹

Similarly, taking into consideration the above notion, the transport sector is responsible for policy, administrative, regulatory and operational services to Government, Transport Statutory Authorities, the private sector and the public at large. This will enable the enhancement and facilitation of an efficient and sustainable transportation system within the country.

Hence, in order to facilitate this, the Department of Transport was established as a means to strengthen the capability of Government to better coordinate transport planning and monitor policy and development in the transport sector and advice, strategic planning and co-ordination and investment programming assistances and overall direction of its activities is guided by inputs from external reference group comprising representative of key stakeholders in the transport sectors, primarily through the National Transport Coordinating Committee (NTCC) and National Transport Consultative Forum (NTCF).²⁰

The specific roles and responsibilities that the DOT is obligated to perform include:

- To assist Government in its goal of providing a coordinated transport system that is safe, affordable to all, efficient, cost effective and environmentally and economically sustainable.

¹⁷ The Maritime and Land Transport Policy, Chapter 2, Section 5.1.4, paragraph 6, page 28.

¹⁸ Transport Research Centre- European Conference of Ministers of Transport: Managing Urban Traffic Congestion, Section 11.1.1, and page 255.

¹⁹ Making the right choices: Options for managing transport congestion, Managing Traffic Congestion of the State Of Victoria, Australia, Section 9.2.4, pages 382-383.

²⁰ <http://www.moit.gov.fj/about-us/25-departments/department-of-transport-planning-unit/13-department-of-transport-planning-unit>

- To develop a consistent multi-modal policy and strategic planning framework for the transport sector.
- To provide professional policy analysis and advice in support of high level government decision-making.
- To monitor the status and performance of the transport system in meeting Government's objectives for the sector.
- To identify, anticipate and evaluate sector policy and planning issues.
- To monitor the effectiveness of transport plans and projects.
- To establish an integrated system of inter-modal planning and coordination, including coordination with the plans of other sectors.
- To provide standard guidelines, tools and criteria to help strengthen the process of planning and;
- To maintain a management information system and to disseminate information on the status and performance of the sector.
- To ensure that all the uneconomical routes covered under the Government Shipping Franchise Scheme and its respective ports are serviced in an effective and efficient manner.²¹

DOT confirmed to us during the audit that there were no formal agreements or MOUs between the DOT and the other agencies responsible for the transport sector.²²

Causes

With the establishment of the LTA and FRA in the land transport sector, the ability of the Department of Transport to effectively perform its intended role needs to be further strengthened. In the absence of a strong cross-sector policy and planning advice and coordination, the line agencies will tend to fill the gap from their own resources although coordination across the modes and the transport sector as a whole may be lacking.²³

The DOT is currently strengthening itself in the transport sector and is trying to establish an integrated system of inter-modal planning and coordination, including coordination with the plans of the other sectors. This is evident through its coordinated transport working group meetings held once a month for the two different transport sectors; land and maritime. However, a more coordinated approach may be needed especially in dealing with national issues such as traffic congestion in order to ensure that other transport agencies are not working in isolation.

The structure of the Transport Sector Institutions is depicted in **Appendix 1**.

The diagram shows that the Fiji Roads Authority and Land Transport Authority directly report to the Minister of Infrastructure and Transport and the reporting line does not go through the Department of Transport. Therefore, the transport agencies will have to come through the Minister to the Department of Transport as the Department takes their mandate from the Minister only.²⁴ The Department of Transport acts as advisor to the Minister and is represented in the boards of important transport stakeholders such as LTA with the exception of FRA. Thus, there may be a need for the Department to be represented in the board of FRA as the Authority is the major contributor towards road designs and networks.

²¹ Work Unit Plan – 2017/2018 (Ministry of Infrastructure and Transport – Transport Planning Unit), page 4.

²² Entry Meeting Minutes with DOT, dated 11/12/2018, page 3.

²³ Land Transport Policy, Chapter 2, Section 5.1.4, Paragraph 3 and 4, page 27

²⁴ Exit Meeting Minutes with DOT, dated 3/10/19, page 8

Effects

The absence of established formal agreements or MOUs may be a contributing factor in the weak coordination between relevant agencies which may lead to difficulty in achievement of common goals or objectives of these agencies.

Good Practices

An important role is played by coordinating and consultative committees and associations formed with representation from the public and private sector. Dialogue between the public and private sector is needed to promote a mutual understanding of the issues, demands and constraints in the transport sector that act on the Government agencies on one hand and private businesses on the other. The National Transport Consultative Forum (NTCF) had played a valuable role in this regard.

NTCF meetings have not been held as funding was not provided in the budget for the current financial year.²⁵ The Department of Transport, in consultation with other stakeholders in the transport sector, has set up Technical Working Groups in order to consult and work together with the government representatives, private sector and relevant stakeholders which allow them to discuss, address and find possible solutions regarding pressing or urgent issues affecting the land transport sector.²⁶

Review of minutes of these confirm the agenda, issues discussed, responsible agencies and the action items that are to be endorsed and implemented.²⁷

Expected Benefits

Formal agreements or MOUs will serve as a collective agreement between the relevant transport stakeholders based on the mutually agreed terms and conditions which will assist them to achieve their respective goals and objectives.

Recommendations

- The Department of Transport should work towards establishing formal agreements or MOUs between all the transport sector agencies; and
- The Department of Transport should be represented in the Board of FRA in order to provide value input in matters relating to road networks including traffic congestion

Theme 3: Policy Framework

Audit observation

The core role of the DOT includes policy analysis and advice, strategic planning, programme formulation and evaluation assistance to the transport line agencies and develop information

²⁵ Republic of Fiji Budget Estimates 2019/2020, page 247

²⁶ Exit Meeting Minutes with DOT, dated 3/10/2019, page 8

²⁷ Terms of Reference for TWG, page 4 and TWG No. 1 meeting minutes

systems and tools for transport system performance and monitoring. However, these roles may be hindered by the absence of a policy framework.

Criteria

The intended functions of the TPU, as detailed in the World Bank funded technical assistance that led to its establishment were: (i) policy analysis and advice on measures to improve the performance and efficiency of the transport sector; (ii) strategic planning, including responsibility for implementing and updating the National Transport Sector Plan 1993; (iii) programme formulation and evaluation assistance to the transport line agencies; (iv) develop information systems and tools for transport system performance and monitoring, including a transport database and multi-modal transport modelling capability.²⁸

Evidences and analysis

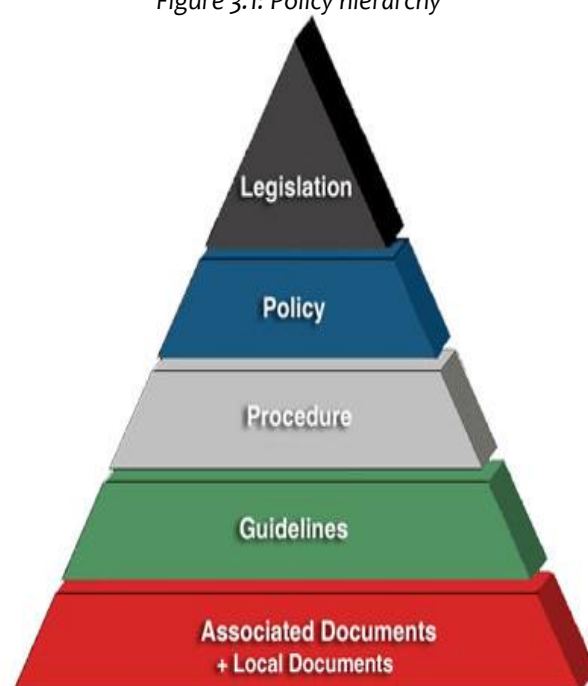
“A policy framework is needed which can guide the development of policies and procedures to ensure the documents are consistent and user friendly”

A major milestone for policy development in the transport sector was the establishment of the 1993 Fiji National Transport Sector Plan (FNTSP), which had a 20 year forward view, and was prepared on behalf of the then Ministry of Works and Transport (now known as the Ministry of Infrastructure and Transport), under the Asian Development Bank (ADB) Technical Assistance (TA) funding.

Given the current roles and responsibilities of the DOT, they do not have a policy framework which can guide the development of policies and procedures to ensure the documents are consistent and user friendly. The key elements of a policy framework are:

- Policy hierarchy (as reflected in Figure 3.1) – sets out the documentation that defines and governs the department’s activities, listed in order of precedence;
- Policy development process – sets out the requirements for creating policies, procedures, etc., including process maps and document templates; and
- Roles and responsibilities – information about who is involved in the process of developing policies and what they do as well as who has the authority to approve policies and procedures for publication and distribution.

Figure 3.1: Policy hierarchy



Source: <https://www.effectivegovernance.com.au/do-you-need-a-policy-on-policies/>

At the outset, the Maritime and Land Transport Policy recognises that the role of the Department of Transport has not been recognised in any legislative mandate. Rather, the Department’s mandate comes from the Ministry for Infrastructure and Transport, the Maritime and Land

²⁸ Maritime and Land Transport Policy, p. 27.

transport policy itself which cascades down to the operational plan which includes costs, Ministry's Strategic Development Plan (SDP), Annual Work Programme (AWP) and Business Plan (BP).

During the audit, the DOT indicated that there is a Policy Making and Review Framework. However, the Framework was not provided for our review despite numerous request made to the Department.

Apart from strategic and operational plans, the main overarching governance framework for the DOT is the Maritime and Land Transport Policy. The Policy has suggested numerous solutions for various issues.

Causes

While we acknowledge the comprehensive work done in establishing the Maritime and Land Transport Policy, it was noted that the policy lacks an implementation or action plan which would assist in the achievement of the objectives of the policy. It is note-worthy that the policy states that one of the purpose for reconstituting the NTCC was to monitor progress in the implementation of the Policy Action Plan. However, four years have lapsed and the policy action plans are yet to be developed or actioned.

Effects

The absence of a policy framework can lead to inefficient and ineffective policy making across the organisation due to the following reasons:

- Individuals discussing on issues each time they arise which may be time consuming;
- Goals of participants from different parts of the department are not congruent to the overall goal of the Ministry;
- Inconsistency and unpredictability throughout the department;
- Non-compliance with legal and other requirements; and
- Lack of quality assurance and improvement.

The absence of action plans and clear objectives to resolve major transport issues through the Maritime and Land Transport policies and forums such as the NTCC means that policies and strategies are just plans and more is needed to bring about positive changes regarding traffic congestion.

Traffic Congestion has become a major issue in recent times for the major urban centres. However, there is no specific policy or framework on transportation demand management strategies to address traffic congestion.

Good practices

The various working groups have developed Terms of Reference (TOR) for the activities that they undertake. However, regular monitoring and reporting of the work of the working groups can be improved.

Expected benefits

The rational for a policy framework is to ensure that organisational policies are established, applied, monitored and reviewed consistently and appropriately across the organisation. Such a framework will make all organisational policies subject to a formal approval process.

Recommendations

- DOT should review its Maritime and Transport Policy to incorporate implementation or action plans; and
- DOT should develop a policy or framework to guide their oversight role, including policy advice, planning, coordination and engagement with stakeholders, monitoring and evaluation of systems and processes.

Theme 4: Integrated Transport Assessment

Audit observation

We noted that there is a lack of coordination and a proper systematic approach towards ensuring that a Traffic Impact Assessment is submitted and the requirement is not by-passed by applicants for any new development or re-development.

Criteria

Integrated Transport Assessment (ITA) and management is concerned with ensuring that the traffic and transport effects of individual land use developments and wider schemes involving changes to the road network, intersections and public transport are assessed, understood and well integrated prior to implementation; also that adverse effects are anticipated and either mitigated or confirmed to be acceptable in their scale and distribution among affected parties. ITA's should be integrated with environmental and social assessments of development, and sit well within the prevailing legal and administrative framework for land use and development planning.²⁹

Evidences and analysis

The Victorian Auditor-General's Report on Managing Traffic Congestion states that as traffic congestion is influenced by urban form and its impact on demand for travel, state-wide strategic land use planning has a critical role in contributing to managing traffic congestion.³⁰

Moreover, with the responsibility for leading strategic policy, planning and improvements relating to the transport system, Victoria's Department of Transport is also required to collaborate with other agencies to ensure that policies and plans for an integrated and sustainable transport system are developed, aligned and implemented.³¹

"Land use and transport planning are inextricably linked"

To add on, the Department of Planning and Community Development (DPCD) in Victoria provides statutory and strategic guidance for planning in Victoria. As land use and transport planning are inextricably linked, it was highlighted in the report that their work in progress on the Metropolitan Planning Strategy (MPS) in the year 2013 may significantly increase future demand for travel including initiatives for managing traffic congestion. In planning the Metropolitan Planning Strategy (MPS), the Department of Planning

²⁹ The Maritime and Land Transport Policy, Chapter 2, Section 6.7.3, Paragraph 1, page 48.

³⁰ Managing Traffic Congestion: Victorian Auditor General's Report, page x.

³¹ Managing Traffic Congestion: Victorian Auditor General's Report, Section 1.3.2, Paragraph 1, page 8.

and Community Development (DPCD) must have regard to the transport system objectives when exercising powers and performing functions.³²

The Fiji Roads Authority is responsible for setting the terms of reference and approving the results and recommendations of ITAs for developments. FRA in consultation with the Department of Transport and other stakeholders such as the Department of Town and Country Planning and the municipal councils, will develop ITA policy and guidelines that apply to the new development or changes to old development. The objective of the ITA policy development will be to:

- Evaluate site access and traffic circulation, including public transport, pedestrian and cyclist facilities;
- Evaluate the ability of the roadway system to support the proposed development;
- Determine specific on-site and off-site roadway system mitigation requirements; and
- Determine the developer's share of future roadway improvements.³³

The notion of developing such a policy would be to provide the necessary qualifications on those carrying out ITAs and set out the required approval process.

The Technical Working Group (TWG) meeting held on 17 April 2019, discussed issues in relation to the Traffic Impact Assessment as follows:

1. The Nausori Town Council mentioned that the municipalities had been advised by their Minister that from this year a Traffic Impact Assessment (TIA) needs to be conducted before any commercial development gets approved. The Council highlighted that they face challenges with vehicles abandoned on the roads, the need for maintenance and upkeep of roads. They also added that LTA should be more vigilant on enforcement, which is lacking especially at the Bus Terminals.
2. The Lami Town Council added that they also face challenges at Wailada regarding enforcement, whereby the TIA has not been properly done and trailers are parked unnecessarily blocking the roads. The Chair had advised that it would be good to have discussions with the vehicle owners.
3. The representative from FRA informed that they have noted comments from the stakeholders. FRA is currently drafting their Guidelines/ Procedures and reviewing it.

During a meeting³⁴ with the Fiji Roads Authority, we were informed that for the new building being constructed in McGregor Road, FRA was not consulted for any traffic impact assessment or the proposed arrangements for the entry and exist of vehicles.

The FRA is supposed to see the traffic impact assessment before the building works commence as the FRA is responsible for road networks. Consultations should have been done with FRA as this could avoid unnecessary traffic congestion. It would become burdensome for FRA to bring quick fix solutions to curb traffic congestion in terms of upgrading road infrastructure in the case that traffic problems arise later on after the construction of these buildings.

However, the Department of Town and Country Planning had mentioned during a meeting with the audit team that the building in McGregor Road was an oversight by the former Director. The issue there was that they had to do the TIA prior to the construction but that it did not happen.

³² Managing Traffic Congestion: Victorian Auditor General's Report, Section 1.3.2, Paragraph 1, page 9.

³³ The Maritime and Land Transport Policy, Chapter 2, Section 6.7.3, Paragraph 2, page 48.

³⁴ Meeting Minutes with Fiji Roads Authority, dated 12/07/19, page 6

That was an enforcement issue that the department had but their condition was fairly straight forward for the applicant to get a transport planner provide the services of TIA and pass it to FRA.³⁵

Furthermore, the Town Planning Act for the Department of Town and Country Planning incorporates the provisions in relation to traffic which are as follows:.

- Under Part II, Section 16 of *Objects of Town Planning Schemes* – “(1) A scheme may be made, in accordance with the provisions of this Act, with respect to any land with the general object of controlling the development of the land to which such scheme applies, and of securing suitable provision for traffic, transportation, disposition of commercial, residential, and industrial areas, proper sanitary conditions, amenities and conveniences, parks, gardens and reserves, and of making suitable provision for the use of land for building or other purposes, and as more particularly set out in the Schedule. (2) With those objects such scheme may provide for planning, re-planning, pooling, redistributing, or reconstructing the whole or any part of the area comprised in the scheme”.³⁶
- Under Schedule, Part (9) of matters which may be dealt with by general provisions in a town planning scheme – “The making, fixing, and altering and ascertaining of building lines irrespective of the width or alignment of any street, road, or right of way, to secure as far as practicable, having regard to the physical features of the site and the depth of the existing subdivisions, that the distance between the buildings to be erected, or buildings likely to be reconstructed, on opposite sides of the street, road or right of way, shall not be less than that fixed by the scheme, according to the prospective traffic requirements of such street, road or right of way”.³⁷
- Under Schedule, Part II of Standard Conditions, it is stated that “(1) No development shall be carried out which creates an obstruction to the view of persons using any road used by vehicular traffic at or near any bend, corner, junction or intersection so as to be likely to cause danger to such persons”.³⁸

Causes

The Integrated Transport Assessment requires Fiji Roads Authority to work in conjunction with the Department of Transport and the Department of Town and Country Planning to carry out the traffic impact assessment before any new major development or changes to old major development takes place. However, there is no such policy or regulation which confirms that an integrated transport assessment, in terms of approving Traffic Impact Assessments (TIA), has to be carried out by the parties together. The Department of Town and Country Planning and the Fiji Roads Authority are carrying out TIAs on a case by case basis

Moreover, it was noted that the Town Planning Act does consider the fact that any infrastructure development needs a traffic flow assessment. However, it does not require that the Department of Town and Country Planning should require a Traffic Impact Assessment to be endorsed by the Fiji Roads Authority for new major developments. This may be a hindrance in trying to carry out an integrated transport assessment.

Effects

Integrated Transport Assessments and Traffic Impact Assessments helps give an insight of the impact of the development proposals on the entire transport network. Therefore, strategic land

³⁵ Exit Meeting Minutes with Department of Town and Country Planning, dated 2/10/19, page 3.

³⁶ Town Planning Act 1978, Part II, Section 16, Part (1&2), p.14.

³⁷ Town Planning Act 1978, Schedule, Sections 8 and 9, Part (9), pp.29.

³⁸ Town Planning Act 1978, Schedule, Part II, Part 1, p.55.

use planning has a critical role in contributing to managing traffic congestion. Depending on the nature and size of the proposed development, it would generate significant additional trips on connecting transport infrastructure, this additional demand may require changes to the road layout or public transport service.

Good Practices

It is a requirement by the Fiji Roads Authority (FRA) that every applicant must engage in consultation with the Authority before undertaking any works. In order for the applicants to abide by this requirement, the FRA has developed a Terms of Reference and a Checklist for the Traffic Impact Assessment. The key idea for setting up these two documentation is to assess the impacts of the development on the existing transport network and identify reasonable and practicable solutions applicable to the local experience to address these impacts.

There is no particular mention in both the Town Planning Act Chapter 139 & the Subdivision of Lands Act Chapter 140 that the Director Town & Country Planning shall obtain and take into consideration the comments of any referral agencies relating to utilities, infrastructure & transport. However, the consolidated practice at DTCP has always been to refer subdivision and building applications to the referral agencies for their comments which are then translated in the conditions of approval. The Traffic Impact Assessment (TIA) condition is imposed by DTCP on proposed major developments that are large in scale and size which are mostly commercial and industrial in nature.

Expected Benefits

An Integrated Transport and Traffic Assessment would give the Department of Town and Country Planning and the Fiji Roads Authority a comprehensive review of all the potential impacts of a proposed major development or re-development that would have on traffic. This would bring about uniformity and a greater degree of co-operation between the agencies to align their proposals and activities to mitigate any adverse consequences.

Recommendation

Relevant legislation should be amended to lay down the responsibilities of the Department of Town & Country Planning, Fiji Roads Authority and other stakeholders in relation to integrated transport and traffic assessments before a major development or re-development is approved.

Theme 5: National Transport Consultative Forum

Audit observation

Majority of the strategies listed in the NTCF has simply been brought forward from the 14th session communique (year 2016) to the 15th session communique (year 2018). There are specific themes allocated for each NTCF organized, based on which the discussions are drawn upon. And within these themes, the issue of traffic congestion has been incorporated as part of the discussion.

Criteria

The National Transport Consultative Forum (NTCF) will provide a main forum for Government-industry dialog for freight and passenger transport services with the aim of improving efficiency, safety, security and reliability of transport infrastructure and freight and passenger transport operations.³⁹

Evidences and analysis

“The NTCC would be a useful mechanism for engendering coordination across the transport sector”

The National Transport Coordinating Committee (NTCC), which was established in the past but has been in abeyance for some time, if appropriately constituted and tasked could perform this role. The NTCC would be a useful mechanism for engendering coordination across the transport sector, and would help reinforce personal relationships between agencies and help break down real or perceived barriers to communication.⁴⁰

However, in the absence of the NTCC, the Department of Transport has been organizing the National Transport Consultative Forum (NTCF) to create a platform for dialog between all the transport agencies on themes related to transport issues.

Most strategies discussed in the 14th NTCF in 2016 has been brought forward to the 15th NTCF in 2018. Refer to **Appendix 2** for details of the strategies discussed.

In a meeting with the audit team on the 3rd of September 2019, the Department of Transport reiterated that at the NTCF, there is a session held with all the stakeholders to go through the topics of discussions during the Forum. The topics are then agreed to by all stakeholders to form the communiques for the next two years. These communiques are then discussed and reviewed during the Technical Working Group meetings every month. The final session also reviews whether certain communiques need to be closed or progressed to the next two years. This final session at the NTCF is usually chaired by the PS or the DS Transport. There were around 29 issues that were highlighted, out of which only 2 issues were put to a close in the last NTCF.⁴¹ This is the reason why majority of the strategies in the communiques are brought forward to the subsequent NTCF sessions.

The Department of Transport advised the audit that sessions of the NTCC and the NTCF have currently ceased so now they solely rely on the TWG.⁴²

Causes

The meeting minutes of the TWG and the 2018 Fiji National Transport Consultative Forum Report updates the Minister on the outcomes of the NTCF. However, we noted that minutes and reports were not endorsed for confirmation.

The NTCF (which has been ceased with effect from 2019) and the TWG only discusses issues at the operational level. The discussions in the meeting are not of high level. The Department of Transport has confirmed that any operational issues discussed in the TWG is to be addressed

³⁹ The Maritime and Land Transport Policy, Chapter 2, Section 5.4, Paragraph 2, p.33.

⁴⁰ The Maritime and Land Transport Policy, Chapter 2, Section 5.1.3, Paragraph 1, p.26.

⁴¹ Exit Meeting Minutes with DOT, dated 3/10/19, page 12

⁴² Exit Meeting Minutes with DOT, dates 3/10/19, page 12

directly by the relevant stakeholders concerned. The Department does not have the power to influence operational matters of the transport sector stakeholders.⁴³

In the absence of necessary budgetary funding and the decision by the change in the leadership in the Ministry of Infrastructure and Transport the functioning of the NTCC and the NTFC was ceased.

Effects

Absence of proper endorsement reduces the authenticity of the documentation. It may not bind the agreements or resolutions passed and responsibilities assigned to participants of the working group such as those captured in meeting minutes, as this can lead to accountability not being taken up by those responsible.

Furthermore, the NTCF and TWG only focuses on issues at the operational level, and do not to address issues that may be present at the strategic level.

Good Practices

At the end of each NTCF, the participants prepare a communique based on the topics or issues highlighted in the previous NTCF communique.

It is also important to acknowledge that the NTCF is carried out once every two years and presentations of the progress of the action plans are presented to the stakeholders during TWG's and other bi-sector consultations (these are in between the 2 years of the NTCF that are placed). We were provided with the meeting minutes of the TWG's and the 2018 Fiji National Transport Consultative Forum Report to examine the progress status of the action items discussed during the forums. The minutes state the actions to be taken for issues brought up in the meetings.

Expected Benefits

Progress reports are essential in determining how the stakeholders are doing in terms of the implementation phase. It gives clarity as to what was expected from the stakeholders against what has actually being done. Thus, the progress report clarifies how much of the work has been completed and the percentage of work which is left to be done. It will act as a guide to help the stakeholders improve their performance. It sets a clear timeline of when the action items are achieved and the progress that have been made so far in achieving the action items being discussed in meetings.

Therefore, the endorsement of minutes and reports by the stakeholders helps to signify approval, acceptance and obligation. It authenticates the discussions held and agreements reached in meetings and binds the individuals (authorities present at the forums or meetings).

In our meeting with the Department, it was suggested that the NTCC could be revived. The NTCC could include Chief Executive Officers, Permanent Secretaries and heads of transport sector stakeholders and it would combat issues at the strategic level while the TWG will continue to address issues at the operational level. The issues discussed at operational level could be used to update the NTCC. Such combined effort will give a holistic approach to finding solutions related to traffic congestion and other land transport matters.

⁴³ Exit Meeting Minutes with DOT, dated 3/10/19, page 11

Recommendations

The Department of Transport should consider:

- reviving the National Transport Coordinating Committee (NTCC) so that this platform can be used by the heads of departments and ministries to discuss transport related issues relevant at a strategic level and also conduct the TWG meetings to discuss matters at operational level; and
- Including Managing Traffic Congestion especially the Transportation Demand Management in the agenda for the next NTCC meeting.

Theme 6: Increased Number of Vehicles on Fiji's Roads

Audit observation

We noted that due to the low duty concession provided on the import of vehicles, there has been a significant increase in the volume of vehicles that has contributed to the issue of traffic congestion.

Criteria

The 2030 Agenda for Sustainable Development Goal (SDG) has an objective to make cities and human settlements inclusive, safe, resilient and sustainable. By 2030, countries that adopted the Agenda must provide access to safe, affordable, accessible and sustainable transport system for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, and children, persons with disabilities and older persons.

Evidences and analysis

With the population of Fiji being widely spread out across the country, accessibility of transport is of utmost importance. However, with the intention to facilitate proper transportation for the citizens of Fiji, over the years the country has experienced certain situations.

Fiji's Seventh Development Plan 1976-1980

The publication stated that during the sixth development plan, there was a high growth rate in the number of vehicles operating in Fiji (as per below table).⁴⁴

Table 3.1: Growth of motor vehicle population 1970-1974

Year	Private cars	Taxis	Hire and Rental cars	Buses	Goods vehicles	Tractors	Motor Cycles	Total	Increase over previous year (%)
1970	8,601	1,025	356	584	3,971	1,489	574	16,060	4.19
1971	11,161	1,223	612	617	3,987	2,010	863	20,473	27.48
1972	14,234	1,261	779	776	5,571	1,925	1,000	24,770	20.99
1973	15,963	1,298	1,006	858	6,540	2,121	1,144	28,930	16.79
1974	17,347	1,323	1,179	921	7,555	2,339	1,317	31,981	10.55

⁴⁴ Fiji's Seventh Development Plan 1976-1980, Chapter 19, Section 19.35, page 142

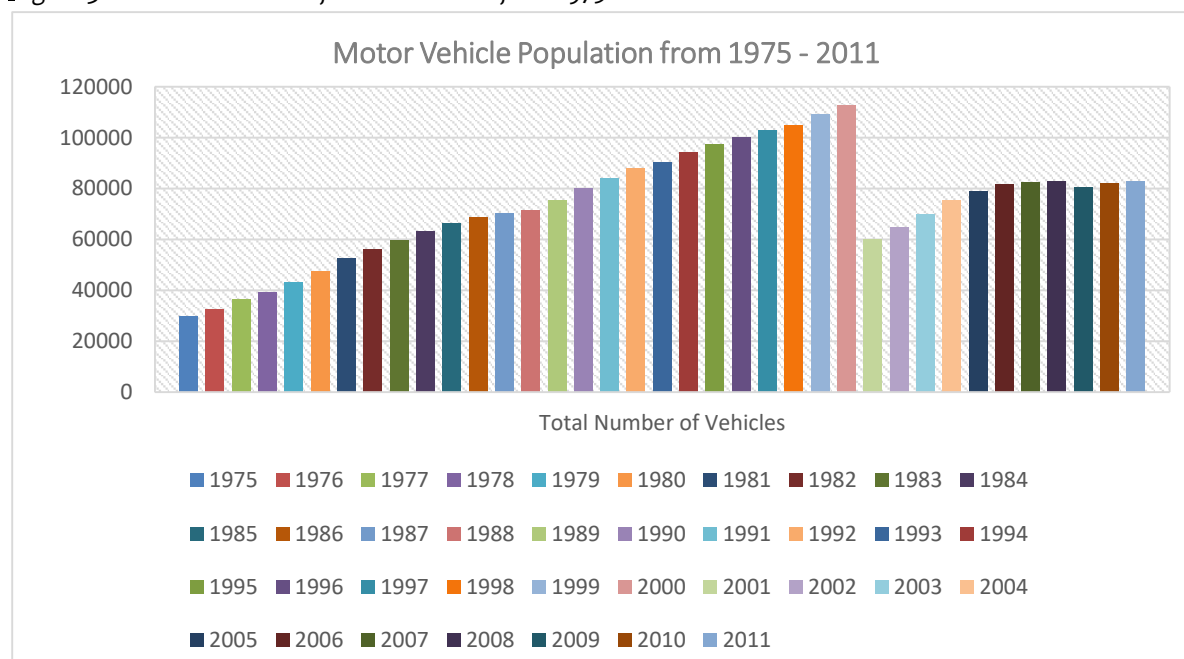
Towards the end of the Sixth Plan period the rate of growth (though still very high) declined remarkably. This was a result of the rising cost of motor vehicles to some extent, but in the main was attributable to a Government decision in April, 1974 to restrict the number of cars imported by imposing an annual quota of 1,500. In addition, it was decided at the same time to place a restriction on the importation of motor cars with engine capacities in excess of 2,000 c.c. Both these measures were introduced in response to the fuel crisis of the late 1973 and early 1974.

Government will continue to impose restrictions on the number and the size of cars which may be imported into the country. Although fuel availability is no longer a problem, its price certainly is and hence the maintenance of these restrictions will form a valuable safeguard against an excessive loss of foreign exchange through checking imports of motor spirit, as well as preventing undue congestion on Fiji's roads.⁴⁵

Motor Vehicle Statistics: 1975 – 2011

Based on the data obtained from the Fiji Bureau of Statistics, we were able to graph the vehicle population for over a 37-year period from 1975 till 2011. The statistics shows that from 1975 till 2000 there has been an increase of 281% in the vehicle population in Fiji. However, the total number of vehicles decreased by 46.78% between the years 2000 and 2001 following which there has been a gradual increase in the vehicle population by 37.81%.

Figure 3.2 Data on number of motor vehicles from 1975 - 2011



Source: Fiji Bureau of Statistics

Motor Vehicle Statistics (Land Transport Authority): 2012 vs 2018

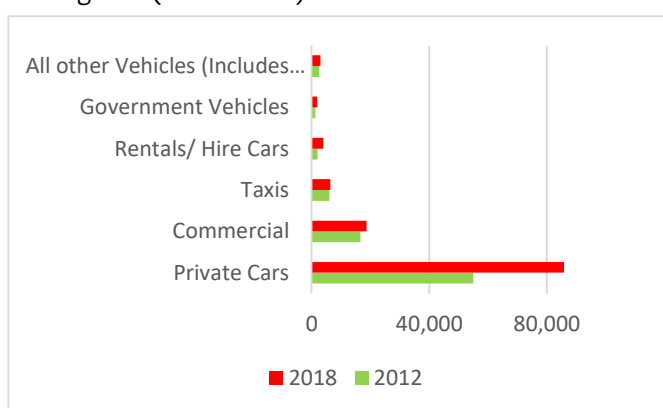
Expansion in demand capacity: Over a 7-year period from 2012 till 2018, an additional 30,923 private vehicles were registered by LTA and introduced to the road network; this is an increase by 56% in one single vehicle category.

⁴⁵ Fiji's Seventh Development Plan 1976-1980, Chapter 19, pages 142-143.

Table 3.2: Annual Distribution of Vehicles in Fiji

Road Transport			
Distribution of Vehicles Annually in Fiji	2012	2018	
Private Vehicles	54,919	85,842	
Commercial	16,646	18,681	
Taxis	6,071	6,394	
Rentals/ Hire Cars	2,096	4,040	
Government Vehicles	1,313	1,988	
All other Vehicles (Includes omnibuses, diplomats)	2,610	3,015	
Total	83,655	119,960	

Figure 3.3 Graphical presentation of the vehicle categories (2012 v 2018)



Source: LTA Website, LTA Publications, LTA Factsheet 1 – Total Vehicle Registrations Final

“There was an increase of 43% in the distribution of vehicles in Fiji annually from the year 2012 to 2018”

The above table and graph depicts an increase by 43% in the distribution of vehicles in Fiji annually from the year 2012 to 2018. Some of the factors that may have affected the percentage change are low vehicle loan interest, low motor vehicle importation duty, taxation, decreased fuel price, low car prices, reduction in duty for new parts and new engines for motor vehicles and the introduction of concessionary duty regimes for taxi and bus operators.

Fiji Revenue & Customs Services and the Fijian Government

According to Fiji Revenue & Customs Services (then named Fiji Revenue and Customs Authority) Circular no. 3 of 2017 and the Customs Tariff (Budget Amendment) Bill 2017, the following measures were introduced:

I. Motor Vehicle Items

- New parts for motor vehicles, reduction from 15% to 5%
- New engines for motor vehicles, reduction from 15% to 5%
- This is to allow the proper maintenance of vehicles with quality new spare parts which may also reduce road accidents, work to provide safer, more modern and cleaner transportation options for the Fijian community.

II. Concessionary duty regime for taxi operators

- 0% fiscal duty on the importation of new hybrid vehicles for taxi purposes
- 0% fiscal duty on the importation of used hybrid vehicles for taxi purposes is available for taxi operators who own 1 taxi
- taxi operators are also eligible for duty concession on new vehicles (normal petrol/diesel) with engine capacity **below** 2500cc at 5% Fiscal, Free Import Excise and 9% VAT
- taxi operators are also eligible for duty concession on new vehicles (normal petrol/diesel) with engine capacity **above** 2500cc at 5% Fiscal, 5% Import Excise and 9% VAT
- This initiative is to improve public service in the country.

III. Hybrid Car Batteries – reduction of fiscal duty

- The fiscal duty on hybrid batteries and hybrid battery cells has been reduced from 32% to 5%.

Further to the above, the 2018-2019 Budget highlights on the Tax Policies of the Fijian Government, the changes made to excise tax, fiscal import duty and import excise duty were effective from 28 June 2018. Below listed are the transportation tax measures taken place:

IV. *Used Motor Vehicles below 2 Years Old*

Previously, used motor vehicles attracted a 32 percent duty or a specific duty rate based on engine size, whichever was higher. In the next financial year, the percentage duty has been decreased to 15 per cent and the specific duty rate has been cut in half, importers will still pay the higher of the two amounts. This will encourage the importation and trade of newer cars, provide more competition in the vehicle market and decrease the age of cars on the road in Fiji.

V. *Public Transport*

In the 2017-2018 Budget, Government introduced concessionary duties on taxis, buses and vessels to encourage the development of public transportation in Fiji. In the 2018-2019 Budget, the public transport incentive for taxis will be extended to include used normal taxi vehicles that are less than two years old. These vehicles will attract half the subsisting rate applied on used vehicles less than two years old. All of the new and existing incentives to encourage investment in public transport, including the duty regime on taxis, buses and inter-island shipping, have been extended until June 2021.

VI. *Electric Vehicle (EV) and EV Charging Station*

- To encourage investments in EVs, Government will introduce a 55 percent capital deduction for any purchase of EV. This incentive will be available for the next 5 years.
- Currently, the income of any business setting up Electric Vehicle Charging Stations shall be exempt from tax for a period of 7 years provided the capital investment incurred in the development of electric vehicle charging stations is more than \$500,000. In the 2018-2019 financial year, Government will be reducing this minimum capital investment to \$100,000.

Department of Transport

Discussion with the Department of Transport revealed that the Scrapping Policy for vehicles is still in its draft stages.⁴⁶

The vehicle Scrapping Policy is a strategy that aims at discarding aged or inoperative vehicles in the country. The Department of Transport had described that one way the scrapping of vehicles can take place is through setting a vehicle quota and phasing out the vehicles with the registration A, B, C, D, E and F.⁴⁷

Section 113 of the Land Transport Act (1998) provides for the owner of a vehicle to advise the Authority when a vehicle is scrapped or leaves the Fiji Islands

⁴⁶ Meeting dated 11/12/18 between the Audit Office and the Transport Planning Unit

⁴⁷ Exit Meeting Minutes with DOT, dates 3/09/19, page 16

Good Practices

The Department of Transport has created a platform in the form of the National Transport Consultative Forum (NTCF) to discuss solutions for the issue on traffic congestion with other transport agencies. The output of this forum were the communiques.

The Maritime and Land Transport Policy developed by the Ministry of Infrastructure and Transport has a list of policy objectives under Chapter 2 of the Policy that discusses strategies to combat traffic congestion (Refer to **Appendix 3**).

The Ministry of Economy's *Economic and Fiscal Update Supplement to the 2019-2020 Budget Address*, confirmed strategies on implementing Environmental and Climate Adaptation Levy on Motor Vehicles and increase in fiscal duty on passenger motor vehicles in order to curb the issues of traffic congestion, road accidents and loss of time and productivity.

Causes

The reduction in the import duty of the vehicles has been a major contributor to the massive increase in the number of hybrid cars on the Fiji roads.

The scrapping policy is still in its draft stages given the number of new vehicles being imported into the country together with the lack of proper disposal mechanisms of old vehicles can lead to a massive increase in the population of the vehicles on the Fiji roads that increases the level of traffic congestion.

Effects

The high number of vehicles on Fiji's roads and absence of a Scrapping Policy has created a problem and has put pressure on roads network in Fiji resulting in the issue of traffic congestion.

Expected Benefits

The implementation of a Scrapping Policy will help to ease the increasing level of congestion. With discarding aged and inoperative vehicles in the country by setting up a vehicle import quota and phasing out the vehicles that are not in proper condition or have an aged registration will help to have a limited vehicle population in the economy that would help ease the traffic. This will allow time for the relevant authorities to implement solutions for better traffic flow. These solutions could include:

- Development and implementation of policies/strategies that encourage the use of and shift towards PSV before more vehicles are imported into the country which will contribute to more traffic congestion. PSV's such as buses and mini vans has the capacity to seat more passengers when compared to private vehicles. Therefore, with an upgraded and efficient PSV services provided, the public would opt for this transport alternative which would lead to reduced vehicle ownership that would decrease the vehicle population on road that cause traffic congestion.
- Increase wheel tax for vehicles that have aged. This strategy would make it expensive to own an old vehicle and could be a way to get them off the road.
- Development and implementation of policies/strategies that institutionalise the practice of Carpooling. Carpooling is an arrangement between people to make a regular journey in a single vehicle, typically with each person taking turns to drive the others. With one

vehicle being fully occupied for the travel, the other number of vehicles that people usually drive individually can be taken off the road which in turn eases the traffic on roads.

Recommendation

Relevant authorities should devise policies and strategies that would help implement the scrapping of aged and inoperative vehicles, encourage the use of and shift towards PSV, increase of wheel tax on aged vehicles and carpooling in order to reduce traffic congestion

Theme 7: Human Capacity to Manage Traffic Congestion

Audit observation

The transport sector is capacity-limited on several fronts, both in the Government and private sector. The most important capacity constraint is the limited number of educated, trained and experienced Fiji nationals available to take up posts at managerial level throughout the transport sector. One of the major obstacles in regard to being able to sustain the current road management is lack of suitable experienced Fiji national staff.⁴⁸

Criteria

Human resource development is vital for economic growth and improving living standards. In a small island state such as Fiji, human resource development is especially critical, given the existence of many physical and economic challenges.⁴⁹

Evidences and analysis

“In the absence of a strong cross-sector policy and planning advice and coordination the line agencies will tend to fill the gap from their own resources”

The Ministry of Infrastructure and Transport has identified that with the existence of the LTA and more recent establishment of FRA in the land transport sector, the ability of the Department of Transport to effectively perform its intended role has arguably been weakened. This may have been due to lack of resources, short-staffing, and absence of role as an approving authority in the plans and expenditures of the line agencies. In the absence of a strong cross-sector policy and planning advice and coordination, the line agencies will tend to fill the gap from their own resources although coordination across the modes and the transport sector as a whole may be lacking.⁵⁰

However, the Department of Transport has indicated that as of now, after the reform of the Ministry of Infrastructure and Transport, the department is only to handle policy and planning work.

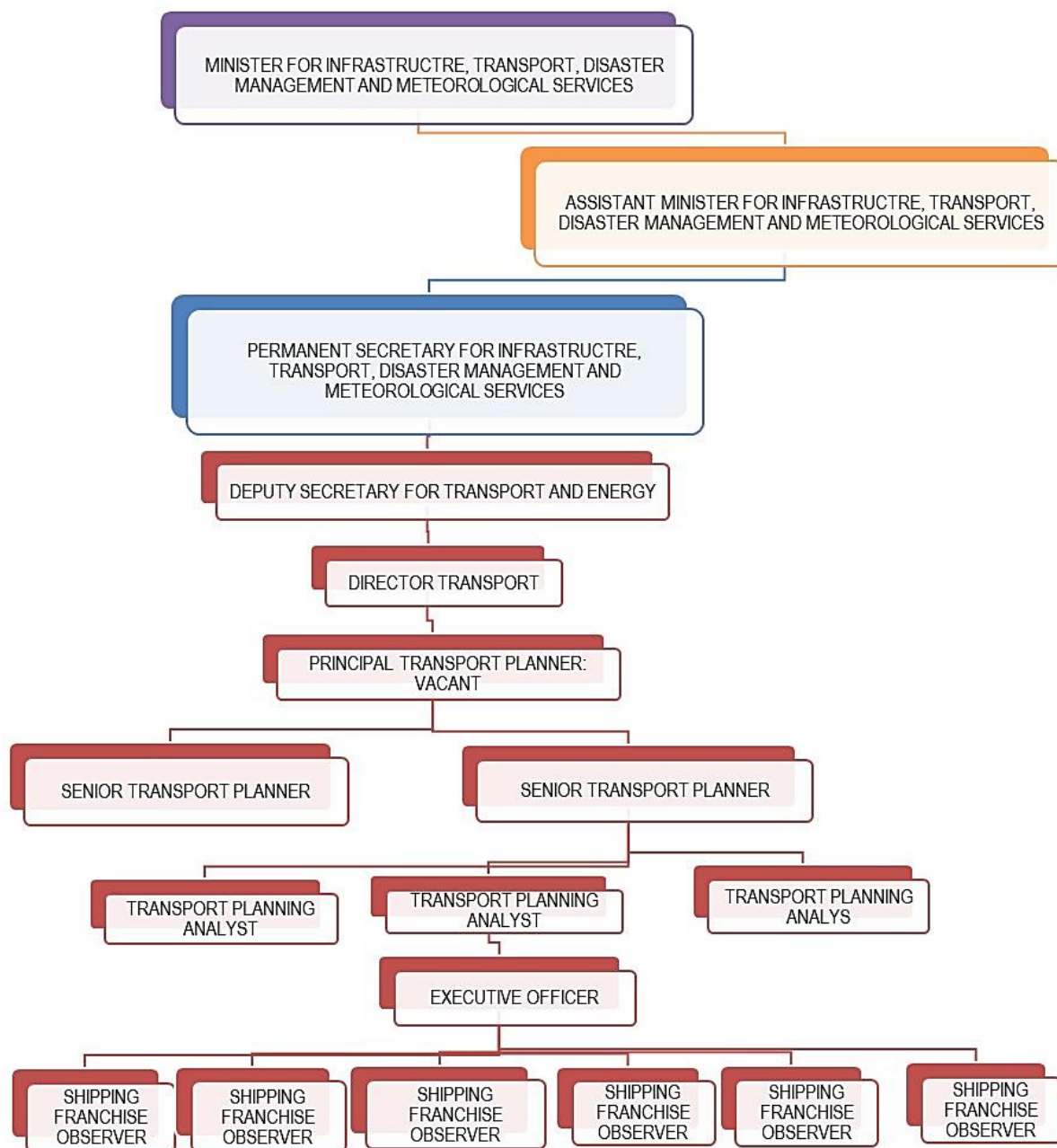
⁴⁸ The Maritime and Land Transport Policy, Chapter 2, Section 5.4, Paragraph 2, p.33

⁴⁹ National Strategic Human Resource Plan 2011-2015, Chapter 1: Introduction, Paragraph 1, page 1.

⁵⁰ The Maritime and Land Transport Policy, Chapter 2, Section 5.1.4, paragraph 3&5, p.27.

The Department of Transport's Work Unit Plan which was given for reference at the beginning of the audit, whereby under the organization structure and reporting relationship there are three positions vacant in the Land Transport section. The roles and responsibilities were shared by the Principal Transport Planner and the Senior Transport Planner from the Maritime Transport section. However, during the exit meeting the Department of Transport confirmed that the vacant positions have been filled.⁵¹ The new organisational structure indicates that the Department is placing a lot of emphasis on maritime transport.

Figure 3.4: Organisation Structure and Reporting relationships



Source: Department of Transport.

The original concept and functions for the Department of Transport are still largely valid and necessary, although the Department as presently staffed and resourced does not have the capacity to undertake them. The original design report recognized the same limitations of the

⁵¹ Exit Meeting Minutes, dated 3/10/19, page 14.

Department and that it should concentrate first upon its policy advice and sector coordination activities and make as much use as possible of the skills within the line transport agencies to help achieve its purpose.

The role of the Department of Transport within the MOIT will be strengthened through the following measures:

- The reconstitution of the NTCC, facilitated by the Department of Transport, with a lead role in inter-agency coordination and infrastructure planning.
- Strengthen the staff establishment of the Department of Transport to reflect the original intentions and scope of its activities, to include experience and qualifications in the multi-modal transport planning, transport economics and policy; this to be done through internal staff development supplemented by external training courses, staff exchanges and peer-to-peer working between the Department of Transport together with FRA and LTA and recruit new staff where necessary.⁵²

The FRA has been given traffic management responsibility, which relates to road signage, markings, traffic signals and other intersection and flow control devices.

The FRA Act also gives it responsibility for road network planning. FRA is better equipped to undertake road network planning at a more focused area level, including such matters as urban transport and traffic studies and traffic demand forecasting. The sector coordination arrangements and NTCC responsibilities discussed should allow each agency to carry out tasks best suited to its expertise and resources while maintaining close inter-agency communications.

Given the detailed network planning role lies with the FRA, it should assume the responsibility for regular traffic counting programmes and traffic surveys, including statistical and enforcement weighing of heavy vehicle axles and should equip itself and train staff for the purpose.⁵³

FRA has a mandate to employ Fiji nationals in preference to overseas staff and has instituted training programmes to raise the capacity and capability of national staff to migrate into higher level roles with the aim that all senior positions eventually be occupied by well qualified and experienced Fiji nationals. FRA also requires its contractors to preferentially employ national staff unless the qualifications and experience cannot be obtained locally and also to operate programmes of national staff development.⁵⁴

There are approximately 6% expatriate workers in FRA's combined permanent workforce of 230 staff, the remainder being Fiji nationals. However, while there is a ready supply of labour; a high turnover rate was initially experienced by these firms until a workforce who reliably presented themselves for work could be achieved. The senior national staffs are described as generally having good work skills. Expatriate workers are still in the business and leadership roles and it seems likely that, even with good training programmes, it will require at least three years' experience in these contracts before the senior staff in the national workforce will be properly equipped to move to these higher level positions.⁵⁵

The LTA has the responsibility for administering driver, vehicle and operator licensing, vehicle roadworthiness certification including vehicle testing and on-road compliance enforcement, motor vehicle dealerships and driving schools.

⁵² The Maritime and Land Transport Policy, Chapter 2, Section 5.1.4, Paragraph 7, p.28.

⁵³ The Maritime and Land Transport Policy, Chapter 2, Section 5.1.5, Paragraphs 3-5, p.29.

⁵⁴ The Maritime and Land Transport Policy, Chapter, Section 5.5, Paragraph 4, p.33.

⁵⁵ The Maritime and Land Transport Policy, Chapter 2, Section 5.5, Paragraphs 4-5, page 33.

The Land Transport Act 1998 gives a wide list of functions to the LTA, including the economic operation of road passenger and goods transport, the provision of public requirements, the development of traffic management strategies and enforcement strategies consistent with road safety and road infrastructure protection. These functions include areas of potential or actual overlap with the responsibilities of other agencies, in particular FRA. Part of the legislative work programme is to amend the LTA Act to remove areas of overlap and ambiguity. Areas where authority is able to be delegated from LTA to the FRA should instead become FRA powers within its legislation.⁵⁶

LTA has undertaken an initiative through the establishment of the National Traffic Operation Centre (TOC), to promote traffic flow and manage congestion.⁵⁷ Also, in the management structure for LTA on their website shows that there is a position of a Manager Traffic Management System.

Traffic Management is a function of FRA as part of the operations on the ground whilst the same can be said for LTA as covered by its primary legislation. There is no clear demarcation as to what aspects of traffic management separates the two entities.

The Police Road Traffic Unit is responsible for road traffic enforcement operations as required under the Police Act. Road traffic operations include on-road enforcement of speed limits, testing for drug and alcohol impairment and attendance at the scene of road traffic crashes and recording of crash details.

The Traffic Data Unit based at Nabua Police Station receives Police reports and undertakes data entry, analysis and reporting. The traffic accident database is held on a system called Micro-Computer Accident Analysis Package (MAAP) set up by the Transport Research Laboratory (TRL) of the United Kingdom. This data is then made available to FRA and LTA for accident research, black spot identification and safety improvement treatments.

We noted the following regarding the Police Road Traffic Unit:

- There was lack of capacity building as there were no training done since 2008;
- Traffic accident data system is in need of software update and new computer systems; and
- Insufficient staff resourcing, funding and equipment for road patrols.⁵⁸

The Traffic Control Division's Proactive Strategies 2018-2019, mentions that one of their strategic objectives is to ensure free flow of traffic on our roads. This strategic objective requires every Police officer on duty at respective station/community post is responsible to ensure free flow of traffic at all times during:

1. Peak hours
2. Major events/permits
3. Formal Events
4. Procession/ March
5. Escorts/Funerals

We assessed the set-up of the roles and responsibilities of the Southern Division's Traffic Control Unit. Review of Traffic Congestion Management records revealed that the Fiji Police Traffic Control

⁵⁶ The Maritime and Land Transport Policy, Chapter 2, Section 5.1.6, Paragraph 1-7, pages 29-30.

⁵⁷ The Maritime and Land Transport Authority 2016 Annual Corporate Plan, pp 21 & 43

⁵⁸ The Maritime and Land Transport Policy, Chapter 3, Section 4.1.5, Paragraph 1&2, p.15-16.

Division has a dedicated team of officers from all stations in the Southern Division who are deployed on our roads on a daily basis to ensure consistency in eliminating traffic congestions to ensure free flow of traffic and in maintaining order on public roads specially on major highways, roads and intersections, densely populated areas and accident black spot areas. This comprises of Officers from Traffic Control Units, Highway Patrol Unit and Motorcycle Unit in the Southern Division who are engaged in conducting traffic control and traffic points' duty on a daily basis during week days on school days.

Upon the scrutiny of the Southern Division Traffic Control Unit's nominal roll and duty roster for Totogo, Samabula, Nabua, Valelevu, and Nasinu stations, it was noted that the allocation of duties for the traffic officers are generalized. There are no individual work plan (IWP) for each specific traffic officer. IWP's translates the strategic objectives of an organization into specific activities and tasks to be undertaken by an employee or a team of staff over a given period.

Causes

The reason that the individual working plans, roles and responsibilities of the transport agencies is not clear and well defined may be due to the fact that the agencies are working in silos.

Effects

In the absence of a clear Individual Work Plan creates a potential or actual overlap with the responsibilities of other transport agencies. Double the resources may be employed and this can be costly for the economy. Moreover, a proper human capacity allocation in the transport agency may not be defined.

Individual Work Plans (IWP's) are aligned to the strategic objectives of an organization, whereby it breaks activities into tasks to be performed by individual staff and indicates specific resource requirements. Since there are no specific IWP's designed for individual traffic officers then the measurement of performance cannot be carried out effectively. IWP's enhances individual accountability and helps align work to what the organization is trying to achieve.

Good Practices

There is a shortage of manpower in Traffic Control Units to cater for the large number of choke points (intersections), the Administrative staffs from various station units along with officers from the Police Community Posts are deployed at strategic locations to conduct school patrols and traffic control duties for effective management of traffic congestions in respective areas of operations.

Traffic Control and Points Duty is also conducted at major road intersections during national events to enhance the safety and security of road users, VIP's and dignitaries visiting Fiji.

Traffic Congestion Operations in conducted is two phases:

- *Phase 1:*
Morning Operations – 0600hrs to 0845hrs
- *Phase 2:*
Afternoon Operations – 1630hrs to 1900hrs

Expected Benefits

A holistic view of human capacity is needed in order to clearly identify the resourcing needs to properly tackle traffic congestion from an organisational perspective. In addition to this, the different stakeholders would need to understand how they complement each other in the overall management of traffic congestion.

Recommendations

- Department of Transport should bring all the transport agencies together to form agreements or MOUs on the separate and distinct roles that each of them should be carrying out and also if there is a need for the agencies to work in conjunction with each other on transportation matters including traffic congestion.
- Proper mechanisms be put in place by the Department of Transport and Fiji Police Force to address:
 - The designing of proper individual work plans (IWP)
 - Staff retention mechanisms
 - Staff succession plan.

4.0 ADDRESSING THE TRANSPORTATION DEMAND CAUSES OF CONGESTION

Transportation Demand Management, or TDM, is a general term for strategies that increase overall system efficiency by encouraging a shift from single occupant vehicle (SOV) trips to non-SOV modes, or shifting auto trips out of peak periods.⁵⁹ It contrasts with supply-side approaches that seek to relieve congestion by supplying extra road space.⁶⁰ Today, practically every major city in North America is exploring ways to reduce reliance on single-occupancy vehicles and encourage smarter, more efficient options.⁶¹

At the surface level, TDM aims to provide information, incentives, resources, and support to people who want to make the best possible use of available transportation options. These alternatives include public transit, carpooling, vanpooling, ride sharing, walking, and cycling. Some conceptual models also include telecommuting as a TDM topic. On a deeper level, TDM is also concerned with urban design and municipal planning. Specifically, TDM strategies can be used to encourage broader engagement with transportation alternatives, and guide local residents to use them more often. At this level, key concepts include walkability indices and “complete streets,” sustainability, urban livability, and the integrated management of key transportation corridors. (RideAmigos 2019).⁶²

As traffic congestion is a product of both supply and demand factors for using the given transportation system, addressing the demand-side is essential and can be much cheaper for effectively managing it. Demand management can mitigate the need to bring forward expensive investments in road infrastructure and free up limited resources for use in higher priority areas such as public transport, where an even greater impact on congestion relief can be achieved.⁶³ Other benefits of actively managing demand for transportation include; conserving energy and reducing emissions, improving community health and fitness levels, achieving equity, boosting urban livability, solving parking problems, enhancing community safety, helping commuters based in rural areas and making alternative transportation more affordable.⁶⁴ The vision towards addressing transportation demands are also captured in the 5Year & 20Year National Development Plan.

Transportation Demand Management plays a critical role in major cities throughout the world in reducing traffic congestions.⁶⁵ In Fiji, the Ministry of Infrastructure and Transport (MOIT) established the National Transportation Consultative Forum (NTCF) which brings private and public stakeholders in the transport sector together for dialogue, consultation and discussions on freight and passenger transport services with the aim of improving efficiency, safety, security and reliability of transport infrastructure and freight and passenger transport operations.⁶⁶

“Transportation Demand Management, or TDM, is a general term for strategies that increase overall system efficiency by encouraging a shift from single occupant vehicle (SOV) trips to non-SOV modes, or shifting auto trips out of peak periods”

⁵⁹ 7 Best Practices in Transportation Demand Management, Seattle Urban Mobility Plan, 2008, p.7A-1

⁶⁰ Victoria Auditor General's report on Managing Traffic Congestion, p.31

⁶¹ <https://rideamigos.com/transportation-demand-management-tdm/>

⁶² <https://rideamigos.com/>

⁶³ Victoria Auditor General's report on Managing Traffic Congestion, p.32

⁶⁴ <https://rideamigos.com/transportation-demand-management-tdm/>

⁶⁵ Victoria Auditor General's report on Managing Traffic Congestion, p.32

⁶⁶ The Maritime and Land Transport Policy, p.31

This part of the report examines whether strategies for managing traffic congestion in the Suva - Nausori corridor adequately addresses the travel demand side factors based on the NTCF communique and the Department of Transport and relevant stakeholder's strategies.

Theme 1: Public Transport Service Improvement

Audit observation

Lack of improvement on the frequent and reliable public transport service with the capacity of meeting the needs of different groups in the community including women, children, aged and disabled persons commuting during peak periods.

We reviewed the report of the Fiji Bus Industry conducted by Orion consultant and noted the weakness in regulation and enforcement of buses of all ages.

The government priority to shift to public transport such as buses is a positive action in managing the significant increase in number of vehicle on Fiji roads. Surprisingly, from 2007 to 2017, the proportion of registered buses to total registered vehicle only account 2% when compared to private vehicle which account 74%.⁶⁷

Criteria

The 2030 Agenda for Sustainable Development Goal (SDG) had an objective to make cities and human settlements inclusive, safe, resilient and sustainable. By 2030, countries that have adopted the Agenda must provide access to safe, affordable, accessible and sustainable transport system for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women and children, persons with disabilities and older persons.⁶⁸

The 2013 Constitution of the Republic of Fiji contains the right of every person to have reasonable access to transportation. Section 34(1) stipulates that the State must take reasonable measures within its available resources to achieve the progressive realization of the right of every person to have reasonable access to transportation. It also contains provisions for non-discrimination on the basis of, amongst other criteria, age, ethnicity and gender. This indicates that the design of transport systems should be such as to be accessible and safe to use by different groups in the community including women, children, aged and disabled persons.⁶⁹

The Green Growth Framework identified the need to shift towards public transportation and non-motorised land transport, due to the significant increase in number of vehicles on Fiji roads. The proposed way forward is to explore opportunities on promoting the use of public transport for example, buses, as well as exploring the possibility of importing lower floor two-door buses and double decker buses.⁷⁰

The Fijian Government's National Development Plan (NDP) encourages feasibility studies to be undertaken to explore the viability of implementing public transport network design for an efficient and equitable public transport system. It also encourages the need to undertake feasibility studies on introducing peak period public transport zoning for high demand corridors. Additionally, the NDP also encourages promotion of the use of public transport developing better transport

⁶⁷ OAG Analysis based on FBOS and LTA Factsheet 2001-2018

⁶⁸ 2030 Agenda for Sustainable Development (Goal 11), p.26

⁶⁹ Constitution of the Republic of Fiji, Section 26&34, 2013, pp.19&24

⁷⁰ A Green Growth Framework for Fiji, p.87

management systems through Bus Rapid Transit (BRT) and carpooling; and safer vehicle standards.⁷¹

In 2009, the Land Transport Authority (LTA) contracted Orion Consulting Agencies BV to undertake a review of the Fiji Bus Industry. Orion Consulting Agencies BV is a registered private limited company from the Netherlands. The Consultants collaborated with the Land Transport Authority (LTA), Department of Transport (DOT), the Fiji Bus Operators Association (FBOA), the Consumer Council of Fiji (CCF) and other organizations. The Orion Consulting Agencies BV while consulting with many stakeholders, observed bus operations in Viti Levu and Vanua Levu, undertook passenger survey, facilitated a workshop, and prepared two draft reports and considered information and comments from several sources.⁷²

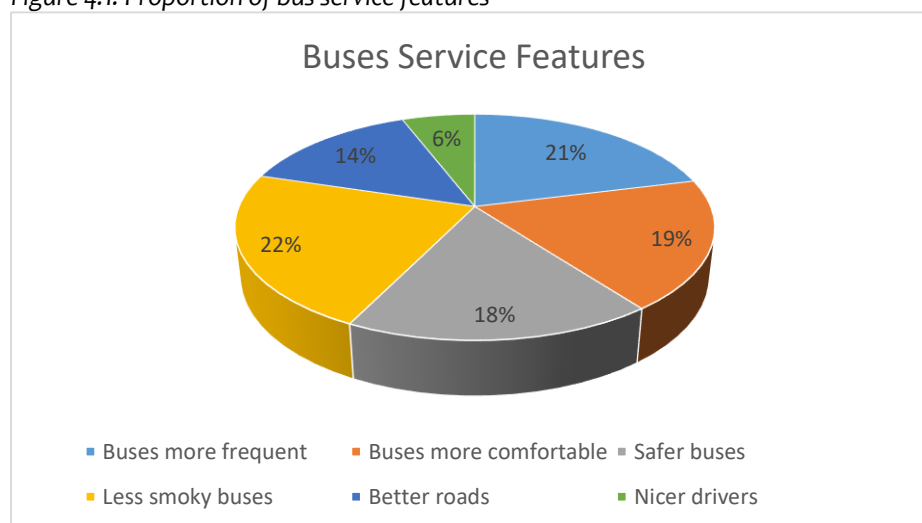
Evidence and analysis

The consultants arranged a small survey of bus passengers in order to gain further insights and understanding of bus travel in Fiji.

The survey was designed to obtain information on how people use buses. It also asked about passengers' perceptions concerning the cost of bus transport, the advantages and disadvantages of buses and alternative means of transport and on options for improving bus services.

The respondents were asked a question on what features of bus services that passengers would be prepared to pay extra fare. The charts depicted below summarized the findings from the Orion report on the bus service features.

Figure 4.1: Proportion of bus service features



Source: Analysis based on Orion report

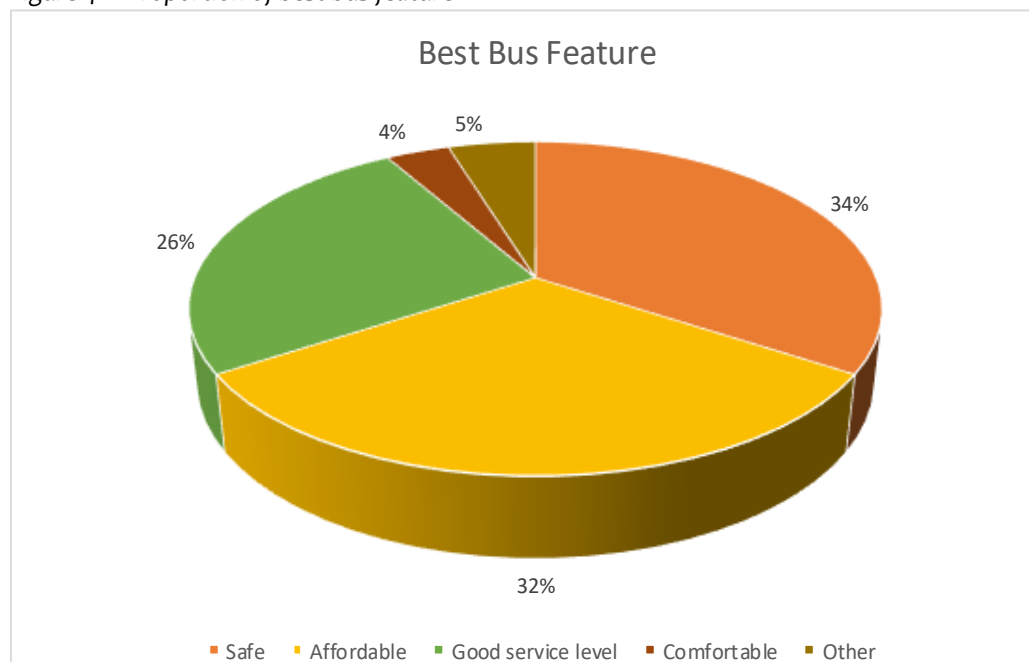
According to the responses, 22% of the bus passengers would pay extra provided there are less smoky buses, 21% of the bus passengers would pay extra provided buses are more frequent. This indicates that buses are not frequently service to community as a whole. There are 19% of bus passenger's that would pay extra provided buses are comfortable, while 18% would pay extra provided buses are safe to travel. This indicates that the condition of the bus are unsafe and not a reliable form of transportation.

⁷¹ 5 Year & 20 Year National Development Plan, Transforming Fiji, p.70

⁷² Fiji Bus Industry Review final report, 2009, p.5

Bus passengers were asked on their opinion on what is the best feature of the bus services. The chart depicted below summarize the findings of the Orion report on the best bus feature.

Figure 4.2: Proportion of best bus feature

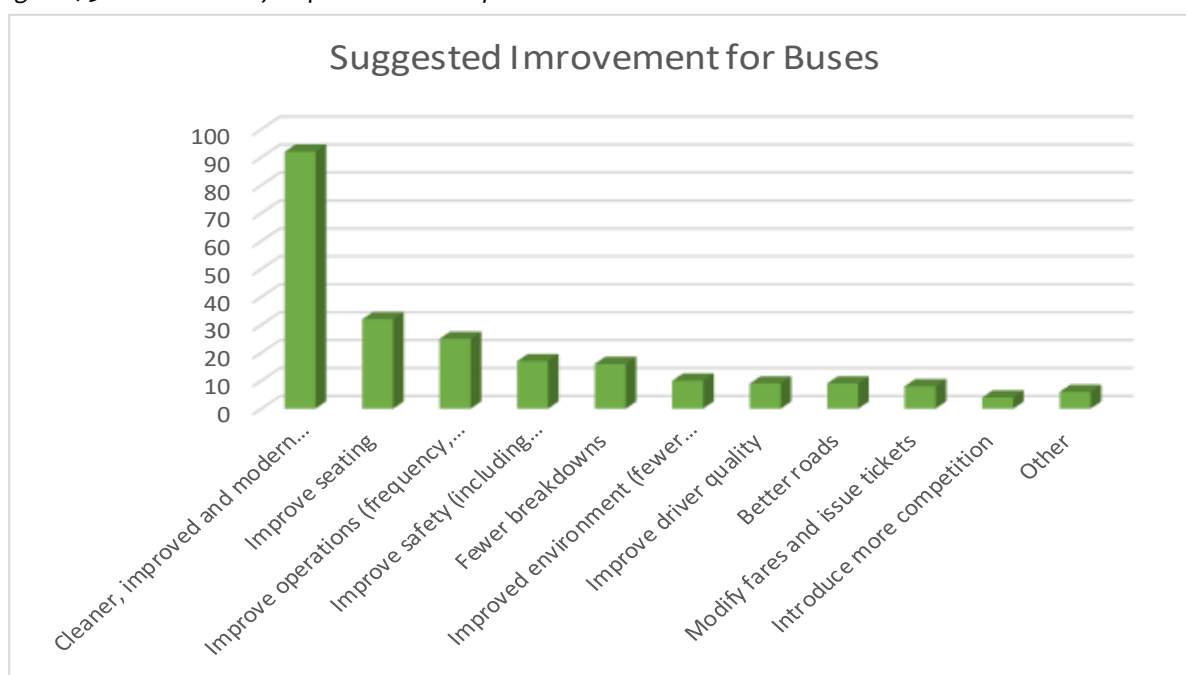


Source: Analysis based on Orion report

According to the responses, the proportion of buses with comfortable condition is 4%. This indicates that buses are not comfortable and unreliable as a form of transportation.

Further questions were asked on what improvements they would like to see on the bus services. The response are summarized on the graph below.

Figure 4.3: Distribution of response on bus improvement



Source: Analysis based on Orion report

There were 228 respondents, 92(40%) of the respondent suggested that buses needs to be cleaned, improved and modernized, while 32(14%) of the respondents suggested that buses need improve seating. This indicate that buses is not a dependable form of transport for different groups of people in the community. As a result, people will depend on private vehicle as a reliable form of transport.

The survey responses were from the bus passengers that accessed the following bus operators;

Table 4.1: Bus Operators use by the survey respondent

Operator	Number	Percentage (%)
Blueline	6	2.3
Central Transport	25	9.7
Citiline Bus Services	4	1.6
Dawasamu Transport	1	0.4
Dee Cees Bus Services	28	10.9
Dominion Transport	2	0.8
George Transport	7	2.7
Island Buses	30	11.7
Latchman Buses	1	0.4
Lodoni Transport	2	0.8
Maharaj Buses	17	6.6
Nadera Transport	1	0.4
Nairs Transport	12	4.7
Nasese Bus	9	3.5
Pacific Transport	9	3.5
Raiwaqa Buses	4	1.6
Shankar Singh Transport	4	1.6
Shore Buses	16	6.2
Sunbeam Transport	11	4.3
Sunset Express	1	0.4
Tacirua Transport	33	12.8
Taunovo Bus	8	3.1
Tebara Transport	18	7.0
Valley Buses	5	1.9
Vatukoula Express Service	1	0.4
Wainibokasi Transport	1	0.4
Westbus	1	0.4
Total	257	100.0

The report highlighted that 30% of buses are over 20 years in age. There were suggestions in the report that buses over 20 years old should be banned in the interest of safety. The Consultant agreed that unsafe and high emission vehicle should be banned but vehicle safety and age are not the same.

The study noted that buses have often been completely rebuilt and there is no evidence to suggest that buses over 20 years are intrinsically more dangerous than buses over ten years. Therefore, the report highlighted that safety is an issue for effective regulation and not vehicle age. The intention to ban buses over 20 years of age would mean the removal of 30% of the fleet.

We noted that there is low volume of registered bus compared to private vehicle. Between 2007 and 2017 census the population of bus against private vehicle are presented below;

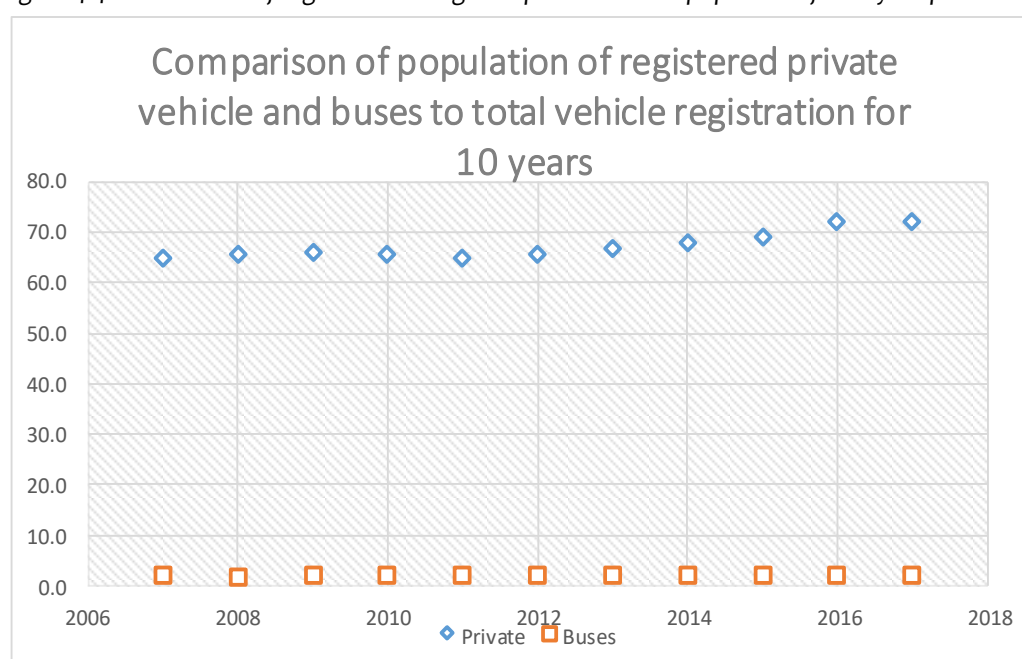
Table 4.2 Number of registered bus and private vehicle for 10 year period

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Private	53,515	54,167	53,023	53,819	53,714	54,919	59,415	64,988	69,968	79,815	84,558
Buses	1,635	1,567	1,595	1,763	1,839	1,890	1,971	2,034	2,006	2,403	2,444
Total*	82,351	82,756	80,522	81,926	82,781	83,655	89,190	95,940	101,425	110,763	117,561

*Total includes number of registered taxis, rental and hire, goods vehicle, government vehicles, carriers and all other vehicles.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Private	64%	65%	65%	65%	64%	65%	66%	67%	68%	72%	71%
Buses	1%	1%	1%	2%	2%	2%	2%	2%	1%	2%	2%

Figure 4.4: Distribution of registered bus against private vehicle population for 10-year period.

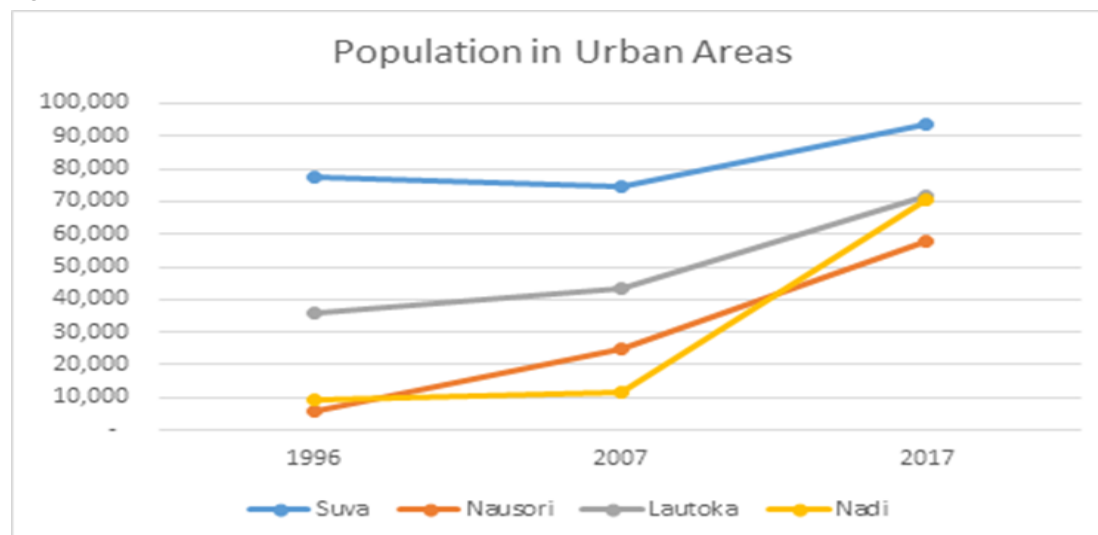


Source: Analysis based on FBOS and LTA Factsheet

The graph indicates that private motor vehicle has populated Fiji roads which account for approximately 74% of the total registered vehicle for the past 10 years. Given the government priority to shift the need to promote public transport service such as buses, it is worth noting that the proportion of registered buses only amounts to 2% of the total registered vehicle for the past 10 years.

In addition, between 1996 and 2017 census the proportion of major cities and town population have increased. Depicted below is the movement of major cities and towns population from the last 3 census.

Figure 4.5: Urban Population for the last 3 censuses.



Source: Analysis based on FBOS and LTA factsheet

Nausori Town has been recorded as the highest percentage change of recorded population between 1996 and 2017 census which is 907%. This is followed by Nadi Town which is 669%, Lautoka City 98% and Suva City 21%. The current proportion of buses recorded by Land Transport Authority (LTA) through Fiji Bureau of Statistics (FBOS) cannot meet the demand of ever growing population in the Suva and Nausori corridor.

The Household Travel Survey report of 2018 demonstrates the difference in use of each mode of transportation by area of Fiji. The report highlighted that the transport mode changes depending on the distance of the trip. The mode of travel in urban areas highlighted that buses account for majority of trips with 31%. The report also highlighted that buses and cars accounts for most trips over 5kms. This provides evidence to support the need for bus infrastructure development and strengthened regulation and enforcement of buses through active multi-agency approach.

Globally, in 2003 the Transport for London implemented public transport improvement including the introduction of around 300 extra buses that have since resulted in a marked increase in bus usage. A 2012 review of the scheme by Transport for London found that it has had a significant impact in shifting people away from using cars between 2000 and 2009.

Causes

The majority of the travellers traveling on public buses cannot afford an alternative mode of transportation thus most have no choice but to accept the services provided by bus companies. The Orion survey identified the need to improve bus services in terms of comfort, good service level and safety. Reliability of bus services to travel strictly as scheduled can also reduce passenger opting to travel by other means including hitchhiking. Aging buses is also a factor that makes bus unattractive to the travelling public in terms of comfort and safety. LTA also indicated the need to be more stringent with enforcement on both the compliance of the vehicles and licences for drivers.

While bus companies have recently been investing in some new busses, lack of improvement on depleting conditions for most in the bus fleet discourages the public from using public busses, proper planning of travel and thus tend to rely on other modes of travel including hitchhiking.

LTA focuses on improvement in policies and procedures through vehicle inspection particularly inspecting the vehicle conditions and the reliability of the service to the public in terms of applications, processes and matching the need to meet the demand.

Some of the avenues of LTA's involvement for the improvement part of the vehicle condition and services are annual bus fleet audit and vehicle inspection, roadside checks for enforcement purpose and meetings held at communities for people to raise their concern on the level of service provided to them. The Bus Operators has an important responsibility to ensure that the said improvement is realized.

The 2009 Orion report provided recommendation on the need of a joint co-operation of the bus operators in reviewing the bus industry.

The Fiji Roads Authority (FRA) revealed that the current proportion of buses cannot meet the ever growing population in the Suva and Nausori corridor and the need for coordination of the multi-agency (i.e. Ministry of Infrastructure and Transport, Land Transport Authority and Fiji Bus Operators Association) commitments to resolve this.⁷³

“The proportion of registered buses only amounts to 2% of total registered vehicles for the past 10 years. On average 30% of the busses are over 20 years in age.”

In the exit meeting⁷⁴ with the audit team, LTA revealed that the Authority does not have the bandwidth to regulate the services provided by bus operators along the Suva to Nausori corridor. The absence of technology to monitor the quality of services provided by the bus companies is a barrier to LTA to effectively regulate bus services on a high density corridor such as Suva to Nausori.

Good Practices

The Technical Working Group on road safety consultation and land transport recognised the Bus Schedule Plan (BSP) as an action item discussed during the meeting. Land Transport Authority simplified that Bus Schedule Plan is equivalent to National Journey Plan that focused on area of monitoring operation of bus service. The requirement of the said scheme will enable LTA to utilise technology to place all bus schedules into the National Journey Plan that allow the travelling public to access scheduling package which provides mapping, dynamic pricing and checking fares.

The National Journey Plan is above the e-ticketing system and makes it possible to track every single bus journey against the schedule and produce daily variance reports. This would reveal buses that are running early, buses that are late and buses that are missing when LTA monitors the operation of the bus services.

The commissioning of a second phase of the successful Household Travel Survey (HTS) is a milestones to make informed transport planning and policy decisions by the Ministry of Infrastructure and Transport which is a repeat of a successful HTS in 2015. The report provides an overview of Fiji's second nationwide HTS and present high level findings and suggestions for future phases of the HTS.

The survey report highlighted a large increase from 16% to 23% in ownership of private modes of transport between the 2015 HTS and 2018 HTS across Fiji. This provides an evidence based mechanism to support strategic transport planning, service delivery and policy development.

⁷³ FRA Matrix of Comments, p.6

⁷⁴ Exit Meeting Minutes dated 3rd October, 2019

The National Transport Consultative Forum (NTCF) exist to provide a framework for future discussions and studies and the planning of many of the suggested initiatives involving the bus industry and other modes of public transport.

The Forum would bring together a wide range of Stakeholders who might not otherwise be brought into the processes. Additionally, the Technical Working Group on Public Transport exist to initiate, monitor and evaluate the necessary follow up initiatives.

A recent development for the bus industry in Fiji was the introduction of the e-transport system with the aim of modernising bus industry.

Expected benefits

The Bus Schedule Plan (BSP) or National Journey Plan (NJP) will have benefit on the consumers, bus operators and Land Transport Authority. The bus operators will benefit in terms of revenue as the travelling public will be able to plan their journey well. As a result, this will allow the shift of single occupant vehicle to access the public transport.

Recommendation

- The Lead Agency (i.e. the Department of Transport) should ensure active coordination of multi-agency approach (Land Transport Authority, Fiji Bus Operators Association and other relevant stakeholders) to strengthen collaboration in developing the bus industry.
- The Land Transport Authority and relevant transport sector should be adequately provided with resources to support the activities on the coordination of multi-agency approach.
- The LTA regulations, policies and procedures should adequately address the issue of aging vehicles on the roads.

Theme 2: Electronic Road Pricing Initiatives

Audit Observation

The Department of Transport had identified electronic road pricing initiatives for managing congestion under the 2017/2018 Public Sector Investment Programme (PSIP). The proposal for funding electronic road pricing feasibility study was prepared by the Department of Transport. The main objective of the project is to request for experts to undertake a feasibility study and stakeholder consultation on the introduction of an Intelligent Transport System (ITS) through an Electronic Road Pricing (ERP) for land transport mode in order to control traffic congestion problems in the busy corridors. This proposal, however, still lacks support in order to be implemented.

In 2009, Fiji introduced road user levy which relates to the revenue requirements for different classes of road vehicles and is not used to apply differential pricing to forms of car use that cause congestion. For example, road pricing options and technologies by which higher charges could be levied during peak periods against single occupancy vehicles have not yet been explored or pursued.

Criteria

The 2030 Agenda for Sustainable Development Goal (SDG) has an objective to make cities and

human settlements inclusive, safe, resilient and sustainable. By 2030, countries that have adopted the Agenda must provide access to safe, affordable, accessible and sustainable transport system for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women and children, persons with disabilities and older persons.⁷⁵

The LTA's Annual Corporate Plan 2013 had identified objectives to manage congestion and one of the strategies being identified was the adoption of road pricing.⁷⁶

The Republic of Fiji's 2009 budget address titled "Raising Economic Growth and Alleviating Poverty" introduced a road user levy, differentiated by vehicle category and classification, on all vehicles. The revenue generated by this measure will be specifically set aside into an Infrastructure Rehabilitation and Development Fund to be utilized only for the purpose of road maintenance upgrading and development.⁷⁷

Evidence and analysis

The meeting⁷⁸ with Director of Transport highlighted that the Department of Transport have suggested a pilot phase on electronic road pricing. The rationale for this proposed project was to manage traffic demand through road pricing.

The Department of Transport had initiated a proposal for funding feasibility study for electronic road pricing. The proposed project would be facilitated through an expert who will undertake feasibility study in gauging the practicability of implementing ERP in Fiji. The results of the study was intended to be presented in a stakeholder consultation in order to gauge views and make practical recommendations.

A pilot scheme is also part of the key output of the consultant in training technical staff of the Department of Transport and LTA. The potential pilot site where ERP gantries could be implemented are, Edinburgh drive, Mead road, Reservoir road, Khalsa road and Laqere bridge.

The proposal paper recognized an integrated approach will be undertaken by the Department along with LTA and FRA to coordinate in the feasibility and pilot project which would require the co-operation of the private sector, transport operators, provincial administrators, municipalities, non-government organisations, farmers, villagers and general public.

The proposed project cost was FJ\$500,000 (0.5m) which includes feasibility study and pilot project. The proposal recognized the benefits of electronic road pricing as a precise tool to manage traffic congestion and international experiences shows that implementing ERP as a revenue neutral scheme will increase public acceptance. It also provides a better chance for Transport Planners in understanding the trends in driving license and vehicle availability, how people travel, why people travel, when people travel, travel by age and gender, travel by car availability, income, ethnic group, household type and accessibility. It also presents

"Electronic Road pricing system is an electronic toll collection scheme adopted to manage traffic by way of road pricing, and as a usage based taxation mechanism. In Singapore it complements certificate of entitlement (a quota license)."

⁷⁵ 2030 Agenda for Sustainable Development, p.26

⁷⁶ Land Transport Authority, Annual Corporate Plan, 2013, p.20

⁷⁷ Republic of Fiji, 2009 Budget Address "Raising Economic Growth and Alleviating Poverty", pp.24-25

⁷⁸ Dated 27th August, 2018

data to interested viewers through various factsheet such as health related travel difficulties, travel in urban and rural areas and public patronage of public buses.

The outcome of implementing the proposed ERP gantries will assist in diverging traffic into express ways through user pay principle and ascertain travel patterns, the nature of movement and economic and financial returns associated with these movements. However, the proposal for funding feasibility study for electronic road pricing initiative was not pursued as it was not supported during the budget consultation process.

The Land Transport Authority updated the 14th National Transport Consultative Forum held in 2016 that a project plan for adoption of road pricing was submitted to the Minister of Infrastructure and Transport for further consideration. The recommendation for a feasibility study through consultancy was approved by the LTA Board. A similar update was submitted in the 15th National Transport Consultative Forum held in 2018.

The 5th Technical Working Group (TWG) meeting minutes on road safety consultation and Land Transport dated 13th August, 2019 recognised Intelligent Transport System (ITS). The representatives from the Department of Transport updated the members of the TWG that the consultants from Korea are performing the feasibility study for the installation of Intelligent Transport System (ITS). The action plan is for the Ministry of Infrastructure and Transport to update the policy and distribute to stakeholders.

The system of charging for the use of the roads in Fiji relates only to the revenue requirements of different classes of road vehicle and extent of use. The aim of such system is two-fold;

- a) To recover at least part of the cost of road provision so as to become less reliant on Government budget allocation, and
- b) To bestow users with scales of charges that reflect the costs that are incurred by their usage of the roads.

The Land Transport Policy highlighted that the Road User Levy will be restructured to a more comprehensive system of road user charges (RUC). The aim of the RUC is partly to charge road users with a fee proportionate to the public costs they impose so as to influence behaviour and partly to raise revenue. The RUC will be made up of:

- I. a charge on each vehicle licensed graduated by vehicle size
- II. a charge based on heavy vehicle axle loads and
- III. a levy on automotive fuels (petrol and diesel) at the point of wholesale.

The Greater Suva Transportation Strategy Option Long List No T3.3 had considered the concept of road use charging as an option. In 2005, previous studies had considered options to undertake study on toll route between Suva and Nausori. However, this was not supported as the assessment detail specified that it was politically unpopular.

Globally, the world's first city-wide electronic road pricing system was introduced in Singapore in 1998. In 2000, the LTA in Singapore reported that morning rush hour traffic had reduced by about 16 per cent since 1998 despite an overall increase in the numbers of vehicle on the road.⁷⁹

In 2003, a congestion charge on private vehicles entering London's central city was introduced, along with an automatic number plate recognition system to monitor traffic entering the controlled area. A 2012 review of the scheme by Transport for London found that it has had a significant impact in shifting people away from using cars, with vehicle kilometres travelled in

⁷⁹ Victoria Auditor General's report, Managing Traffic congestion, p.34

central London falling by almost 19 per cent between 2000 and 2009.

Causes

The LTA revealed that lack of support to implement the proposal for electronic road pricing indicates the absence of effective policy to address the demand management strategies.

The Fiji Roads Authority during a meeting with the audit team commented that electronic road pricing initiatives is not be considered at present as it is costly to implement but may be suitable in the future.

Good Practices

The Government introduced the Road User Levy in January 2009 which marked the first step by Government through LTA to move to a system of charging for the use of roads.

We acknowledge the initiatives made by Land Transport Authority in submitting the project plan and approving the recommendation for feasibility study for adoption of road pricing, and, also the co-operation of the Department of Transport for submitting the proposal of funding the feasibility study for adoption of road pricing initiatives.

Expected benefits

For the purpose of the long term planning, having ERP gantries in place will assist in diverging traffic into express ways through user pay principle.

Short term plans will address the development of nation-wide demand management strategy through active coordination of the DOT, LTA, FRA and other relevant stakeholders.

Recommendations

- The Department of Transport in consultation with other transport agencies (such as Land Transport Authority (LTA) and Fiji Roads Authority (FRA) and other relevant stakeholders, should consider developing a nation-wide transportation demand management strategy.
- The Department of Transport as a lead agency should ensure active coordination between the Land Transport Authority, Fiji Roads Authority and other relevant stakeholders in addressing the transportation demand of road users during the peak hours of traffic.

Theme 3: Dedicated Bus Lane

Audit observation

The Fiji Roads Authority developed the Greater Suva Transportation Strategy 2015 – 2030, launched in 2014 which considers the considerable potential to influence transportation demand for road space by allocating priority lane for buses. However, it is still at an early stage and lacks a comprehensive implementation strategy to fully leverage its potential to better manage congestion across the road network.

Criteria

Service industries involved in the transportation of goods and passengers could benefit from greater government investment in modern traffic management software and equipment, as well as dedicated bus and truck lanes.⁸⁰

The Greater Suva Transportation Strategy (GSTS) is a transport blueprint for the Greater Suva Area over the next 15 years. It replaces the 2001 Strategy and has been prepared over six months with extensive input from wide range of Stakeholders and the Fiji Roads Authority.⁸¹

“Dedicated bus lanes or bus only lanes is a lane restricted to buses, often on certain days and times, and generally used to speed up public transport that would otherwise be held up by traffic congestion. Bus lanes are a key component of a high quality Bus Rapid Transit (BRT) network, improving bus travel speeds and reliability by reducing delay caused by other traffic.”

Evidence and analysis

The GSTS was developed by the FRA and it was prepared by Predicting Consulting, GTA Consultants, and Scope Pacific Limited, launched in August 2014. The report has been endorsed by the following stakeholders;

- Ministry of Local Government, Urban Development, Housing & Environment
- Fiji Police Force
- Housing Authority Of Fiji
- Nausori Town Council
- Nasinu Town Council

Other stakeholders that were involved in the development of the strategy included;

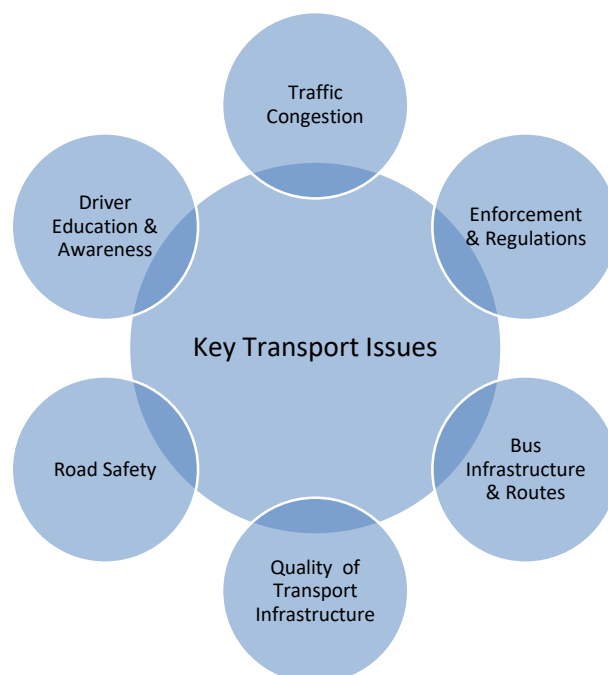
- Land Transport Authority
- Lami Town Council
- Ministry of Strategic Planning, National Development and Statistics
- Ministry of Works, Transport & Public Utilities
- Suva City Council

The Strategy identified six (6) key issues as illustrated in Figure 4.6.

⁸⁰ 5 Year & 20 Year National Development Plan, Transforming Fiji, pp.8-9

⁸¹ Fiji Roads Authority, Greater Suva Transportation Strategy Final report, p.1

Figure 4.6: Key Transport Issues in Greater Suva Area



Source: Greater Suva Transportation Strategy 2015- 2030, p.9

There were seven (7) key programs identified in the strategy. These are dedicated bus lane, improved bus terminals, linked traffic signals, improved pedestrian safety, enforcement, intersection upgrades and planning. Of the seven (7) key programs, Dedicated Bus Lanes is the first programs identified in the strategy.

The Fiji Roads Authority have identified areas such as the Kings Road and Grantham Road as a pilot phase for dedicated bus lanes. This exercise will be followed by investigating other suitable roads for trial of dedicated bus lane. Dedicated bus lanes or bus only lanes is a lane restricted to buses, often on certain days and times, and generally used to speed up public transport that would otherwise be held up by traffic congestion. Bus lanes are a key component of a high quality bus rapid transit (BRT) network, improving bus travel speeds and reliability by reducing delay caused by other traffic.

The Kings Road dedicated bus lane project was identified as one of the proposed short term action (2015 – 2019) by the Greater Suva Transportation Strategy (GSTS) Action Plan. The project have been categorized as 2015 High Priority A – as this options offer the highest value for money and achievable in the short to medium term.

“Bus rapid transit (BRT), also called a busway or transitway, is a bus-based public transport system designed to improve capacity and reliability relative to a conventional bus system. Typically, a BRT system includes roadways that are dedicated to buses, and gives priority to buses at intersections where buses may interact with other traffic; alongside design features to reduce delays caused by passengers boarding or leaving buses, or purchasing fares. BRT aims to combine the capacity and speed of a metro with the flexibility, lower cost and simplicity of a bus system. (Wikipedia 29/10/19)”

Detail of the Action plans are tabulated below.

Table 4.3: Detail of proposed short and medium term action

Option No	Project	Action	Ownership
2015 High Priority Project			
B12.1	Kings Road dedicated bus lanes	Conduct feasibility into bus lanes along Kings Road from Nausori to Samabula. Design and construction to follow.	FRA / LTA
Proposed medium term actions (2020 – 2024) Project			
B12.2, B12.3	Dedicated bus lanes	Plan, design and construct dedicated bus lanes along Grantham Rd. Investigate options for further locations, including Fletcher Rd, Rewa St, Laucala Bay Rd, Ratu Dovi Rd, Bau St, Queens Rd, Princes Rd and Victoria Parade.	FRA / LTA

In a statement made by the Fiji Roads Authority CEO on 20 February 2019 in the local media, it was mentioned that “plans are underway to trial a dedicated bus lane between the Suva to Nausori corridor in the next 18 months”.

The Land Transport Authority updated the 14th National Transport Consultative Forum held in 2016 that the concept for adopting priority lane for buses has been vetted by them and that FRA has included this in the road development plans commencing on the Suva to Nausori corridor. A similar update was submitted in the 15th National Transport Consultative Forum held in 2018.

Causes

The lack of comprehensive implementation strategy on dedicated bus lane option is due to the fact that the transport sector agencies such as DOT, LTA, FRA, Fiji Police Force and other stakeholders have own lines of reporting and mandate and there is an absence of active coordination to address the demand cause of congestion.

The FRA had mentioned that for a dedicated bus lane to be implanted the route needs to have at least two lane capacity which the Authority is currently considering.

The FRA further reiterates that the relevant enforcement agency such as LTA must have in place suitable enforcement programmes before the initiative on the implementation of the dedicated bus lane is to be carried out.

Good Practices

The development of the Greater Suva Transportation Strategy (GSTS) by Fiji Roads Authority with the co-operation of relevant transport sector agencies and other stakeholders had identified that dedicated lane for buses is of high priority.

The FRA commenced a weekly executive level meeting with the LTA where discussions focused on issues such as dedicated bus lanes. As noted by the FRA CEO, dedicated bus lanes will be introduced initially in the Nausori to Suva Kings Road Arterial Route as soon as the S3 (Suva Arterial Road Upgrading Project 3) four lane project is completed. This project infrastructure has been completed by end of July 2019 but is yet to be implemented.

Fiji Roads Authority (FRA) is already working with Land Transport Authority (LTA) and will collaborate with Department of Transport Planning Unit to develop a coherent strategy for the roll out of the dedicated bus lane initiative and will include all key stakeholders in the process.

Expected benefit

Implementing a dedicated bus lane will encourage the shift of the demand of road users from single occupant vehicle to public transport such as buses as this could reduce travelling time.

Recommendations

- The Department of Transport should develop and regularly updates, in consultation with other transport agencies (i.e. Fiji Roads Authority, Land Transport Authority etc.) a nationwide transportation demand management strategy.
- The Department of Transport as a lead agency should ensure active coordination between Fiji Roads Authority, Land Transport Authority and Ministry of Local Government, Fiji Bus Operators Association and other relevant transport stakeholders in addressing the dedicated bus lane strategy to manage transportation demand of road users during peak hours of traffic.

Theme 4: Carpooling

Audit observation

The Land Transport Authority had initiated the planning stage through conducting carpooling survey. However, this initiatives lacks a comprehensive implementation strategy to fully leverage its potential to better manage congestion across the road network.

Criteria

The Fiji Government's National Development Plan (NDP) addresses the nation's commitment on access to transportation through an efficient and sustainable transport network. The plan's intention is to have a policy that ensures a safe, efficient (including reducing traffic congestion), and affordable transportation services. Adopting better transport management systems through carpooling is one of the strategy highlighted in the NDP.⁸²

The Green Growth Framework identified the need to shift towards public transportation and non-motorised land transport, due to the significant increase in number of vehicles on Fiji's roads. The proposed way forward is to explore opportunities on encouraging carpooling schemes.⁸³

"Carpooling (also car-sharing, ride-sharing and lift-sharing) is the sharing of car journeys so that more than one person travels in a car, and prevents the need for others to have to drive to a location themselves. By having more people using one vehicle, carpooling reduces each person's travel costs such as: fuel costs, tolls, and the stress of driving"

In 2016, the Land Transport Authority conducted an independent study on the carpooling project. The objective of the study was to determine the number of private vehicles that are currently travelling during the peak hours with no passenger, 1 passenger, 2-3 passengers and full load. The results of the survey was used to determine the percentage of the private vehicle population which could be potentially utilized for carpooling purposes.⁸⁴

⁸² 5 Year and 20 Year National Development Plan, p.70

⁸³ A Green Growth Framework for Fiji, p.87

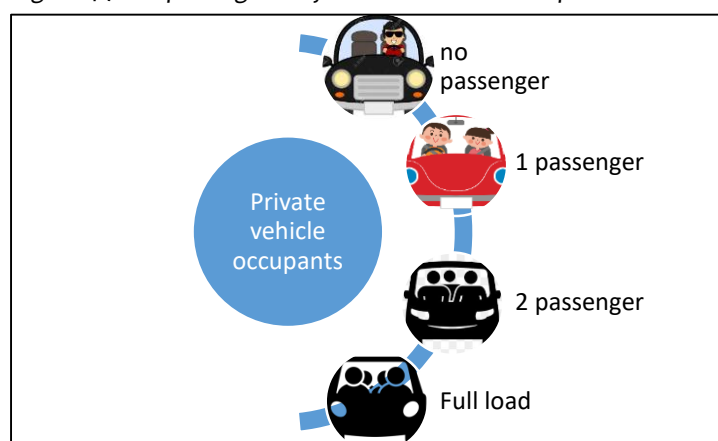
⁸⁴ Land Transport Authority of Fiji, Carpooling Project to mitigate traffic congestion, p.1

Evidence and analysis

Carpooling (also car-sharing, ride-sharing and lift-sharing) is the sharing of car journeys so that more than one person travels in a car, and prevents the need for others to have to drive to a location themselves. By having more people using one vehicle, carpooling reduces each person's travel costs such as: fuel costs, tolls, and the stress of driving.⁸⁵

In 2016, the Land Transport Authority conducted carpooling survey along the Suva – Nausori corridor. The survey time started at 6.30am to 8.00am as the said time is suitable to capture the data when traffic was slow moving. The objective of the survey was to determine the number of private vehicles that are commuting during peak hours with the following occupants in Figure 4.7.

Figure 4.7: Carpooling survey - Private vehicle occupants

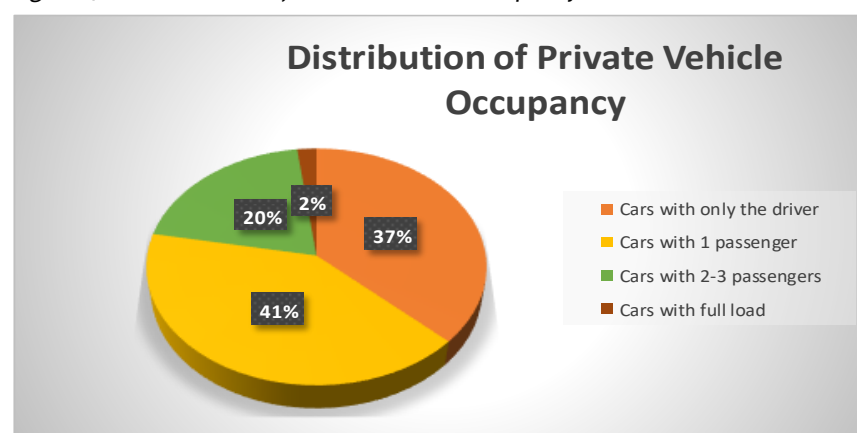


Source: OAG Analysis based on the LTA Carpooling report

The survey noted that the highest percentage, or approximately 75 %of vehicles commuting during critical time are private vehicles. This is closely followed by taxi and buses with 17% and 8% respectively.

Specifically, the average count for private vehicles noted that more than 75% commuting during critical time consist of either the driver only or one passenger. The distribution of private vehicle occupancy during critical time are illustrated below.

Figure 4.8: Distribution of Private Vehicle Occupancy



Source: OAG Analysis based on the LTA carpooling report

⁸⁵ [Carpool - Wikipedia](#); definition by Wikipedia

While 20% of private vehicles on the road carrying 2 – 3 passengers, there are only 2% of private vehicle commuting on the road with full load of passengers during peak periods. The findings indicate that there is a considerable potential for carpooling as there are a lot of private vehicles commuting during critical times with less than 2 passengers.

The observation of the carpooling survey report did not identify the originating journey to the final destination of a driver and passengers travelling in a private vehicle during critical times. This will establish the potential volume of growth trips originating from growth location of Suva-Nausori corridor and provides an opportunity to target carpooling programs where there are strong inherent incentives for participation.

Furthermore, the Fiji National Transport Planning Database report highlighted that urban areas have consistently lower private vehicle occupancy which indicates that there is more car space that have the potential for carpooling. The report further highlighted that 54% of work trips in urban areas have only one driver in the vehicle without any passengers. However, the study failed to identify specific urban locations to establish the largest pool of private vehicle drivers that will provide opportunities for carpool programs.

In 2006, the city of Alameda California adopted Travel Choice program to reduce driving and congestion while promoting healthy physical activity. Travel Choice used targeted outreach tactics to connect interested residents with information and incentives to add more walking, bicycle riding, public transit, and carpooling into their daily routines.⁸⁶ The result indicated that drive-alone trips were reduced 14%, primarily due to a 34% increase in transit usage and a 5% increase in carpooling.

Causes

The lack of a comprehensive implementation strategy on carpooling option is due to the fact that the transport sector agencies such as DOT, LTA, FRA, Fiji Police Force and other stakeholders have their own lines of reporting and mandate and there is an absence of active coordination to address the demand cause of congestion.

According to LTA, the carpooling survey was conducted with the aim of identifying baseline data on the current situation of traffic congestion. The rationale behind identifying baseline data was due to the absence of data to measure the factors that pertain to traffic during critical times.

The LTA had conducted a carpooling awareness initiative with the theme “Share the Ride to arrive on Time” by distributing flyers to schools, LTA Offices and stakeholders to promote ride share as an outcome of carrying out the carpooling survey.

In an exit meeting⁸⁷ with LTA, it was revealed that carpooling was a suggestion originally considered by LTA. However, with the benefit of mature reflection, carpooling is not the best ideal technique to manage traffic congestion. This is because of the cultural significance, safety, absence of technology and incentive that creates a barrier to encourage the desire of the single occupant vehicle to carpool.

The Department of Transport revealed that the provisions of carpooling is stipulated under Section 61 of the LTA Act. The enforcement of the carpooling provision has never been implemented as this has linked with the concept of PSV (Public Service Vehicle). Section 61 of the LTA Act specified that the Authority has to issue a license for carpooling and so the principal economic activity of the

⁸⁶ 7 Best Practices in Transportation Demand Management. January 2008, p. 7C-3

⁸⁷ Dated 03/10/2019

carpooling permit holder is not the receipt of fare but has to be some other form of income other than permanent employment.

The Fiji Roads Authority commented that carpooling is another great initiative that can assist in congestion reduction. However, like bus lanes, there needs to be a complete solution implemented including enforcement by LTA. This should be coordinated by the Department of Transport.⁸⁸

Good Practises

The commissioning of the second phase of the successful Household Travel Survey (HTS) is a platform to make informed transport planning and policy decisions by the Ministry of Infrastructure and Transport, a repeat of the successful HTS in 2015. The report provides an overview of Fiji's second nationwide Household Travel Survey (HTS) and present high level findings and suggestions for future phases of the HTS.

The Household Travel Survey (HTS) 2018 report highlighted the average private vehicle occupancy by area. The report stated that across Fiji, 35% of all car trips have only the driver in the vehicle (single occupant vehicle trips). The work trips alone in urban areas increases to 67% compared to 54% in 2015 HTS survey. Equivalently, two thirds of work trips made by car are not carrying any passengers. The average vehicle occupancy remain stable in urban area (2.4) which is very high compared to developed countries.

Based on the HTS report, the Department of Transport commented on the need to change the behaviour of people shifting from private vehicle to public transport is the way forward for the Department through active multi-agency coordination approach.

Expected benefit

Carpooling has not been well adapted by the traveling public in Fiji although a lot of travelling public hitch-hike for travel and registered public carriers have complained about taxis and private cars collecting passenger and fare for the service they rendered. Discussions with LTA revealed that this happens mainly when there is unreliable public bus services where buses do not travel on scheduled times where all rush to pick passengers at one time and leave other times un-serviced.

An alternative proposed by LTA to carpooling is to encourage commuters to opt for the park and ride scheme. This is a system for reducing urban traffic congestion, in which drivers leave their cars in parking lots on the outskirts of a city and travel to the city centre on scheduled public buses, carpooling or vanpooling.

The park and ride scheme requires effective and efficient monitoring strategy such as accessible sites, security including CCTV and reliability of the bus services to travel on scheduled times. The scheme also provides an opportunity for Private Public Partnership (PPP) where the developer provides a secured parking space for free but charges a slight higher bus fare going into the city centre. This scheme involves identification and approval for suitable parking spaces thus will requires active coordination of the multi-agency approach between the Department of Transport, Land Transport Authority (LTA), Fiji Roads Authority (FRA) and Ministry of Local Government.

⁸⁸ FRA matrix of comments, p.6

Recommendations

- The Department of Transport should develop and regularly update a nationwide Transportation demand management strategy in consultation with other transport agencies (such as the Land Transport Authority, Fiji Roads Authority and Ministry of Local Government).
- Resources should be adequately available to support the coordination of the multi-agency approach in identifying activities that manage the transportation demand of road users during peak hours of traffic.
- The transport sector (i.e. the Department of Transport, Land Transport Authority, Fiji Roads Authority, Ministry of Local Government and other relevant stakeholders) should ensure active co-ordination on the strategy of managing the demand of road users during peak hours of traffic.
- The concept of ‘Park and Ride’ could be trialled by government or promoted for private sector investment opportunity (PPP).

Theme 5: Cycling & Pedestrian

Audit observation

The transport stakeholders and in particular the land transport sector has identified some active low cost and environmentally friendly forms of transport such as cycling and walking. However, these initiatives lacks a comprehensive implementation strategy to fully realise its impact in reducing people’s dependency on cars and thus directly having an impact in managing congestion.

Criteria

The Green Growth Framework identified the need to shift towards public transportation and non-motorised land transport, due to the significant increase in number of vehicles on Fiji’s roads. The short term (2 years) proposed way forward is to explore opportunities on cycling lanes in major urban areas. Medium term (3 to 5 years) proposed way forward is to promote cycling and establishment of cycle paths in urban areas, as well as public and private sector participation in cycle to work schemes.⁸⁹

The Transport Policy encourages the use of more energy-efficient transport modes such as public transport and an active mode of cycling and walking.⁹⁰

Evidence and analysis

A review of the Greater Suva Transportation Strategy highlighted that the current pedestrian facilities in the Greater Suva Area are limited to some major roads and do not offer a suitable level of service to support walking as a safe mode of travel. As a result, pedestrians often walk on the edge of the road which increases their exposures of being struck by vehicles. The record of pedestrian related traffic accidents compiled by the Fiji Police Force in 2011 is detailed below.

⁸⁹ A Green Growth Framework for Fiji, p.87

⁹⁰ Land Transport Policy, p.6

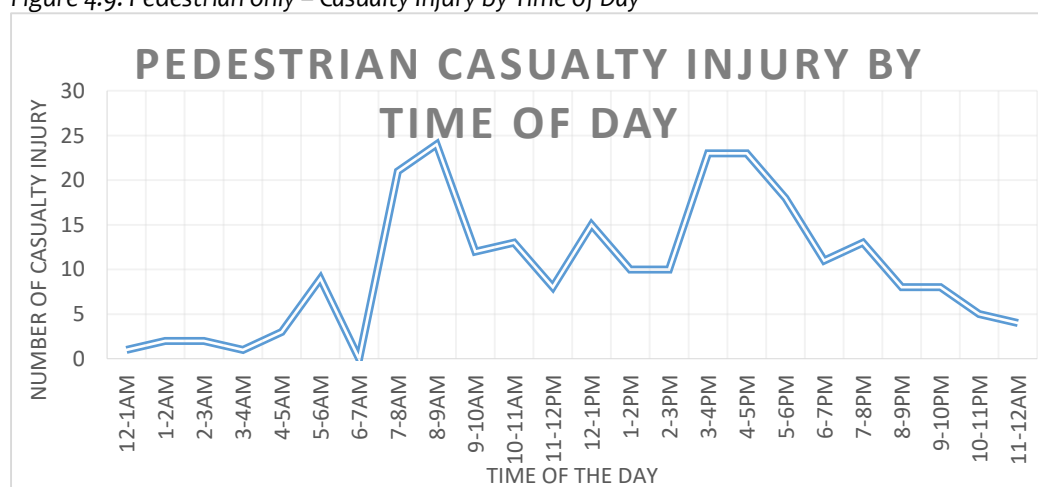
Table 4.4: Pedestrian related traffic accident

Time of the Day	Casualty Injury			Total
	Fatal	Hospital	Injury	
12-1AM	0	1	0	1
1-2AM	1	0	1	2
2-3AM	0	1	1	2
3-4AM	0	1	0	1
4-5AM	3	0	0	3
5-6AM	0	2	7	9
6-7AM	0	0	0	0
7-8AM	3	5	13	21
8-9AM	1	10	13	24
9-10AM	1	5	6	12
10-11AM	0	3	10	13
11-12PM	0	3	5	8
12-1PM	1	4	10	15
1-2PM	0	5	5	10
2-3PM	1	4	5	10
3-4PM	0	10	13	23
4-5PM	1	9	13	23
5-6PM	2	4	12	18
6-7PM	2	2	7	11
7-8PM	1	2	10	13
8-9PM	0	2	6	8
9-10PM	1	3	4	8
10-11PM	0	3	2	5
11-12AM	1	1	2	4
Total	19	80	145	244

Source: Fiji Police Force, Road Traffic Accident Annual Report, Traffic Control Division, 2011

The Road Traffic Accident Report in Fiji for 2011, noted that the highest number of pedestrians casualties recorded at one time occurred between 8am – 9am. We further noted that 18.4% of pedestrian's casualties occurred during morning peak hours from 6AM-9AM while 40.2% of pedestrian casualties occurred during afternoon peak hours from 2.30PM to 8PM. Between 7am and 7pm, a total of 188 pedestrian accidents were reported (77%). The highest pedestrian fatalities at any one time, was recorded between 4am-5am and 7am-8am. Refer to Figure 4.9 below for trend of pedestrian casualty injury by time of day.

Figure 4.9: Pedestrian only – Casualty Injury by Time of Day



Source: OAG Analysis based on the Fiji Police Force road traffic accident annual report 2011

There are currently no provisions for cycling, and bicycles on Fiji Roads. People mainly cycle as a recreational activity but occasionally commute within the urban areas.

Fiji has a Bicycles Act that focuses on the registration, licensing and usage of bicycles. However, not much is being done to promote bicycles as a forms of transportation.

The Household Travel Survey report 2018 demonstrated the difference in use of each mode of transport by area of Fiji. The report highlighted that the mode of transportation used changes depending on the distance of the trip. The mode of travel in urban areas highlighted that walking accounts for the second most popular form of trips with 30%. This provides evidence to support the promotion of safe infrastructure development for walking and strengthened policy development concerning pedestrians through active coordination of multi-agency approach.

As a deliberate transportation strategy, Vancouver increased housing capacity in the downtown area to reduce commuting times and congestion, in what became known as the “living-first strategy”. From 1991 to 2002, the number of residents living downtown increased by 62%, to 76,000, but car trips into downtown remained essentially constant. In 1994, walking and cycling trips made up 20% of all daily trips into the downtown and together made up the third-highest used mode behind auto and transit trips. By 1999, walking and cycling trips made up 35% of all daily trips and are now the most frequently used mode.⁹¹

Causes

The lack of a comprehensive implementation strategy for cycling and pedestrian options is due to the fact that the transport sector agencies such as DOT, LTA, FRA, Fiji Police Force and other stakeholders have their own lines of reporting and mandate and there is an absence of active coordination to address the demand cause of congestion.

The LTA highlighted through discussion during the audit that this is due to the absence of effective policy to address the demand management strategies and the lack of planning on the land use or road efficiency.

The FRA commented that the first dedicated bicycle lanes in Fiji will be constructed within the S3 project as well as along Ratu Sukuna, Queen Elizabeth Drive and Laucala Bay Road. This will depend on the success of this programme, and further bicycle lanes are planned where spaces in the road reserves allows. Location will be determined following consultations with the LTA, Fiji Police Force and other key stakeholders.

Furthermore, the FRA is implementing the first bicycle lanes and is also undertaking a significant programme of works to construct pedestrian footpaths across Fiji. This section does not comment on the underlying cause of fatalities and injuries. According to Police data, the underlying cause of accidents are speeding and other unsafe driver behaviour. FRA believes that the best way to improve pedestrian safety is for a coordinated campaign to inform drivers on the dangers of unsafe driving, include more resources for the police and LTA to enforce speed restrictions and for FRA to continue with engineered safety improvements and black spot treatments. There should be an overall body coordinating this work.

In an exit meeting⁹² with the audit team, the Department of Transport revealed that in the past, the Bicycle Act cannot effectively be enforced due to the non-implementation of bicycle lane by FRA. However, the Department of Transport further commented that the FRA is currently looking into

⁹¹ Best Practices in Transportation Demand Management, January 2008, p.7D-1

⁹² Dated 3rd October, 2019

the implementation of the bicycle lane through identifying the efficiency of footpaths. In 2018/2019, the Department of Transport's stand has changed to that of the Transport policy that was formulated in 2014 and the need to review and revamp the Bicycle Act is paramount due to the planned implementation of the bicycle lane.

Good Practise

The commissioning of the second phase of the successful Household Travel Survey (HTS) is a platform to make informed transport planning and policy decisions by the Ministry of Infrastructure and Transport, a repeat of the successful HTS in 2015. The report provides an overview of Fiji's second nationwide Household Travel Survey (HTS) and present high level findings and suggestions for future phases of the HTS.

The report highlighted that all trips shown refer to linked trips and the mode of transport being used changes depending on the distance of the trip. Walking accounts for the majority of trips less than 1km and 45% of all trips. This provides evidence to support strategic transport planning, major infrastructure and project development, service delivery and policy development that supports walking as a mode of transport.

The development of the Greater Suva Transportation Strategy (GSTS) by FRA with the co-operation of relevant transport sector agencies and other stakeholders had identified active modes of transport such as cycling and walking as one of the priority.

We also acknowledge that FRA has undertaken a nationwide expansion of the footpath network. This has resulted in the construction of over 50km of footpath constructed with a further 49.9km planned for FY 2019/2020. In addition, FRA has also undertaken a nationwide expansion of the street light network to provide safer environments for night time pedestrians.⁹³

Expected benefits

The benefit of the implementing more sustainable transport through active mode of transport such as cycling and pedestrian will improve operation of transport network by reducing congestion and providing health benefits.

Recommendation

- The Department of Transport, in consultation with other transport stakeholders, should ensure that a nationwide transportation demand management strategy is developed to include cycling routes and pedestrian walkways.
- There is a greater need to strengthen active collaboration, engagement and an effective coordination of all stakeholders in the land transport sector.

⁹³ FRA comments on the audit query

Theme 6: Leveraging opportunities for transportation demand management

Audit observation

The discussion paper on Traffic Congestion solution has not yet been used to inform the further development of any related actions to address traffic congestion.⁹⁴ There is little evidence of active follow-up on the opportunities identified.

Criteria

Ensure safe, efficient (including reducing traffic congestion), and affordable transportation services. Encourage the development of a national road vehicle fleet that is well matched to transport demand, as well as to the road network and if necessary regulate the composition of the national vehicle fleet where there is incompatibility with the road infrastructure, excessive environmental disturbance, unacceptable safety risk or the need to encourage long-term change in transport modes. Feasibility studies to be undertaken to: (i) explore the viability of implementing public transport network design for an efficient and equitable public transport system; (ii) introducing peak period public transport zoning for high demand corridors; (iii) proper vehicle de-registration and scrapping of vehicles to maintain national fleet composition at manageable levels; and (iv) encouraging car-pooling. Adopting better transport management systems through bus rapid transit (BRT) and carpooling; and promoting the use of public transport.⁹⁵

Fiji's transport system has become challenging as a result of many years of growth, the role of the transport planner has widened considerably. Greater emphasis is now placed on developing strategies to manage demand and change people's travel behaviour in line with government guidelines.

Forecasting of travel patterns is being done with increasing awareness of the environmental and social effects on an integrated transport systems and infrastructure. Emphasis has shifted from traditional forecasting and an engineering-led approach to managing growing travel demand.

The Department of Transport takes a lead role in ensuring quality analyses through the identification, design, development, processing and evaluation of transport sector projects and reviews are done to ensure economic soundness and consistency with policies and strategies to further development in the transport sector.⁹⁶

Evidence and analysis

The National Development Plan (NDP) as cited above has outlined and even specified some strategies to counter traffic congestions including the *adopting better transport management systems through bus rapid transit (BRT) and carpooling; and the promoting the use of public transport.*

The Department of Transport developed a solution paper in 2015 on traffic congestion. The purpose of the paper was to provide solution to current traffic congestions between Suva to Nausori corridor. The paper identified the focus areas for major congestion and bottle necks hindering the smooth flow of traffic.

⁹⁴ Traffic Congestion Solution, pp.1-5

⁹⁵ 5 Year & 20 Year National Development Plan Transforming Fiji, p.70

⁹⁶ Department of Transport, Work Unit Plan 2017/2018, p.3

The paper highlighted considerable potential to identify resource personnel such as Traffic Police, Land Transport Authority, Road Marshalls and Municipal Traffic rangers to combine for traffic management operations. It further reiterated that resources will be deployed in the joint operations among agencies to address traffic congestion. These resources are detailed below.

Table 4.5: Distribution of Resources among agencies

Agency	Number of Vehicles	Manpower	Handsets
Land Transport Authority	4	8	2
Traffic Police	5	20	0
Road Marshalls	1	10	0
Transport Planning Unit	1	3	0
TOTAL	11	41	2

The paper identified nine immediate action areas of implementation in order to address traffic congestion.

Table 4.6: List of immediate action strategies to address traffic congestion

Immediate Action Strategies	Commencement Date
Meeting: Police/LTA/MoIT/FRA – Operation Order Formulation	29/05/2015
Visit Suva City Council and Nasinu Town Council to raise awareness on the operation order.	29/05/2015
Awareness in the media this weekend to advice on the combined and operations. Advise for the general public to change travel times and patterns. Articulated, Combination, Hazardous vehicles, logging and delivery trucks to avoid travelling during these peak hours, No driving lessons or driving test during peak hours.	30/05/2015
Municipal Councils to attend to control of traffic and traffic directions within the Town and City boundaries specifically Nasinu and Suva City.	01/06/2015
Road Marshalls to replace Police at the School Crossings.	01/06/2015
Police to attend to Traffic Directions and place major controls in main and outer intersections and roundabouts – this will include more priority lanes during the peak hours in the morning and afternoon.	01/06/2015
LTA to compliment in other areas where police presence is limited or lacking	01/06/2015
Radio Transmitting (handsets) for both Police and LTA to supplement each other in communications for traffic directions and control.	01/06/2015
Removal of Buses and break down vehicles unattended will be removed from the road by LTA and Police.	01/06/2015

It was noted that the Department of Transport also identified the medium and long term action strategies.

Table 4.7: List of medium action strategies to address traffic congestion

Medium Term Action	Status Update	Long Term Action	Status Update
Timing of Traffic Lights by FRA – to ensure connection SCATS immediately for better control of lights.	SCATS compatible traffic signal roll out is underway.	Introduce Intelligent Transport Systems – Electronic Road Pricing.	This has still been discussed at high level. According to the TWG meeting held in 13 th August, 2019, it was discussed that MOIT had four Korean consultants who visited Fiji to perform a feasibility study for the installation of ITS in Fiji.
Rescheduling of working time from Samabula to Nausori.	No comment	Increasing Tax for 2 nd car ownership	No comment
Multiskilling of Police Officers in all departments to also	It is a requirement but there is no evidence to support this medium	Increase Road User Levy	No comment

Medium Term Action	Status Update	Long Term Action	Status Update
undertake Traffic Police roles.	term action.		
Infrastructure Management by FRA especially in current intersections and roundabouts.	The Fiji Roads Authority (FRA) is categorizing intersections for severity and rolling out programmes to address the medium term actions of improving intersections	Setting up of Traffic Management Control Centres in LTA and Police and also introduction of CCTV Cameras on the road.	Still in the planning stages.
To promote carpooling as stated in the law	LTA carried out a survey that resulted in a survey report. The outcome of this survey is the brochure distributed to public citizens. However, there was no impact of this survey and awareness on carpooling.		
To promote the use of alternative vehicles such as motor cycles and bicycles.	This has not been implemented as there are still ongoing development on infrastructure to cater for the motor cycles and bicycles.		
To promote the use of public transport – especially buses and minibuses.	These has not been fully implemented as the circumstances to encourage the desire to access public transport is not being created.		
To encourage the change travel behaviour and travel patterns through awareness and incentives; and	There is no incentives implemented to encourage the change in travel behaviour and travel patterns.		
Introduction of Red Light Cameras	This has been implemented by LTA for monitoring traffic speeding and road safety.		

Additionally, the paper recommended that daily updates in the first week of joint-operation to be submitted to the Ministry and review of action and strategies to be done on a weekly basis.

Causes

In respect of joint operations, the Land Transport Authority and Fiji Roads Authority indicated to us during audit that they are not aware of the strategies highlighted in the Traffic Congestion paper.

Hence, we could not ascertain if there was any update on the joint operations that were undertaken or the review of action and strategies on management of traffic congestion.

This indicates the poor co-ordination between the DOT and relevant transport sector agencies in implementing the actions plan on the traffic congestion solutions.

The Fiji Roads Authority commented that they are unaware of the solution paper. Table 4.6 and 4.7 in this section outlines the immediate action strategies that have commenced but does not comment on the outcome or improvements that have resulted. For FRA's medium term action of improving intersections – the FRA is categorizing intersections for severity and rolling out programmes to address these issues.

Good Practises

It is noted that the Land Transport Authority regularly conduct joint operations with the Fiji Police Force in regards to meeting the objective of road safety through charging traffic offenders on the

road. The Land Transport Authority also has a Red Light Unit that install tools such as red light cameras to capture the behaviour of drivers commuting on the road.

The Fiji Roads Authority (FRA) is categorizing intersections for severity and rolling out programmes to address the medium term actions of improving intersections and SCATS (Sydney Coordinated Adaptive Traffic System) compatible traffic signal roll out is underway.

Expected benefit

The holistic approach and active coordination between the Department of Transport, Land Transport Authority, Fiji Roads Authority, Fiji Police Force and other stakeholders can provide leverage on the opportunities for transportation demand management specified in the solution paper.

Recommendation

The Department of Transport should develop a transportation demand management strategy in line with the NDP and the Green Growth Framework in consultation with the relevant stakeholders.

Theme 7: Implications for future investment decisions

Audit observation

The absence of coordinated transportation demand management strategies demonstrates that the nation's main approach to congestion remains dominated by expensive supply-side initiatives, focused on expensive road and public transport capacity.

Criteria

Transportation Demand Management, or TDM, is a general term for strategies that increase overall system efficiency by encouraging a shift from single-occupant vehicle (SOV) trips to non-SOV modes, or shifting auto trips out of peak periods.⁹⁷

The Green Growth Framework of Fiji identified the need to shift towards public transportation and non-motorised land transport, due to the significant increase in number of vehicles on Fiji's roads.⁹⁸

Evidence and analysis

Between the last two census (2007 and 2017), the total vehicle population increased by 35,210 or 43%. The table 4.7, shows the population of registered vehicle type from 2007-2017.

Table 4.8: Population of registered vehicle type from 2007-2017

Vehicle Type	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Private	53,515	54,167	53,023	53,819	53,714	54,919	59,415	64,988	69,968	79,815	84,558
Taxi	5,390	5,137	5,427	5,687	5,974	6,079	6,459	6,572	6,475	6,045	6,190

⁹⁷Best Practice in Transportation Demand Management, Seattle Urban Mobility Plan, 2008.

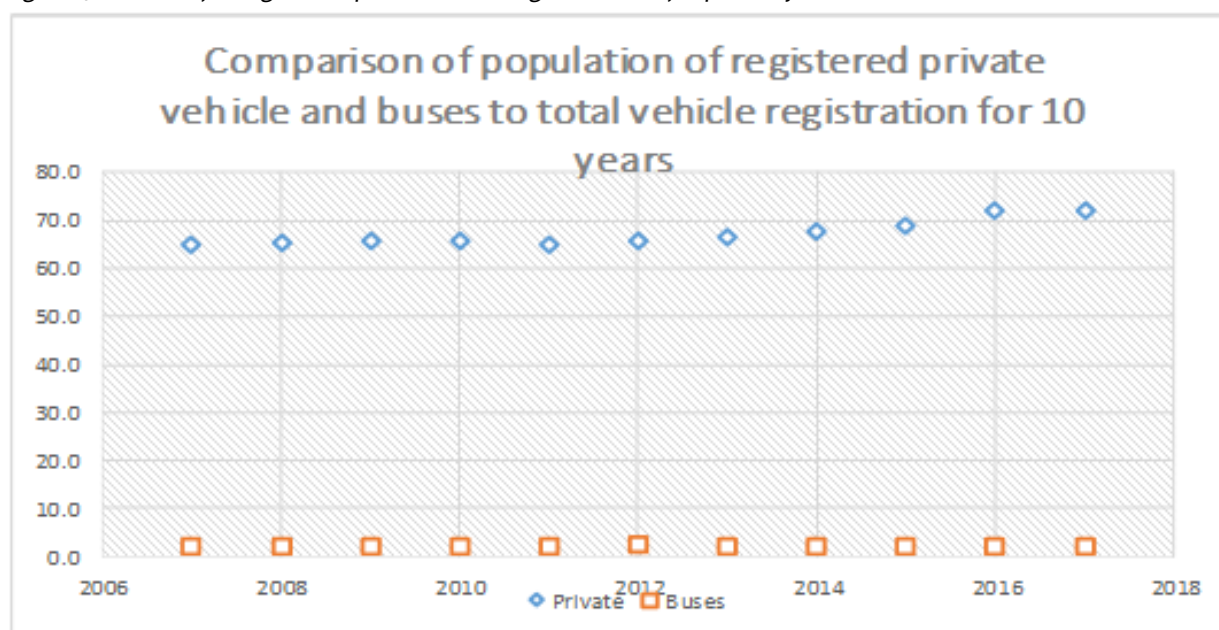
⁹⁸ A Green Growth Framework for Fiji, p.87

Vehicle Type	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Rental & Hire	1,912	1,873	1,862	1,949	2,126	2,096	2,178	2,436	2,632	3,017	3,829
Goods vehicle	18,262	18,375	16,879	16,757	17,072	16,646	17,077	17,616	18,170	17,485	18,397
Buses	1,635	1,567	1,595	1,763	1,839	1,890	1,971	2,034	2,006	2,403	2,444
Government Vehicles	1,143	1,156	1,223	1,335	1,403	1,313	1,327	1,508	1,349	1,524	1,596
Carriers	74	67	106	222	273	302	335	346	376	28	31
All other vehicles	420	414	407	394	380	410	428	440	449	446	516
Total	82,351	82,756	80,522	81,926	82,781	83,655	89,190	95,940	101,425	110,763	117,561

Source: Land Transport Authority Factsheet 1, Motor Vehicle Statistics

We noted that the total vehicles registered increased over the 10 years, except for 2009 which shows a slight decrease. Majority of the vehicles registered by Land Transport Authority (LTA) were private vehicle which account 73.98% of the total registered vehicle over the past 10 years (2007 – 2017). This is contrary to the population of registered buses which account for 2% of the total registered vehicles over the past 10 years (2007-2017). This has resulted in more private vehicles than buses commuting on the road which impacts congestion during peak times. The trend of private vehicle against buses from 2007 to 2017 is illustrated below.

Figure 4.10: Trend for registered private vehicle against buses for past 10 years.



Source: OAG Analysis based on LTA Motor vehicle factsheet

However, it was noted that there is an absence of a nationwide transportation demand management strategy that encourages a shift from private vehicle to public transport such as buses or other forms of active mode of transport. A review of the Greater Suva Transportation Strategy shows that major emphasis is placed on priority infrastructure projects and less on transportation demand management strategy which increases the overall system efficiency by encouraging a shift from single-occupant vehicle (SOV) trips to non-SOV modes, or shifting auto trips out of peak periods.

Causes

The absence of demand management strategy is due to the fact that the transport sector agencies such as DOT, LTA, FRA, Fiji Police Force and other stakeholders have their own lines of reporting and mandate and there is an absence of active coordination to address the demand cause of congestion.

The Fiji Roads Authority commented that they agree that the Department of Transport develops a demand management strategy.

Good Practice

We acknowledge the development of Greater Suva Transportation Strategy (GSTS) that identifies traffic congestion during peak periods as one of the key issues with GSA transportation network and the formation of the National Transport Consultative Forum in government transport sector dialogue.

It anticipated that the National Transport Co-ordinating Committee will be to foster inter-modal transport coordination and dialog, to identify and discuss emerging issues in transport infrastructure and service provision, to review the development of policy and planning in the sector and to monitor progress in the implementation of the Policy Action Plan and 20 year Transport Infrastructure Investment Plan.

We also acknowledge the participation of Fiji Roads Authority in the stakeholder meetings to discuss strategies to encourage the transition from private vehicles to public transport. The Authority would also welcome the development of a nationwide demand management strategy with Land Transport Authority, Fiji Police Force, Ministry of Local Government, Department of Transport, Fiji Bus Operators Association and other stakeholders.

Expected benefit

Active coordination between Department of Transport, Land Transport Authority, Fiji Roads Authority, Fiji Police Force and other relevant stakeholders will influence development of future investment decisions on management of demand causes of congestion.

Recommendations

- The Department of Transport should develop nationwide demand management strategy in consultation with other transport agencies; and
- The Department of Transport as a lead agency should ensure active coordination between the Land Transport Authority, Fiji Roads Authority, Fiji Police Force and other relevant stakeholders in addressing the demand of road users during the peak hours of traffic.

Theme 8: Duty of Traffic Police Officer on Public Road

Audit observation

Strategically, the Fiji Police Force has updated and adapted its long term plan to meet the changes in service demand by the general public with respect to the traffic services it provides.

The Fiji Police Force's annual corporate output for the year 2012 - 2018 is focused on road safety, awareness and enforcement. However, the elements of traffic congestion management is absent in the identified strategies or initiatives.

The traffic duty roster for Traffic Police at major Police Stations in the southern division are allocated according to the teams that compose more than two resource police personnel committed to morning, afternoon and night shift. However, the traffic duty roster for Traffic Police Stations does not specify the time for police officers when starting and concluding the daily routine tasks assigned to them.

There is a positive correlation of data gathered through e-ticketing system with the timing for traffic police when managing traffic on public roads. The e-ticketing system records all bus transactions electronically and it produces various data to assist in the transport sector planning and policy. The e-ticketing system captures data on an hour by hour travel behaviour pattern of the travelling public and have noted that most transactions are at peak at 7.30AM and 3.30PM.⁹⁹

Criteria

It shall be the duty of the Force:

- a) to regulate and control traffic;
- b) to divert all or any particular kind of traffic, when it is in the public interest to do so.¹⁰⁰

Institutional strengthening is a cross-cutting agenda and demands a balanced approach. The adoption of the modernization models together with transformation leadership requires a balanced approach in developing both the operational effectiveness and human resources capacity. The effectiveness and efficiency of the organizations largely depends on the ability to coordinate and mutually formulate programs with emphasis on targeted outputs and outcomes.¹⁰¹

The Strategic Plan for 2007-2011 under one of its five core groups had specified five activities that the Fiji Police Force would have to undertake in order to achieve "effective contribution to Road Safety". The three that related to traffic are:

- Conducting effective traffic awareness and safety programme in schools and the community.
- Enhancing traffic law enforcement capacity through the use of modern technology and suitable highway vehicles.
- Provide traffic enforcement targeted by research and intelligence

One of the strategic objectives identified by the Fiji Police Force in its Strategic Plan for 2015-2019 is Effective Traffic Control Management. It aims to achieve this objective by:

- Firstly strengthening collaboration with partner agencies to enable the free flow of traffic
- Secondly promoting road safety through education, innovation and targeted enforcement
- And thirdly by embracing technology as a tool for deterring road and traffic related offenders.¹⁰²

⁹⁹ National Transport Consultative Forum presentation

¹⁰⁰ Section 23(1)(a)(b) of Police Act 1965 (Act 10 Of 1965)

¹⁰¹ Fiji Police Force Strategic Roadmap 2011 – 2050, p.10 - 12

¹⁰² Fiji Police Force Strategic Plan 2015-2019, Transformation through capacity and capability development.

Evidence and analysis

We noted that strategically, the FPF has updated and adapted its long term plan to meet the change in service demand by the general public with respect to the traffic services it provides.

Road traffic operations include on-road enforcement of speed limits, testing for drug and alcohol impairment and attendance at the scene of road traffic crashes and recording of crash details.

We also noted that the FPF's Annual Corporate output for the year 2012 - 2018 is focused on road safety, awareness and enforcement. However, the elements of traffic congestion management is absent in the identified strategies or initiatives. Refer to Table 4.9 for identified output and strategies related to traffic in general;

Table 4.9: Strategies from 2012 to 2019 for Fiji Police Force

Year	Output	Strategies
2012	Output 7 – Traffic Enforcement and Awareness	Ensure timely and adequate resources provisions to enhance operations capabilities for a readiness state. Inform, adopt an agenda for creating crime free society through relevant strategies on road safety, youth engagement, gender sensitivity, and community and stakeholder participation.
2013	Output 4 – Road Safety	Reduction in road fatalities by 30%
2014	Output 4 – Road Safety	Safety on the roads
2015	Output 4 – Road Safety 4.1 – Acquisition and standardization of Traffic Enforcement Equipment 4.2 – Traffic capability development 4.3 – Road Safety Initiatives & Enforcement	Annual Calibration of dragger alcotest 7110 (evidential equipment's) & alcotest 7410 (Road side breath testing devices) Purchasing of all traffic related equipment's Strengthened specialised traffic training and workshops National Road Safety Campaigns on Fatal five
2016/2017	Output 4 – Road Safety 4.1 – Strengthen integration with other critical stakeholders 4.2 – Effective road safety community awareness	Enhance joint operations Initiative consultative meetings Maximize media opportunities Intensify road presence and awareness initiatives
2018/2019	Output 4 – Road Safety 4.1 – Strengthen integration with critical stakeholders 4.2 – Effective road safety community awareness 4.3 - Effective traffic enforcement initiatives	Enhance joint operations Initiate consultative meetings Develop traffic community awareness programs Intensify road presence Intensify Traffic Enforcement Programs

Causes

The lack of institutional ability to coordinate and mutually formulate programs to mitigate traffic congestion, with emphasis on targeted output and outcomes is a factor that causes a lot of difficulty in trying to manage traffic congestion through a co-ordinated and systematic manner. Monitoring, evaluation and reporting of daily feedbacks is essential to increase effectiveness.

The Director Traffic in the FPF commented that the FPF is totally committed in addressing the issue of Traffic Congestion through regular consultations and coordination with relevant key stakeholders such as LTA and FRA.

Our audit found that all stakeholders need to co-operate with each other and work collectively to ease the congestion issues.

Traffic Congestion is a prevalent issue and needs everyone's collective attention and input to address the issue as it continues to be a dilemma on all road users.

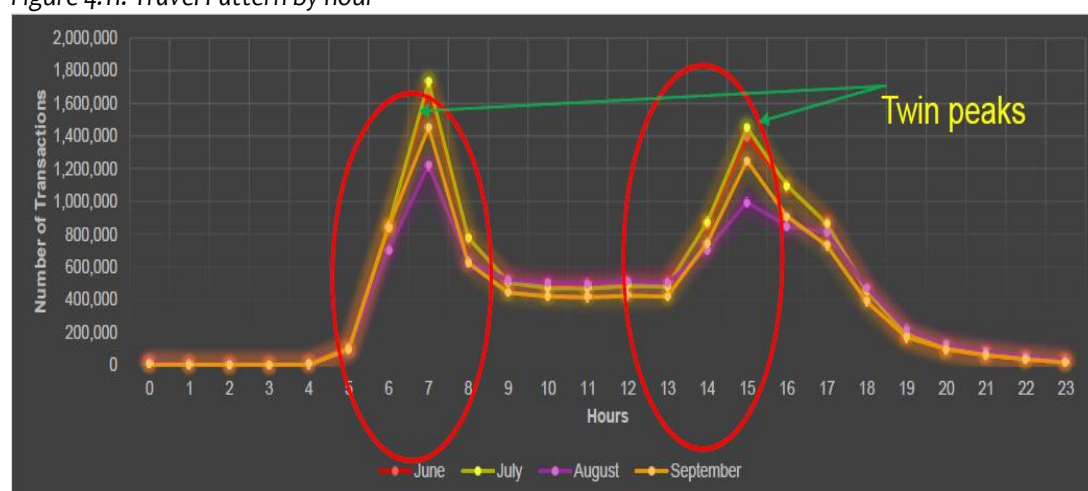
Good Practices

The commissioning of the second phase for the successful HTS is a platform to make informed transport planning and policy decisions by the Ministry of Infrastructure and Transport, a repeat of the successful HTS in 2015. The report provides an overview of Fiji's second nationwide HTS and present high level findings and suggestions for future phases of the HTS.

The report recognized that the trip departure time for weekdays is a fairly typical profile (compared to developed countries), with a large peak of people departing (normally their homes) between 7-8am and then a longer peak period in the afternoon from 3-6pm as they return home. The purpose of these trips is largely dominated by education, work, drop off and return home during the 7-8AM peak periods. This provides an evidentiary basis to support strategic transport planning, major infrastructure and project development, service delivery and policy development.

We acknowledge the introduction of electronic bus ticketing in 2017 which enables the production of data on the travel pattern of the travelling public in a day. From the e- bus ticketing data presented by Vodafone in the NTCF in 2018, it was noted that transactions peaked at 7am and 3.30pm whereas transactions were stable at 9am to 1pm. The average passenger loading dropped to 25-50 compared to 60 during peak periods. It was also noted that during the school holidays peak was reduced. This data provides Department of Transport and relevant transport sectors such as LTA, FRA and FPF, to critically and strategically plan ways that support the change in the transport sector. Following is the illustration of data on travel behaviour pattern of public citizens by time of the day.

Figure 4.11: Travel Pattern by hour



Source: National Transport Consultative Forum presentation

The above analysis have a direct correlation with the traffic police duty roster on strategized resources allocation at identified critical time.

We also acknowledged the efforts of FPF in identifying strategies to strengthen collaboration with partner agencies to enable the free flow of traffic.

Expected benefits

The effectiveness and efficiency of the organizations largely depends on the ability to coordinate and mutually formulate programs related to traffic management congestion with emphasis on targeted outputs and outcomes.

Recommendations

- Fiji Police Force must ensure that traffic duty roster schedule takes into account the time and location to deliver its operational service on the road particularly during critical time of traffic congestion.
- Fiji Police Force should make available monitoring mechanisms in order to evaluate the results of delivering operational services during critical time of traffic congestion.
- Fiji Police Force should ensure that more is done to coordinate and mutually formulate programs that mitigate traffic congestion with partner agencies, with emphasis on targeted output and outcomes.

Theme 9: Review of the on-street car parking

Audit observation

The review of the on-street car parking restriction is one of the strategy that was identified in the GSTS 2015 – 2030. This strategy is to address the key issue of enforcement and regulation. The expected outcome of this strategy is to reduce traffic congestion during peak hours of traffic. However, this initiative is still at an early stage and lacks a comprehensive implementation strategy to fully influence its potential to reduce illegal stopping, picking up, dropping off and parking which directly impact congestion management.

Criteria

Improved enforcement of road rules to regulate traffic flows would be of significant benefit to the safety of pedestrians and would encourage active modes of transport. These modes are integral to the improved operation of the transport network by reducing congestion and providing health benefits to those who switch to active modes.¹⁰³

Evidence and analysis

The GSTS 2015- 2030 prioritised the review of the existing on-street parking time restrictions and the introduction of new short term parking restrictions in high use areas. The Ministry of Local Government and FRA are the responsible authority of the identified options. The objectives of the study is to recommend infrastructure and traffic management operations for the Suva CBD and inner city areas including on street parking.

Within the next 10 years with effect from 2015, a study was to be tendered to consultants and the results to be used by the Councils to introduce new short term restrictions in high use areas.

“Review of the on-street car parking is still at an early stage and lacks a comprehensive implementation strategy to fully influence its potential to better manage traffic congestion across the road network”

¹⁰³ GSTS Report 2015 – 2030, p.45

There is no active co-ordination between the Fiji Roads Authority and relevant transport sector agencies (such as LTA, Ministry of Local Government and Traffic Police) in identifying and updating, in consultation with relevant transport sector agencies, demand management of traffic congestion.

The FRA highlighted during a TWG meeting¹⁰⁴ that the implementation of urban clearways are currently underway along specified locations such as Pender Street, Fletcher road, Grantham road, Kings road and Queens road. The LTA had responded to FRA regarding the road issue at Flagstaff in which the following was highlighted;

- Removal of taxi base in front of Extra Supermarket
- Vehicle parking all over the place at MH Supermarket
- Absence of road parking signage at the Westpac ATM machine as people are blocking the clearway
- The drive in parking at the shops at the Mobil Station in which people drive in and reverse to the flow of traffic which cause problem.
- Taxi base at Brown street is not being used and recommend if it can be removed
- Having the clearways to begin at 1600hrs is too late.

Causes

It was revealed in the exit meeting¹⁰⁵ that the FRA is responsible for gazetting powers on things like urban clearways. The parking restrictions and road signage is the responsibilities of FRA.

The regulation and enforcement of traffic in terms of monitoring the implementation of urban clearways is a multi-agency approach in which the DOT, FRA, LTA, FPF and local authorities coordinate to achieve the successful implementation of the urban clearways.

The FRA commented that the way forward is to collaborate with the overarching DOT to coordinate this work with other authorities and stakeholders.

Expected benefit

With active coordination between the DOT, LTA, FRA, FPF and other relevant stakeholders can influence the implementation of the urban clearways as a result, will improve congestion management.

Recommendations

- The Department of Transport should develop and regularly update, in consultation with other transport agencies, a nationwide demand management strategy;
- Adequate resources should be readily available for the enforcement and regulation of traffic operating along the vicinity of urban clearways by Department of Transport in collaboration with FRA, LTA, Fiji Police Force and local authorities.

¹⁰⁴ Meeting Minutes dated 13th August, 2019

¹⁰⁵ Dated 3rd October, 2019

5.0 MONITORING, EVALUATION AND REPORTING STRATEGIES

Effective transport demand management can be achieved through a sound governance framework and a well-functioning monitoring, evaluation and reporting system. For the transportation demand management, Chapter 3 discussed the governing institutional framework in place and this chapter discusses the monitoring, evaluation and reporting functions.

Thus, monitoring and evaluation (M&E) of the implementation of the planned strategies to address the supply and demand side factors as products of traffic congestion and effective use of the limited available road space, is conducted on two levels (*i.e. operation and strategic level*) at quarterly and annual intervals.

Implementing agencies in the Land Transport Sector such as the Fiji Police Force and the self-governing statutory authorities of the Fiji Roads Authority (FRA) and Land Transport Authority (LTA) are responsible for monitoring their own traffic management initiatives at the operational level at annual intervals and report directly to the Hon. Minister for Infrastructure, Transport, Disaster Management and Meteorological Services as provided for in their legislations.

Monitoring and evaluation (M&E) of the transport sector operations and developments as detailed in the World Bank funded technical assistance¹⁰⁶ is guided by inputs from external reference group comprising representative of key stakeholders in the transport sectors, primarily through the National Transport Coordinating Committee (NTCC) and the National Transport Consultative Forum (NTCF).

Although soundly based, these Monitoring and Evaluation (M&E) arrangements are compromised by the absence of a clearly defined land transport sector-wide monitoring and evaluation system at the strategic level, absence of systematic reporting by agencies on the impact of nation-wide congestion management initiatives, absence of traffic data to enable a full assessment of the holistic pattern of congestion, absence of key indicators and trends in traffic performance and performance measures and targets, lack of collaboration in integrating all related data in the centralized national transport database and monitoring not turned into action responses or program modification. This impedes the effective monitoring of congestion management related initiatives.

Theme 1: Monitoring congestion management initiatives

Audit Observation

Governing policies of the land transport sector affirm that monitoring of the sector should be done at a strategic level. However, this is not perpetuated on the ground. Instead, monitoring is done in isolation by the implementing agencies in the land transport sector, with respect to establishing the degree of achievement of planned targets in their respective organizational plans.

¹⁰⁶ Initial advisory Services for the Establishment of the Transport Planning Unit, Policy Appraisal Services Pty Ltd, for Government of Fiji, Ministry of Tourism and Transport and World Bank, Apr 1999.

Criteria

The network planning responsibilities of the DOT as set out in Section 1.1.17 of the 2015 Maritime and Land Transport Policy are at a strategic level concerned with: the roles of each transport mode and their integration and interfaces; monitoring of sector operation and development; and the progress of the 20 year Transport Infrastructure Investment Plan.¹⁰⁷

The purpose of the NTCC will be to foster inter-modal transport coordination and dialog, to identify and discuss emerging issues in transport infrastructure and service provision, to review the development of policy and planning in the sector and to monitor progress in the implementation of the Policy Action Plan and 20 year Transport Infrastructure Investment Plan.¹⁰⁸

The NTCC will meet three times a year and will be serviced by DOT.¹⁰⁹

Evidence and analysis

“The Communiqué is used by the Ministry of Infrastructure and Transport as the framework to pursue and formulate relevant policies to support the transport sector in driving the Fiji economy forward in the medium to long term.”

One of the Department of Transport’s core output is the National Transport Consultative Forum of which a commune is made on the outcomes of discussions through this forum which also covers traffic congestion. The problem of traffic congestion was also highlighted as one out of the six key issues in the Greater Suva Transportation Strategy (GSTS). In August 2014, the Fiji Roads Authority (FRA) published a transport blueprint for the Greater Suva Area (GSA) for the next 15 years known as the Greater Suva Transportation Strategy (GSTS). It was prepared over a six-month period with extensive input from a wide

range of Stakeholders and the Fiji Roads Authority. The strategy addresses six key issues, one of which being traffic congestion.

Addressing the problem of traffic congestion in a holistic manner requires the collaborative work of lead agencies (i.e. DOT, FRA and LTA) in the land transport sector. Both FRA and LTA report to the Minister for Infrastructure, Transport, Disaster Management and Meteorological Services as presented in **Appendix 1**.

The FRA is responsible for all matters pertaining to construction, maintenance and development of public roads, bridges and jetties in Fiji. It includes and is not limited to traffic management, planning and management of road survey and designs, including other matters as may be directed by the Minister.¹¹⁰ Concurrently, LTA was set up to improve land transport and road safety. Their key role epitomizes the niche activity of the authority as the principle licensing agency.¹¹¹

On the other hand, the functions of the DOT are comparable across governing policies of MOIT, with the exception of some minor variations. Moreover, DOT’s monitoring functions are consistently stipulated across policies and organisational planning documents that were sighted during the audit as reflected in Table 5.1.

¹⁰⁷ Maritime and Land Transport Policy 2015, Section 5.1.5, paragraph 2, p.29.

¹⁰⁸ Maritime and Land Transport Policy 2015, Section 5.1.3, paragraph 2, p.27.

¹⁰⁹ Maritime and Land Transport Policy 2015, Section 5.1.3, paragraph 3, p.27.

¹¹⁰ MOIT ACP 2016, Section 3.2, p.10.

¹¹¹ MOIT ACP 2016, Section 3.2, p.9.

Table 5.1: Monitoring Functions of DOT across governing policies and organisational plans of MOIT

Governing policies/plans/websites	Monitoring functions of DOT
MOIT website (http://www.moit.gov.fj/departments/transport-planning-unit)	<p>To ensure that the respective sectors are provided the essential policy, regulatory, development, monitoring and support services; to constantly review sectorial policies and regulation with the view of up grading all services provided to these Sectors; to effectively introduce best practices with the aim of improving the quality and standard of the core sector thus providing our customers with the highest possible services; the DOT has been tasked to look into the progress and fulfil the above mentioned initiatives.</p> <p>The Department of Transport (DOT) was established as a means to strengthen the capability of Government to better coordinate transport planning and monitor policy and development in the transport sector and advice, strategic planning and co-ordination and investment programming assistances and the overall direction of its activities is guided by inputs from external reference group, comprising representative of key stakeholders in the transport sectors, primarily through the National Transport Coordinating Committee (NTCC) and National Transport Consultative Forum (NTCF).</p>
DOT Work Unit Plan 2017/2018 and Draft DOT Work Unit Plan 2018/2019	<ul style="list-style-type: none"> ▪ Monitor the status and performance of the transport system in meeting Government's objectives for the sector. ▪ To monitor the effectiveness of transport plans and projects. ▪ Maintain a supporting management information system and to disseminate information on the status and performance of the sector.
Maritime and Land Transport Policy 2015	<ul style="list-style-type: none"> ▪ Policy analysis and advice on measures to improve the performance and efficiency of the transport sector. ▪ Programme formulation and evaluation assistance to the transport line agencies. ▪ Develop information systems and tools for transport system performance and monitoring, including a transport database and multi-modal transport modelling capability.

From the above table, it is evident that monitoring the performance, progress and development of the whole land transport sector is to be conducted by the Department of Transport (DOT). However, the DOT has not properly designed a monitoring system/tool/template to monitor the above noted activities at a strategic level.

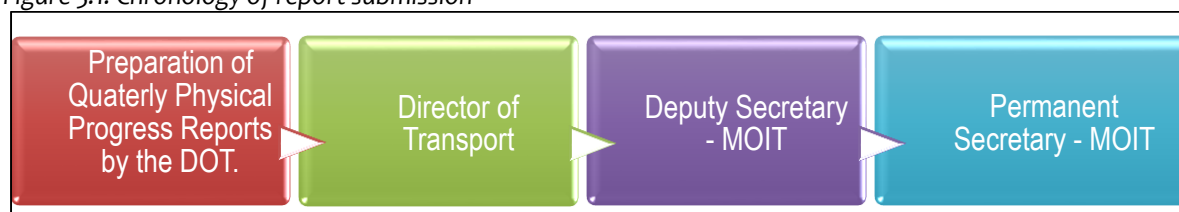
On 12 February 2019, we made reference to Section 5.1.5 of the Maritime and Land Transport Policy that the network planning responsibilities of the DOT are at a strategic level concerned with, amongst other things, *the monitoring of the sector operations and development*. Hence, based on this understanding, we requested information on the basis of measurement used to monitor the land transport sector operations and whether it was predetermined in the Transport Master Plan. We further requested information on whether there were specific outputs, outcomes and performance indicators in the Master Plan to help gauge the performance of the transport sector.

According to the DOT, the monitoring of the Land Transport Sector is in fact done at a Strategic Level and is conducted through the Technical Working Groups (TWG) by which they are able to work with transport agencies on a strategic level. It was noted that themes for the TWG meetings are narrowed down to the transport agencies different areas of operations to deal with traffic congestion and it cannot be taken solely as a theme on its own due to the varying nature of operations of the relevant stakeholders. For example, with regards to Police operations, they deal with traffic direction in the morning which has an impact on congestion management. Whereas

for the LTA, they may have mechanisms to lessen the registration of vehicles, on the other hand, the Fiji Revenue and Customs Services (FRCS) comes into play because of vehicle importation. In addition, the other monitoring mechanism is through the follow ups of Budget utilisation and operations of Commercial Statutory Authorities (CSAs).

The DOT also carries out monitoring and reporting at the operational level through the submission of Quarterly Physical Progress Reports (QPPR) to the Permanent Secretary (PS) MOIT as reflected in Figure 5.1 below.

Figure 5.1: Chronology of report submission



Source: Confirmed by DOT on 22 January 2019.

The QPPR produced by the DOT looked at issues in the transport sector in a holistic manner encapsulating both maritime and land transport matters. In order to effectively evaluate the QPPR, we reviewed the Annual Work Programme (AWP) of the DOT, so as to determine whether planned outputs/ outcomes were achieved at reporting period (i.e. Quarter 1 of 2018/2019). Our review of the AWP revealed that the only correlation between congestion management and the work of the DOT was with regards to the National Transport Consultative Forum (one of the Department of Transports core output) and the Fiji National Transport Database. The remaining contents of the reporting document related to the maritime transport (i.e. Sea Route Licensing and Fiji Shipping Franchise Scheme). Furthermore, reporting of work progress means that the Department is supposed to determine the output and ultimately the outcome that will benefit the general public with reference to the performance indicators and targets incorporated into the Department's work plan. However, linking of the Annual Work Programme (AWP) to the QPPR showed that the Department only reported on two out of the four anticipated outputs (i.e. Fiji National Transport Database and Fiji Shipping Franchise Scheme). In addition, it was noted that the reporting contents of the Fiji National Transport Database in the QPPR was directly copied from the AWP. Extracts of the AWP and QPPR with respect to reporting contents of the Fiji National Transport Database is attached in **Appendix 4 and 5** of this report.

The audit finding indicates that there is lack of clarity in terms of reporting the actual progress against the planned outputs for the reported projects.

Monitoring and reporting of achievements is also done at the operational level by lead agencies in the land transport sector within the provisions of their governing legislations. Section 31 of the LTA Act 1998 states that the Authority is responsible for furnishing a report of its operations, business and affairs in respect of the financial year to the Minister for Infrastructure, Transport, Disaster Management and Meteorological Services. FRA's reporting responsibility is also to the Minister for Infrastructure, Transport, Disaster Management and Meteorological Services. However, as presented in Figure 5.2 below, reports by the two lead agencies in the land transport sector has not been consistent over the years.

Figure 5.2: Published Annual Reports of FRA and LTA

Lead Agency/ Organisation							Accessible as hardcopy or on the internet
	2013	2014	2015	2016	2016/2017	2017/2018	
Land Transport Authority	● Yes	● No	● No	● No	● No	● No	Annual Report not publicly Available on the LTA website. Report provided to Audit team via email.
Fiji Roads Authority	● Yes	● Yes	● Yes	● Yes	● No	● No	http://www.fijiroads.org/category/annual-report/

*“FRA Act 2012, Section 29 – (1) The Authority shall furnish to the Minister a report on its activities for the first half of each financial year.
- (2) The half yearly report shall include the information required by the Authority’s statement of corporate intent to be given in the report.”*

Even though FRA does not provide periodic reports to the Minister for Infrastructure, Transport, Disaster Management and Meteorological Services as per Section 29 of the Fiji Roads Act 2012, the FRA prepares monthly Statement of Performance reports, highlighting the financial performance of the Authority which are deliberated during the FRA Board meetings. In addition, parliamentary briefs are submitted by the Authority’s Internal Communication Department upon request by the Ministry of Infrastructure and Transport. On the other hand, LTA’s goals are correlated to the Annual Corporate Plan (ACP). Thus the ACP is produced by the Authority and is aligned to the National level goals/ strategies

and projects such as those mentioned in NDP, Green Growth Framework, Maritime and Land Transport Policy, etc.

According to Section 7 of the Land Transport Act, the Permanent Secretary for Ministry of Infrastructure and Transport is a member of the Board. Activities that warrant the Board’s deliberations are discussed and resolved during the monthly board meetings. These include policy and operational issues.

Committees have also been established as a mechanism for engendering coordination across the transport sector, encapsulating monitoring performance and progress of lead agencies in the transport sector. One such committee was the National Transport Coordinating Committee (NTCC). The NTCC was established, amongst others, to monitor the progress of implementation of the Policy Action Plan and the 20 year Transport Infrastructure Investment Plan.¹¹² However, the Committee has been in abeyance for some time.¹¹³

Causes

Although there appears to be a working monitoring mechanism for the DOT in the form of the

¹¹² Maritime and Land Transport Policy 2015, Paragraph 2, p.27.

¹¹³ Maritime and Land Transport Policy 2015, Paragraph 5, p.26.

TWG's, there still has to be a clear demarcation of their strategic role and the operational role of their implementing arms. Also, according to the DOT, measures cannot be enforced on the lead agencies of the land transport because they have their own lines of reporting and mandates and the DOT is only able to provide them policy advice.

On the reasons for inconsistencies in preparation and submission of Annual Reports, the FRA noted that Annual reports for the years 2016-17 and 2017-18 reports are still in progress as they are being prepared by external consultants and should be finalized before the end of Financial Year (FY) 2018-19.

The LTA confirmed that the Authority is now producing the Annual reports from 2016 up until 2018. They are in the final stages of production and will be sending the reports to their line Ministry towards the end of October 2019.¹¹⁴ They have had to bring in consultants to compile the reports because the LTA had not had any CEO and the Board were not Executive Directors as they were not involved in the day to day operations of the Authority. The Authority has provided assurance that the Annual reports will eventually find their way up to parliament. The current CEO noted that it is very regrettable that the Authority had not been able to produce its Annual reports, and pointed out that they should have done so as it is a statutory requirement.

According to the Department of Transport, they had submitted a paper to revive the NTCC which was not approved.

Effects

The absence of a clearly defined monitoring system at the national level for the whole land transport sector hinders accountability and flow of information. This is necessary to support the implementation of strategies as per organisational plans. Consequently, absence of a national monitoring system impedes the progress towards achievement of Government's objectives of providing an integrated transport system that is safe, efficient, affordable, accessible to all and environmentally sustainable as outlined in the National Development Plan (NDP).

Good practices

The Maritime and Land transport policy captures the need for dialogue between the public and private sector in order to promote a mutual understanding of the issues, demands and constraints in the transport sector that act on the Government agencies on the one hand and private businesses on the other. Thus the establishment of the National Transport Consultative Forum (NTCF). Section 5.4 of the Maritime and Land transport policy highlights that the NTCF is the main forum for the transport industry dialog for freight and passenger transport services. The DOT will utilize the NTCF as forum for freight interests, transport services operators and Government to consult and work together with the overall aim of improving the efficiency, safety, security and reliability of transport infrastructure and freight and passenger operations.¹¹⁵ In addition, as stipulated in the maritime and land transport policy, the forum plays a valuable role in the dialog between the public and private sector which is needed to promote mutual understanding of the issues, demands and constraints in the transport sector that act on the Government agencies on the one hand and private business on the other.¹¹⁶

The NTCF convenes once a year (Dates captured in Table 5.2 below) to discuss transport-related matters with other Government and industry delegates. From 2014, the forum has been

¹¹⁴ Exit meeting dated 03 October 2019.

¹¹⁵ Maritime and Land transport policy 2015, Paragraph 6, p. 31.

¹¹⁶ Maritime and Land transport policy 2015, Section 5.1, Paragraph 1, p. 32.

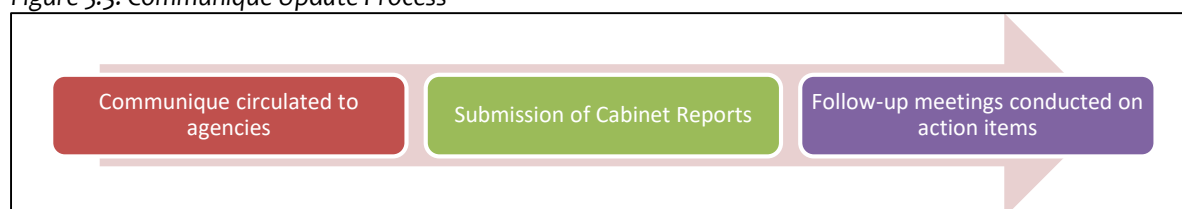
conducted every two years, the last one being in October 2018.

Table 5.2: NTCF meeting dates

Date	NTCF Communique No.
22/11/10 & 23/11/10	9 th
31/10/11, 01/11/11 & 02/11/11	10 th
2012 (Exact dates not provided to audit)	11 th
06/11/13	12 th
13/11/14	13 th
27/10/16 & 28/10/16	14 th
18/10/18 & 19/10/18	15 th

However, according to Department of Transport, the forum actually meets every two years. At the completion of each forum, there are follow-up meetings (captured in Figure 5.3 below) conducted to get an update on the progress of implementation from each responsible entity according to the action plan.

Figure 5.3: Communique Update Process



One of the communiqué is traffic congestion. Details on discussions of traffic congestion management strategies are captured in **Appendix 6**.

Expected benefits

Findings from the monitoring exercise conducted by the DOT can be used for monitoring and evaluation to establish whether lead agencies such as the FRA and LTA are making sustained efforts to appropriately address issues in the land transport sector.

The submission of reports will ensure adequate evaluations are carried out on the progress of implementation and enable informed decision-making in addressing gaps in implementation.

FRA agreed¹¹⁷ that the overall responsibility for monitoring of performance should lie with the DOT.

The Department of Town and Country Planning also agreed¹¹⁸ that Stakeholders have been working in isolation.

The Department of Transport¹¹⁹ informed us that it was established through a Cabinet Paper-policy, therefore, legislative mandate does not work because their functions are not operational in nature. The Department of Transport further noted¹²⁰ that the NTCF was a 2 year meeting. However, the Forum was scheduled to convene in 2019, but there was no budget provided for this. The Department of Transport will have to rely on their TWG meetings every month. In addition, the Department of Transport confirmed¹²¹ that the submission of annual Reports is a

¹¹⁷ FRA Comments dated 27 August 2019.

¹¹⁸ Exit meeting dated 02 October 2019.

¹¹⁹ Exit meeting dated 03 October 2019.

¹²⁰ Exit meeting dated 03 October 2019.

¹²¹ Exit meeting dated 03 October 2019.

requirement under the agencies different legislations and CSAs are mandated under the law to submit.

LTA also agreed¹²² that the DOT should be the overarching agency, monitoring and providing directions for the other agencies in the land transport sector. The LTA further agreed to the audit findings that all stakeholders are working in silos and pointed out that it was the single biggest impediment for the success of planned initiatives which is why they agree with the notion that the Ministry of Infrastructure and Transport through the Department of Transport should be the organisation or the entity which has the coordinating role for delivering projects on the ground.

Recommendations

The DOT should:

- Appropriately action responsibilities of monitoring at the strategic level that have been captured in the respective policies and planning documents. This can be achieved through the re-organisation of the DOT in more of its originally conceived role with more resources covering land transport matters through a legislative mandate.
- Honour its governing policies to enable it to effectively discharge its duties as required under the maritime and land transport policy of overseeing monitoring of the land transport sector and providing appropriate feedback to the responsible Minister.
- Make efforts into reviving and reconstituting the NTCC to ensure that there is active parallel arrangement within the government transport agencies supplementing the NTCF/TWG. This should be done at two levels - the strategic level with the Hon. Minister chairing and the heads of every agency to form the NTCC and at the NTCF/TWG level which reports to the NTCC. The NTCF and TWG would normally discuss operational matters with regards to the transport sector.
- Ensure that actioned items deliberated during every NTCF is adequately followed up to ensure that responsible agencies are properly carrying out their required tasks as per the outcomes of the forum.

The Ministry of Infrastructure and Transport should:

- Instruct its line agencies to submit their annual reports for tabling in Parliament to enable thorough scrutiny by the relevant Parliamentary Standing Committee.
- Review the reporting requirements at the operational level by the lead agencies so that that they are more clearly defined to include periodic reporting within the financial year to ensure that the responsible Minister is adequately informed.

Theme 2: Governance Arrangements for monitoring and reporting

Audit observation

The Department of Transport has established sound portfolio-wide governance structure to support integrated decision-making. However, the absence of systematic reporting by agencies on the impact of nation-wide congestion management initiatives impedes effective oversight and coordination.

¹²² Exit meeting dated 03 October 2019.

Criteria

Cities will be beautified with development of recreation facilities and parks, urban gardens and better zoning. Traffic management plans will be enhanced to ease traffic congestion.¹²³

Evidences and analysis

“Governance relates to how the organisation is managed, directed and held accountable for achieving strategic and operational objectives. Effective governance is a pre-requisite of any successful organisation, but there is no definite model that will fit all circumstances.”

The Department of Transport's (DOT's) governance arrangements is focused on achieving better coordination of transport planning, monitoring policy and developments in the transport sector and policy advice, strategic planning and coordination, investment programming assistance and the overall direction of its activities. This includes cross-agency participation in the:

- National Transport Coordinating Committee (NTCC);
- National Transport Consultative Forum (NTCF); and
- Technical Working Group (TWG).

These arrangements were developed by the DOT in recognition of the coordination and monitoring role of the Department with emphasis on the need for proper planning, development, organization and maintenance of different transport modes. They were also developed as a useful mechanism for engendering coordination across the transport sector and would help reinforce personal relationships between agencies and help break down real or perceived barriers to communication. In addition, these governance arrangements were also set up to deal with Transport issues on a strategic level where issues from both public and private stakeholders can be addressed.

Although soundly based, these arrangements are compromised by the absence of agency responsibilities for congestion management, including systematic reporting by them on related initiatives. This situation impedes the DOT's capacity to effectively oversee, monitor and coordinate congestion management related initiatives across the portfolio. The existing governance arrangements are outlined in Table 5.3.

Table 5.3: Governance Arrangements for systematic monitoring and reporting on state-wide transport issues

Name	Description
National Transport Consultative Forum (NTCF)	<p>Membership – All members in the transport industry, including FRA, LTA, Fiji Police Force, as well as invited parties from civil society, academia and transport stakeholders.</p> <p>Purpose - establish a wide consultative mechanism for all stake holders and other interested group to participate in the development of effective government policies for the transport sector. The forum serves as a contribution to the recognition of the coordinating and monitoring role of the DOT and likewise establishing understanding and cooperative arrangement amongst stakeholders. The National Transport Consultative Forum (NTCF) was formerly established as the key external reference group of DOT's stakeholders. The Forum was first inaugurated in November 2000. An important aspect of the Forum is the emphasis on the indispensable need for proper planning, development, organization and maintenance of different transport modes (namely sea, air and land) which by right are a prerequisite for Fiji's economic and social development.</p>

¹²³ 5 year and 20 year Fiji National Development Plan, Paragraph 6, p.9.

Name	Description
<p>National Transport Coordinating Committee (NTCC)</p>	<p>Follow-up meetings on status of implementation are carried out after every forum session. However, there is no systematic reporting on the effectiveness of state-wide congestion management initiatives.</p> <p>Membership – Yet to be reconstituted.</p> <p>Purpose - foster inter-modal transport coordination and dialog, to identify and discuss emerging issues in transport infrastructure and service provision, to review the development of policy and planning in the sector and to monitor progress in the implementation of the Policy Action Plan and 20 year Transport Infrastructure Investment Plan. In addition, they are charged with overseeing the activities of the DOT.</p> <p>While the Committee could have advised the DOT on the progress and effectiveness of congestion management initiatives through its monitoring role, the Committee has been in abeyance for some time.</p>
<p>Technical Working Group (TWG) on Land Transport</p>	<p>Membership – It was made through invitation to the relevant stakeholders. It comprises of agencies who have a national impact on the land transport sector with regards to safety systems, research, management and technology, in collaboration with the community. For particular instances, additional stakeholders whose expertise may be required could also be in attendance upon invitation. Representatives from the following sectors may be encouraged to participate in the TWG, but not limited to:</p> <ul style="list-style-type: none"> • Identified transport stakeholders; • Insurance companies; • Suppliers, manufacturers and equipment; and • Government agencies. <p>Representation of the TWG will be reviewed annually or when required to ensure it continues to meet the Agenda. Members may resign from the TWG at any time by providing notice in writing to the Chair.</p> <p>Purpose – To provide an enabling framework for an efficient and affordable transportation system. The key focus is to provide appropriate policy advises and regulatory framework to create an investor friendly environment and satisfy the travelling needs of the community. This is to facilitate, promote and support trade and tourism, through transportation of goods and people.</p>

Source: OAG Analysis of comments from DOT, NTCF Reports for the years 2012, 2014 and 2018, DOT Website, Maritime and Land Transport Policy 2015 and Technical Working Group (TWG) Land Transport Terms of Reference (TOR).

The establishment of these governance arrangement is a positive development that has strengthened cross-government coordination and integration across the transport portfolio. However, as asserted above, the lack of a focused and systematic monitoring and reporting structure hinders the proper functioning of the established governance arrangements.

Causes

The absence of a state-wide transportation demand management monitoring and reporting system is due to the fact that congestion is not being recognized as a stand-alone goal. The core function of the DOT is to identify new areas of transport concerns.¹²⁴ With this in mind, a focus on state-wide congestion issues is warranted given the growing significance of the problem and its ongoing cost to Fiji's economy. This is

“Approaching congestion reduction as a stand-alone goal (perhaps in line or as a close second to safety) will help achieve other more attitudinal goals related to quality of life and economic vitality often used in transportation planning activities.”

¹²⁴ DOT website, <http://www.transportunit.gov.fj/index.html>

consistent with statements passed by the former Governor of the Reserve Bank of Fiji who estimates that traffic congestion is costing the economy almost FJ\$400 million a year in lost productivity (Box 5.1). His statement points to the view of lost productivity in that it takes approximately 2 to 3 hours to travel during peak hours, for those travelling from as far as Nausori. Considering a conservative stance of 2 hours travelling time, daily commuters between Suva and Nausori spend about 33 days¹²⁵ in a year wasted in traffic.

Box 5.1 Fiji Traffic woes seen as impacting the economy – Narube

“Well, in my view it is really bad, it is going to get worse and we unfortunately don’t have yet a solution.

Where I live I used to travel into the Suva City, the centre of Suva, it would take me around 15 minutes at the most but it is now taking me like 45 minutes to an hour at peak hours. That is how bad it is and I live relatively closer to the city. There are some that live as far away as Nausori, which is about 25 kms out of Suva, and they take 2 to sometimes close to 3 hours to travel in now in the morning, that is how bad it is. It has mushroomed quite fast in the last 2 years so it is really bad.

The major cost is the lack of production and productivity as you know and I have estimated that to around FJ\$400 million a year and that is an under-estimation. That is the traffic congestion that rolls out to towns and in the cities. This number in Fiji, this cost is quite high. The fuel cost and the environmental cost of pollution and of course the stress that it places on the workers, the hours that they are away from home - those are the multiple costs and my estimation is simply based on productivity alone.”

Source: Savenaca Narube, The former governor of the Reserve Bank of Fiji “Fiji traffic woes seen as impacting the economy” – Dateline Pacific, 21 February 2018, <https://www.radionz.co.nz/international/programmes/datelinepacific/audio/2018632946/fiji-traffic-woes-seen-as-impacting-the-economy>.

DOT has not elevated the goal of congestion reduction to priority level despite the degraded traffic conditions in the Suva-Nausori Corridor. This stems from the multi-transport modes that is under the portfolio of the DOT.

Lack of a stand-alone goal for congestion reduction consequently leads to the absence of a nation-wide congestion management plan.

The Department of Transport (DOT) generally oversees both the maritime and Land Transport spheres. However, emphasis is largely on maritime transport issues.

Effects

Absence of a focused systematic monitoring and reporting on nation-wide congestion issues entails that the governance arrangements that currently exist will not have an explicit focus on congestion management. Also, there will be minimal priority given to land transport related issues like traffic congestion management.

¹²⁵ 33 days = (2 hrs per trip*2 trips per day*((52 weeks*5 working days) less 10 days public holidays)/31 days.

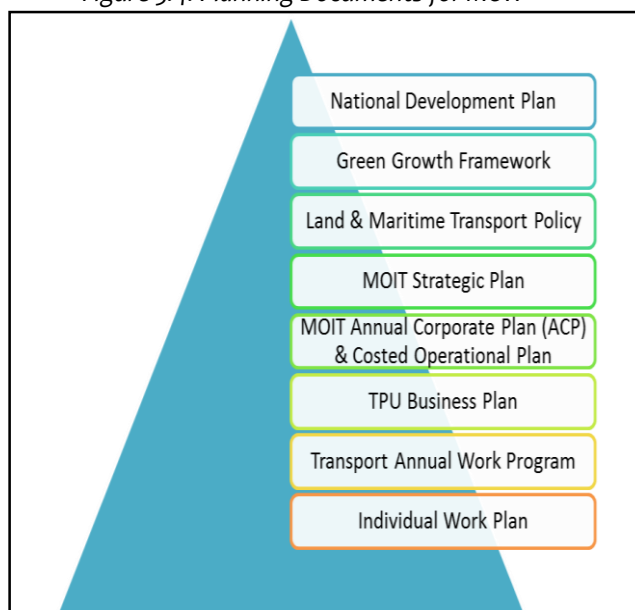
Good practices

Nonetheless, the Department of Transport in MOIT is aligned to its Strategic Development Plan (SDP), Costed Operational Plan (COP) and Business Plan (BP) in which monitoring of departments core outputs is done through the AWP. Figure 5.4 highlights the main planning documents for the MOIT.

The 2015-2017 SDP recognised the importance of having a monitoring and review plan. It draws that full reviews will be done yearly to assess significant progressive work undertaken.

Moreover, in the 5 year 2018-2022 SDP, the Minister commended the initiatives undertaken for the continued quarterly assessments and monitoring of the progress in the implementation of the SDP.

Figure 5.4: Planning Documents for MOIT



Source: OAG Analysis of Work Unit Plan 2017/2018, MOIT website and Annual Work Programs provided to Audit.

The Department is responsible for generating various reports from its respective core outputs. These reports are submitted through the Director to the Deputy Secretary and the Permanent Secretary. One of the Departments core output is the National Transport Consultative Forum of which a communique is issued which also highlights traffic congestion. The department deals with issues from the Communique in a holistic manner. To specifically monitor and evaluate on this element; the department is now working with Global Green Growth Institute (GGGI) to addressing this issue.

Furthermore, towards mid-2019, the MOIT had produced a Terms of reference (TOR) for a Traffic Congestion Mitigating Committee. A review of the Terms of reference noted that the Committee would be chaired by the Permanent Secretary Infrastructure and Transport or his representative and would comprise of or the representatives of the following members:

- Commissioner Fiji Police Force;
- CEO Fiji Roads Authority;
- CEO Land Transport Authority;
- Director Town and Country Planning; and
- Director Local Government.

In addition, the TOR captured the objectives of the Committee which included the following:

- To Improve efficiency by identifying solutions that can be implemented to mitigate traffic congestion and improve peak period travel time and traffic flows;
- Increase mobility by minimizing their impact and effects of traffic congestion; and
- Improving safety through implementing identified solutions relevant for Fiji's traffic conditions.

The TOR further outlined a work plan with a set of deliverables as captured in the table below.

Table 5.4: Traffic Congestion Mitigating Committee Work Plan and Deliverables

Phase	Meeting No./Date	Rationale	Deliverables
1 - Problem Identification (Information and Data Collection)	1 – 06 March 2019	To build and share data and information amongst members that will set the foundation for collaboration.	Members are requested to provide a 5 – 7 minutes presentation on their Ministry/Department/Organisations: <ul style="list-style-type: none"> • perspective on Traffic Congestion in Fiji; • Previous/Current work on resolving traffic congestion; and • Capacity and resources available that can be mobilized.
	2 – 13 March 2019		<ul style="list-style-type: none"> • Corridor Assessment and Observation; and • Public Consultation.
2 – Assessing Opportunities and Limitations of Identified Options	3 – date yet to be confirmed	To identify and select possible solution through prioritization.	Round Table discussion and resource personnel collaboration/workshop
	4 – date yet to be confirmed		Committee Final Report
3 – Presentations and Trials	5 – date yet to be confirmed	To secure approvals and carry out trials on identified corridors	To be confirmed
	6 – date yet to be confirmed		To be confirmed
4 – Full Implementation and Performance Monitoring	7 – date yet to be confirmed	To implement and carry out stringent monitoring to ensure system sustainability.	To be confirmed
	8 – date yet to be confirmed		To be confirmed

Source: MOIT Traffic Congestion Mitigating Committee TOR

The idea for the establishment of the Committee has been greatly acknowledged by the LTA, noting that it would be a good platform to address and mitigate the traffic congestion issue. Although the scheduled date of the Committee's first meeting was 06 March 2019, it is still yet to convene.

Expected benefits

Having a more focused systematic monitoring and reporting on nation-wide congestion issues would allow DOT's governance arrangements to have an explicit focus on congestion management.

A clear commitment to congestion as a primary goal would shift investment decisions. In addition, approaching congestion reduction as a stand-alone goal will help achieve more goals related to quality of life and economic vitality often used in transportation planning activities.

Such a focus is warranted given the growing significance of the problem and its ongoing cost to Fiji's economy.

FRA agrees¹²⁶ that traffic congestion is a serious problem to be addressed and that it negatively impacts the economy of Fiji. Despite the lack of coordinated direction from DOT, the FRA together with LTA and local police is in the process of rolling out clearways across Suva to ensure the maximum road reserve is available for traffic flow during peak hours. In addition, FRA is looking to implement one-way systems and other traffic improvement measures. The FRA would welcome an overarching DOT that is coordinating these and other future congestion reducing measures.

¹²⁶ Comments received dated 27 August 2019.

The DOT noted¹²⁷ that currently, their main priority is infrastructure in terms of renewing and building new infrastructure. FRA looks at strengthening the road network first because it will encompass both road traffic and safety. The DOT noted that LTA's main source of revenue to Government is the registration of vehicles. Another priority is road safety (reducing road fatalities) because at the moment, compared with other similar development countries, Fiji has the highest road fatalities. The idea is that strengthening the infrastructure will eventually tackle the road issues, congestion management being one of them. On our enquiry whether there was any way of making congestion management a primary goal, keeping intact the environment, infrastructure and road safety, since it is evident that everyone is facing the problem, we noted that one of the reasons that stakeholders do not place much importance on the issue of traffic congestion is because it is not set as a primary goal. In response, DOT pointed out that just because congestion management is not a priority, it does not mean that it is not important. The issue of traffic congestion is important but there are other issues that they have considered to be of national priority in Fiji's current situation.

The DOT further noted¹²⁸ that traffic Congestion is seen as an issue that can be dealt with nationally and mostly depends on a few factors, apart from agency coordination, Infrastructure (expanding existing road network); Import duty policies; need for vehicle quotas; need of a phasing out mechanism for old vehicles if the importation of vehicles has a flexible policy in place. The Maritime transport sector is also equally important as they will be dealing with bigger investments (i.e. vessels).

In addressing the audit recommendation regarding the identification of projects based on congestion reduction rather than other agendas, the DOT suggested¹²⁹ that we consider the Household Travel Survey Reports which is a project that tried to address demand side management issue; inter alia. The DOT also highlighted¹³⁰ another project that is currently in progress which is the sustainable Urban Transport Index project that deals with sustainability issues in the Transport sector. Finally, the DOT noted¹³¹ that they are currently working on a study of electric vehicles project that was based on the Household travel survey which looks at electric vehicles as an alternative means of transport.

The LTA agreed¹³² to the audit findings and recommendations and added that the TWG tends to be a bit patchy as it is not focused solely on mitigating congestion, whereas the Traffic Congestion Mitigating Committee was written with the intention of being a coordinating body but the only problem is that they have never met. LTA also agreed that there is weak monitoring and there is certainly no coordination. Though this is the current situation, with the introduction of the Traffic Congestion Mitigating Committee, there would be a series of standard operating processes that would be agreed to by all the agencies, so in other words, there would be a plan and monitoring would certainly be improved.

¹²⁷ Exit meeting dated 03 October 2019.

¹²⁸ DOT comments dated 11 October 2019.

¹²⁹ DOT comments dated 11 October 2019.

¹³⁰ DOT comments dated 11 October 2019.

¹³¹ DOT comments dated 11 October 2019.

¹³² Exit meeting dated 03 October 2019.

Recommendation

The Department of Transport, in consultation with stakeholders should:

- Review its governance arrangements and establish mechanisms for systemic monitoring and reporting by agencies on the progress and outcomes of state-wide congestion management initiatives;
- Properly establish the Traffic Congestion Mitigating Committee and convene with its meetings as soon as possible;
- Commit to congestion management and reduction through transportation demand management as a primary goal in the short or medium term congruent to achieving the long term vision of Sustainable Development.

Theme 3: Monitoring Congestion Patterns

Audit observation

The Technical Working Group on Land Transport found that traffic peak hours are from 7am to 8:30am in the morning and from 4.30pm to 6.00pm in the afternoon through traffic observations. However, there is no data available to enable a full assessment of the holistic pattern of congestion.

Criteria

Traffic Data Collection and projections of traffic volumes are basic requirements for planning of road development and management schemes. Traffic data forms an integral part in national economics and such knowledge is essential in drawing up a government transport policy for movement of passengers and goods by both government and the private sectors.¹³³

In order to assess performance, a continuous program of data collection and analysis will be required as one of the recommended high priority projects (traffic counts, travel-time surveys, bus patronage).¹³⁴

FRA is better equipped to undertake road network planning at a more focused area level, including such matters as urban transport and traffic studies and traffic demand forecasting.¹³⁵ Given the detailed network planning role that lies with the FRA, it should assume the responsibility for, amongst others, regular traffic counting programmes and traffic surveys, and should equip itself and train staff for this purpose. This is in line with FRA's plan to commence with nationwide traffic counting programme in 2015 and the similar role undertaken by the old Department of National Roads (DNR).¹³⁶

Evidence and analysis

Research from the United States suggests that road congestion increases with the population

¹³³ Botswana Ministry of Works and Transport, Roads Department, Traffic Data Collection and Analysis Guideline, Chapter 2, Section 2.1, p.12.

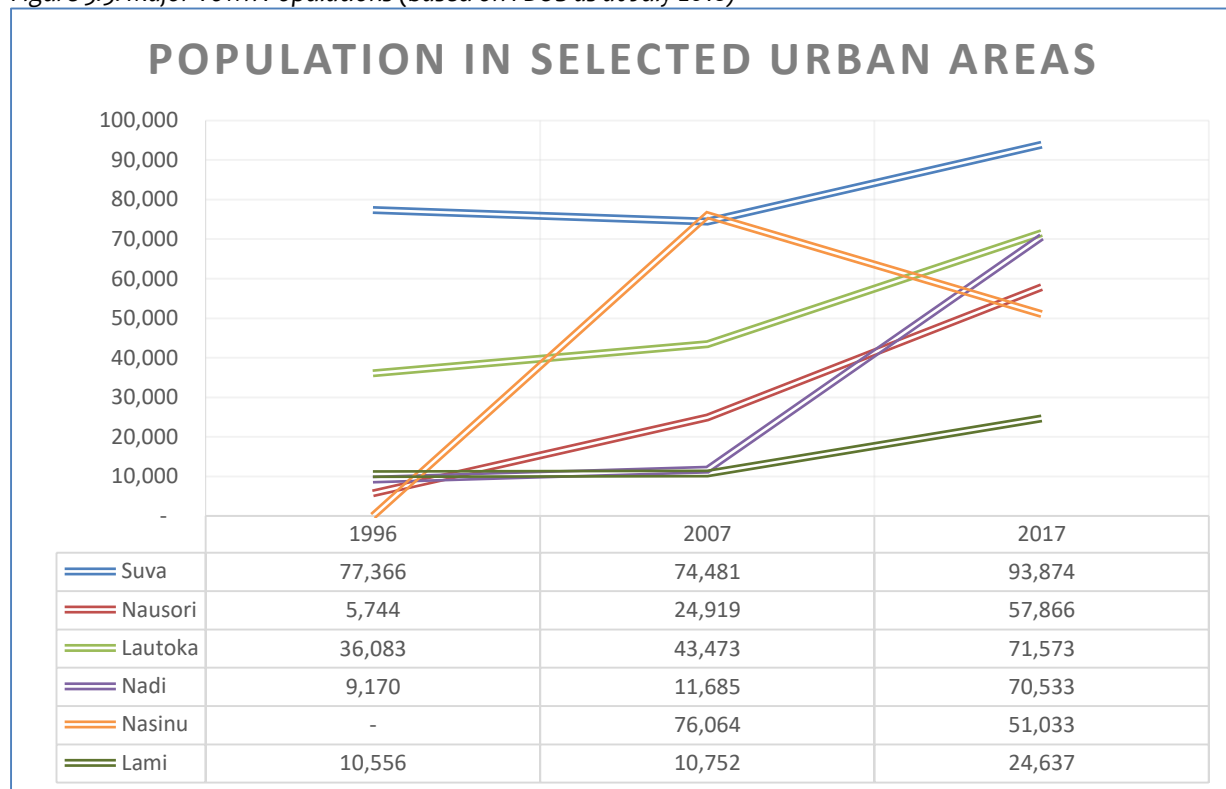
¹³⁴ FRA Greater Suva Transportation Strategy 2015-2030, Section 8.3, p.78.

¹³⁵ Land Transport Policy, Section 5.1.5, paragraph 2, p.29.

¹³⁶ Land Transport Policy, Section 5.1.5, paragraph 3, p.29.

size and density of cities.¹³⁷ Accordingly, the Greater Suva Transportation Strategy (GSTS) reports that land use projections indicate that GSA could grow from a current population of 280,000 to around 350,000 by 2030. This is somewhat consistent with statistics from the Fiji Bureau of Statistics (FBOS) as presented in the figure 5.5.

Figure 5.5: Major Town Populations (based on FBOS as at July 2018)



Source: Fiji Bureau of Statistics as at July 2018

According to the GSTS, the GSA comprises the councils of Lami, Suva, Nasinu and Nausori. Therefore, comparative figures from the FBOS revealed that population in the GSA (Lami, Suva, Nasinu and Nausori as per Figure 5.5 above) is 93,666, 186,216 and 227,410 for the years 1996, 2007 and 2017 respectively. This growing trend confirms the projections of the GSTS report in that the 2017 statistics already makes up more than half of the total projected number in the GSTS report of 350,000 by 2030.

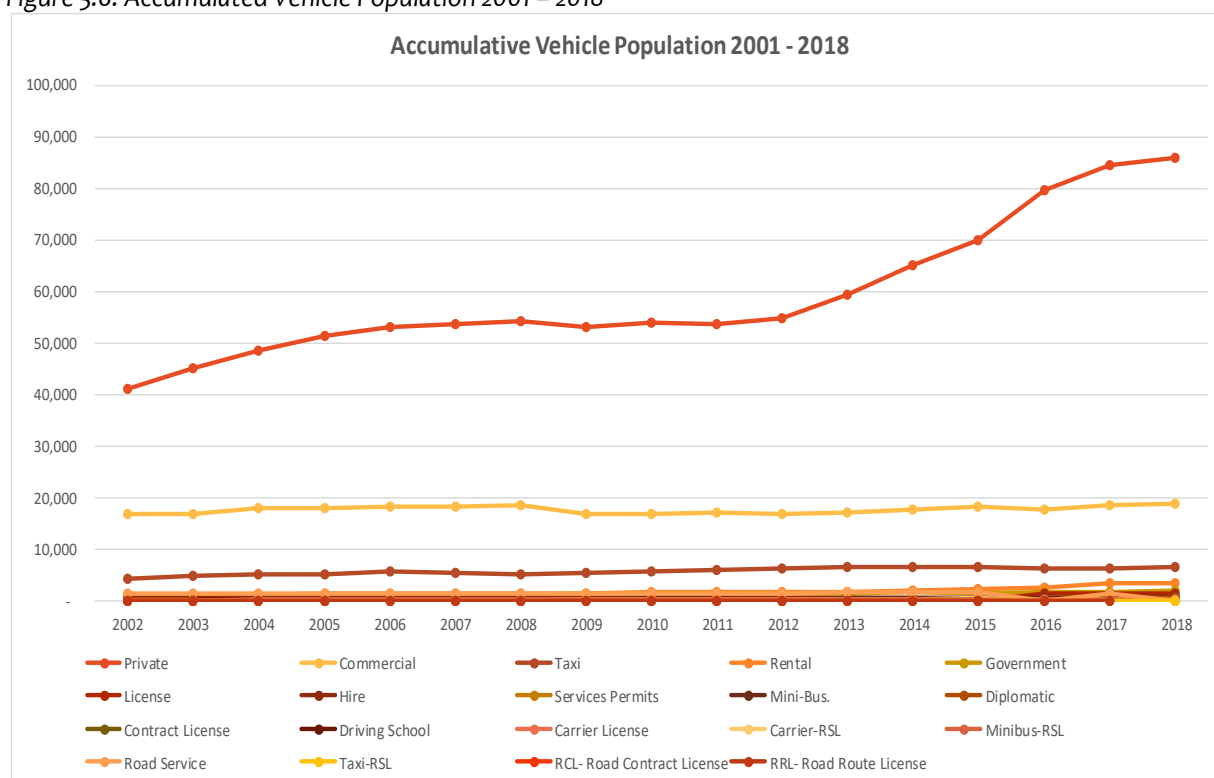
“Fiji has graduated to the group of upper middle-income countries. Fiji’s current per capita income stands at around \$10,000. Based on current economic performance, economic outlook and projected population growth, Fiji is likely to achieve a fourfold increase in per capita income by 2036.”

Apart from the increasing prosperity, the rate in which population growth increases, according to the GSTS report, is a leading cause of increased congestion in main urban areas. The same conclusions are drawn by many other research work carried out in the areas of congestion management. These include the 2006 report of the Victorian Competition and Efficiency Commission titled *Making the right choices: options for managing transport Congestion*, a 2011 article in Public Performance and Management review titled *Performance Measurement Considerations in Congestion Management Networks: Evidence from Four Cases* and a study of Singapore’s experiences on managing traffic congestion. The authors of these research work noted that one of the main causes of congestion is the rapid growth of population. Consequently,

¹³⁷ See the report of Schrank & Lomax (2005), which examines congestion in 35 cities in the United States, grouped by population into small, medium and large cities.

audit scrutiny of the total number of vehicle registrations in Fiji revealed that there is a close correlation between the rate in population growth in the urban areas and the growth rate of private vehicle registrations for the 10 years from 2007 to 2017 as shown in Figure 5.6.

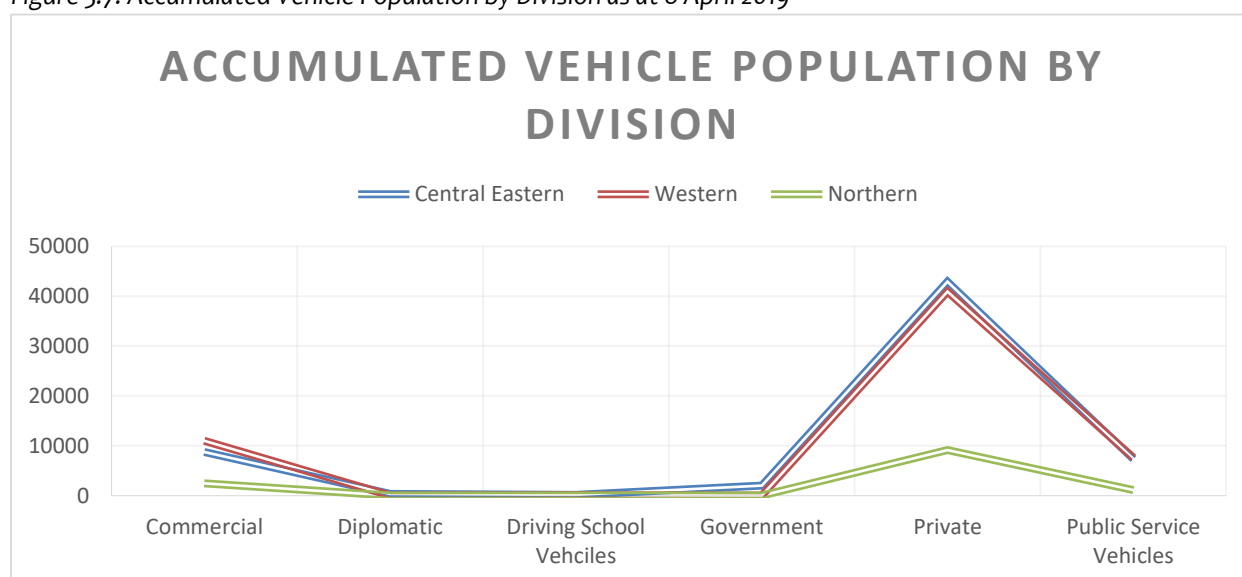
Figure 5.6: Accumulated Vehicle Population 2001 – 2018



Source: LTA Factsheet from <https://lta.com.fj/docs/default-source/lta-publications/lta-factsheets/factsheet-1-total-vehicle-registrations-final.pdf?sfvrsn=6>

Total vehicle registrations by Division provided by LTA (presented in Figure 5.7 below) revealed that total registrations of private vehicles still show an increasing trend.

Figure 5.7: Accumulated Vehicle Population by Division as at 8 April 2019



Source: Received from LTA on 08 April 2019.

With the above trends in mind, the existing traffic congestion faced by the GSA will intensify. Nevertheless, different regions of the GSA all attract different mixes of traffic for business, industrial and educational purposes. However, majority of trips are attracted from the Suva-Nausori corridor, which is the fastest growing population Centre in all of Fiji as shown in Figure 5.7 above.

Long queues of vehicles in the morning and afternoon, especially in and around the Suva-Nausori Corridor is a common sight. Travel times can occasionally reach three times those that would otherwise occur under free flowing traffic condition in the Suva-Nausori Corridor during the morning and afternoon peak periods. However, there is no data available to enable a full assessment of the holistic pattern of congestion, including volume of traffic and ratios of people to private cars.

On 4 March 2019, the audit team observed at the Suva Bus Stand, that for every hour during peak hours in the afternoon and through to the evening, approximately 4,000 Fijians, seated in the 65 passenger capacity buses, form part of the traffic outflow from the Suva City Area.

The State of Botswana, located in the African region, also an upper-middle income economy like Fiji¹³⁸, had not placed much importance on routine collection of traffic data for the development and management of the road network. This changed in the early 1970's when it was realized that a wide variety of information is required in respect of traffic characteristics for proper maintenance, planning, design, maintenance and management of the national road network. As a result, attempts were made to adopt suitable road traffic methodologies for conducting road traffic surveys that included the use of both manual and automatic traffic counters, together with computer analysis of the collected traffic data. It was for this reason that a guideline on traffic data collection and analysis was prepared.

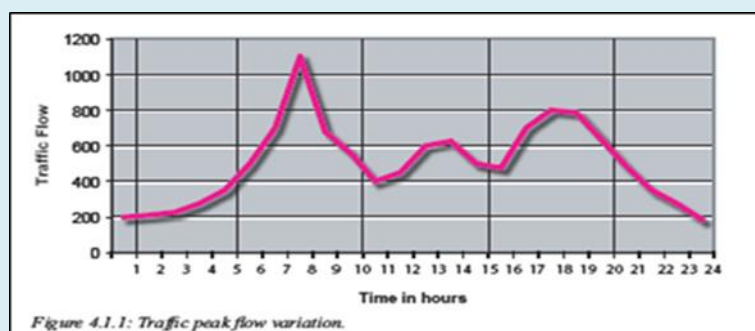
Some of the key areas in which traffic flow data is needed for development and management of the road network in Botswana include:

- (i) Determination of a programme of road widening needs and general improvement or strengthening of existing road through a programme of reconstruction and construction of new roads;
- (ii) to check the efficiency of the road network by comparing current traffic volume with the level of service or the calculated capacity; to plan prioritization of road improvements schemes;
- (iii) to assess economic benefits arising from road improvements; design and improvement of new existing/junctions; determination of warrants or the need for implementation of traffic improvement and traffic control measures, such as synchronised/coordinated traffic signals, stop signs, one way roads, no entry, etc.;
- (iv) to study future traffic trends and assisting in predicting traffic flows in the future for a given period; to classify roads on a functional basis; assessment of pavement performance through traffic surveys and period monitoring of selected sections;
- (v) ascertaining appropriate/optimal timings for maintenance interventions and rehabilitation needs of various roads countrywide; establish economic and social implications of design and feasibility studies of all development projects countrywide;
- (vi) Establish the use of the road network by vehicles of different categories, traffic distribution, etc.

¹³⁸ World Bank Country Classification, also accessed at: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

Box 5.2 Measuring traffic flow: the experience of Botswana

Typical hourly patterns of traffic flow, particularly in urban areas, generally show a number of distinguishable peaks.



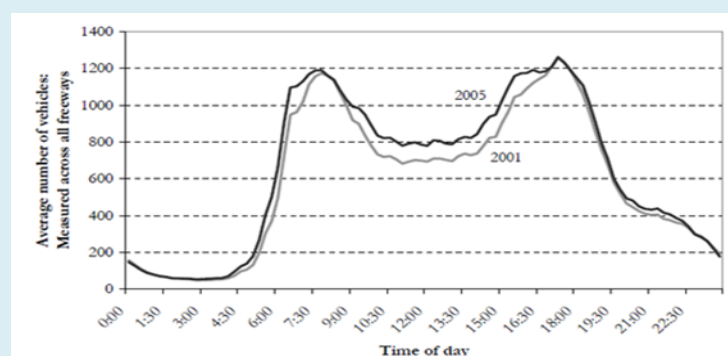
Peak in the morning followed by a lean flow until another peak in the middle of the afternoon, after which there may be a new peak in the late evening. The peak in the morning is often more sharp by reaching the peak over a short duration and immediately dropping to its lowest point. The afternoon peak on the other hand is characterised by a generally wider peak. The peak is reached and dispersed over a longer period than the morning peak. However, in urban satellite towns, the morning peak may be too early and evening peak may be too late in comparison to the principal towns without significant midday peak.

Source: Botswana Ministry of Works and Transport, Roads Department, Traffic Data Collection and Analysis Guideline, Chapter 4, Section 4.1, p.22.

Some important data collection exercises were undertaken, including a Home Interview Survey, Journey-to-Work Survey, as well as sample vehicle occupancy surveys and vehicle counts.¹³⁹ Unfortunately, none of these have been repeated on a regular basis since 2001, so the ability to analyse trends cannot be done formally.¹⁴⁰

Box 5.3 Peak spreading on Melbourne's freeways: the experience of Australia

Data suggests that the use of some freeways is approaching capacity.



Peak spreading appears to be occurring on the freeway system. While this data represents the average over the freeway network, parts of the network have experienced more peak spreading than others. Trans-urban considers that peak spreading on City-Link has been much more significant than on the rest of the freeway network.

Source: Victorian Competition and Efficiency Commission, *Making the Right Choices: Options for Managing Transport Congestion*, Final Report September 2006, p.74

Since its establishment in January 2012¹⁴¹, FRA has not undertaken any specific counts during peak hours. The last annual program of traffic counts was conducted by the Department of National

¹³⁹ FRA GSTS, Paragraph 3, p.81.

¹⁴⁰ FRA GSTS, Paragraph 3, p.81.

¹⁴¹ FRA Website, accessed on <http://www.fijiroads.org/about-us/>

Roads in 2009, thus availability of historical traffic volumes is limited.¹⁴² However, confirmation from FRA revealed that peak hour traffic data can be obtained by using LTA speed camera data and that traffic count data is available from September 2017 till date. We were advised that traffic counting data exists but only for a few locations within Viti Levu. In spite of having data for locations with LTA speed cameras and for some FRA Project locations, real robust traffic survey's including peak hour traffic counts through the cities and towns in Fiji have yet to be undertaken.

This is contrary to planned options outlined on pages 94 to 99 of the FRA GSTS. The planned options have been technically assessed using five different assessment methods (i.e. SIDRA Modelling, Aimsum Network Modelling, Road Safety, Traffic Engineering Design Principles and Best Practice Transport Planning and Transport Regulation).¹⁴³ Out of the 157 options identified in the 15 year strategic document, a total of 76 options deal with the issue of traffic congestion. Part of the 76 options is the traffic data collection program. Refer Table 5.5 for details.

Table 5.5: Option O3: Traffic Data Collection Program

Description	Develop and implement a program for yearly data collection within the Greater Suva Area, to allow effective traffic analysis and assessment of traffic flow over time. The recommended program would include annual traffic counts (as minimum, recommence the annual traffic counts undertaken by the Department of National Roads which ceased in 2009), regular tube counts at key mid-block locations, collaborate with the Fiji Bureau of Statistics to include transport related questions (i.e. method of travel to work) in their surveys, regular time surveys to assess congestions, and comprehensive one-day bus, mini-bus and taxi patronage counts.
Assessment Detail	Best practice for planning transport network improvement and analysing trends over time.
Responsible Authority	FRA /LTA /FBOS/ DLG
Key Issues	Traffic Congestion and Quality of Infrastructure.
Action (projects starting in next 10 years)	Tender study to consultants to develop and implement a program for yearly data collection within the GSA.
Duration	15

The above option suggests that a program was planned for yearly data collection within the GSA. Conversely, this anticipated program has not occurred since publishing of the 2015 GSTS. However, traffic counts are conducted on project basis.

According to Section 5.1.6 of the Maritime and Land Transport Policy of 2015, LTA has also become involved in areas such as road traffic surveys and automatic traffic counts and traffic management measures and schemes. This is due to the wide-ranging description of LTA's functions which creates potential overlap with the FRA.

Upon audit enquiry, LTA confirmed that traffic counts are conducted on a needs basis and does not eventuate on a regular basis.¹⁴⁴

Although varying in purpose and magnitude, traffic counts are done by both implementing agencies (FRA and LTA). However, data sharing between stakeholders does not exist. In order to avoid duplication of work and wastage of resources and manpower, especially for traffic management, traffic counting and surveys etc., section 5.1.6 of the 2015 Maritime and Land Transport Policy suggested that:

¹⁴² FRA GSTS, Paragraph 3, p.81.

¹⁴³ *Greater Suva Transport Strategy 2015 – 2030, paragraph 1, p.115.*

¹⁴⁴ Discussions with Manager Regulations on 18 February 2019.

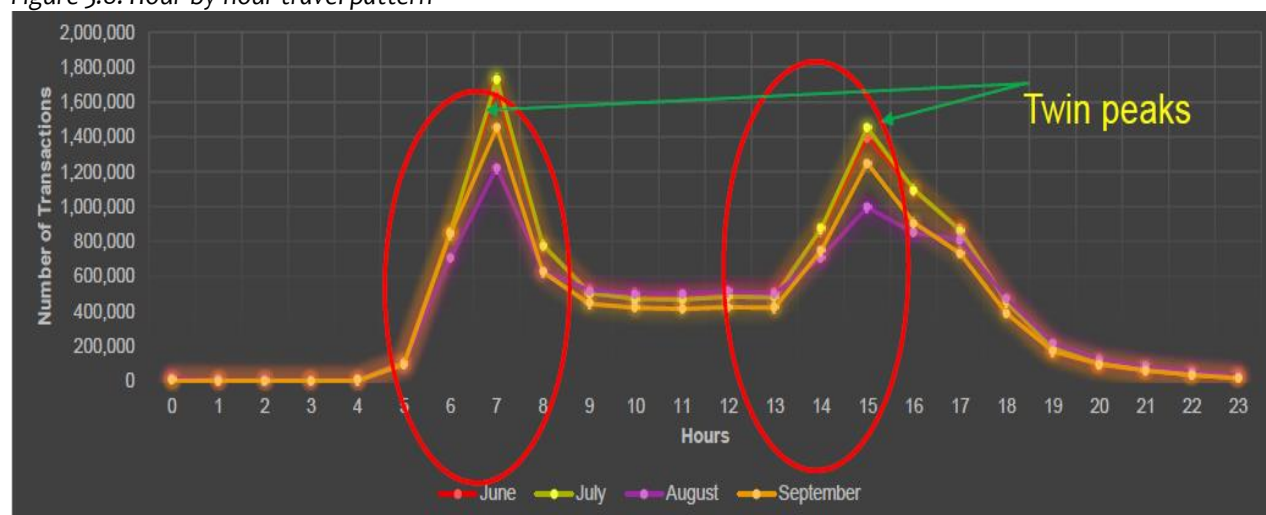
LTA's role be clarified by redrafting Sections 8 and 9 of the LTA Act, which set out its functions and powers, making clear that traffic management, traffic counting and surveys and heavy vehicle statistical and enforcement weighing lie with the FRA; also that economic regulatory policy for road transport is the responsibility of the DOT, with the LTA acting as an implementing and enforcement agency.

Contrary to the above suggestions in the policy document, redrafting of the LTA Act has not been done till date. Notably, in relation to enforcement weighing which the Maritime and Land Transport Policy identified to be the responsibility of the FRA, subsequent amendments to the FRA Act has repealed this function. The amendments to the Fiji Roads Authority Decree in 2014 which commenced on 5 August 2014, amongst others, included repealing the FRA's enforcement authority in vehicle weighing limits stipulated in Section 6 (d) of the Decree. Enforcement weighing is established under Section 73 (1(g)) which gives powers to a police officer, for traffic control purposes, to direct the driver of a motor vehicle to cause the weight of the vehicle and the load, including any trailer attached to the vehicle, to be ascertained by means of a weighing device.

Vodafone Fiji Limited, during the 15th National Transport Consultative Forum presented the use of e-ticketing as a tool for transport planning and policy making. According to the Vodafone presentation, e-ticketing records all bus transactions electronically and can be used in transport planning and policy making through:

- I. Hour by Hour Travel Pattern (as shown in Figure 5.8);
- II. Travel pattern per card type;
- III. Daily Travel Pattern (as shown in Figure 5.9);
- IV. Travel Pattern for Town/City (as shown in Figure 5.10);
- V. Travel Pattern by # of stages.

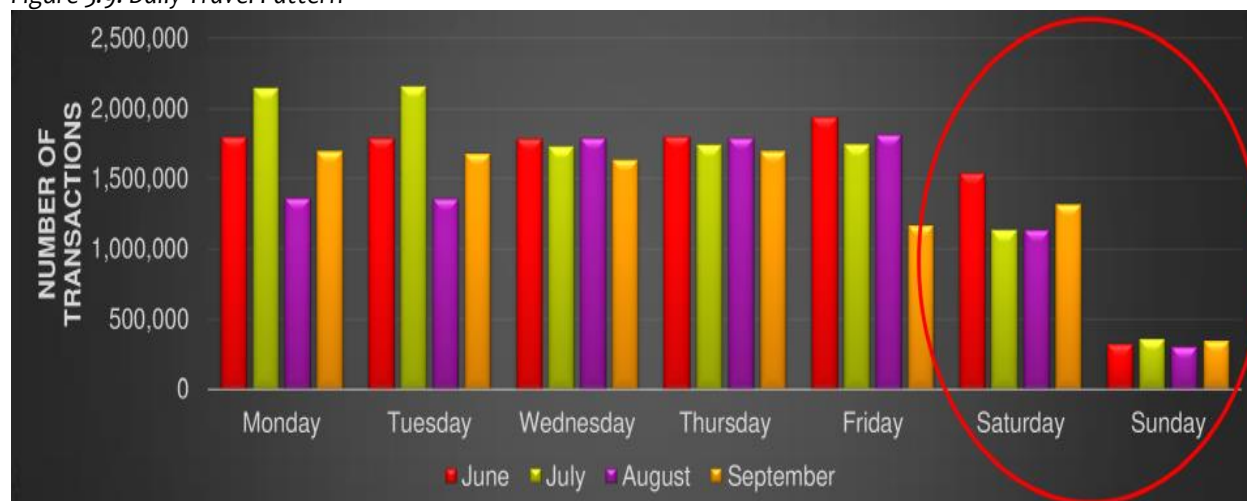
Figure 5.8: Hour-by-hour travel pattern



Source: Vodafone Fiji Limited Presentation at the 15th NTCF

From the above figure, it can be noted that transactions peak at 7am and 3:30pm, students add to the peaks and peaks do fall during the August school holidays. Also, there is stable but low transactions from 9am to 1pm and average passenger loading drops to 25-30 compared to 60 during peak hours of the day. From the analysis, Vodafone suggested opportunities to reduce bus size from 60 seater to 30 seater in some routes that do not have heavy loading. It was pointed out that by doing so, fuel costs and carbon emissions would reduce. Flexi work hours for retail sector could also be introduced so that there is ease of load and eventually easing congestion.

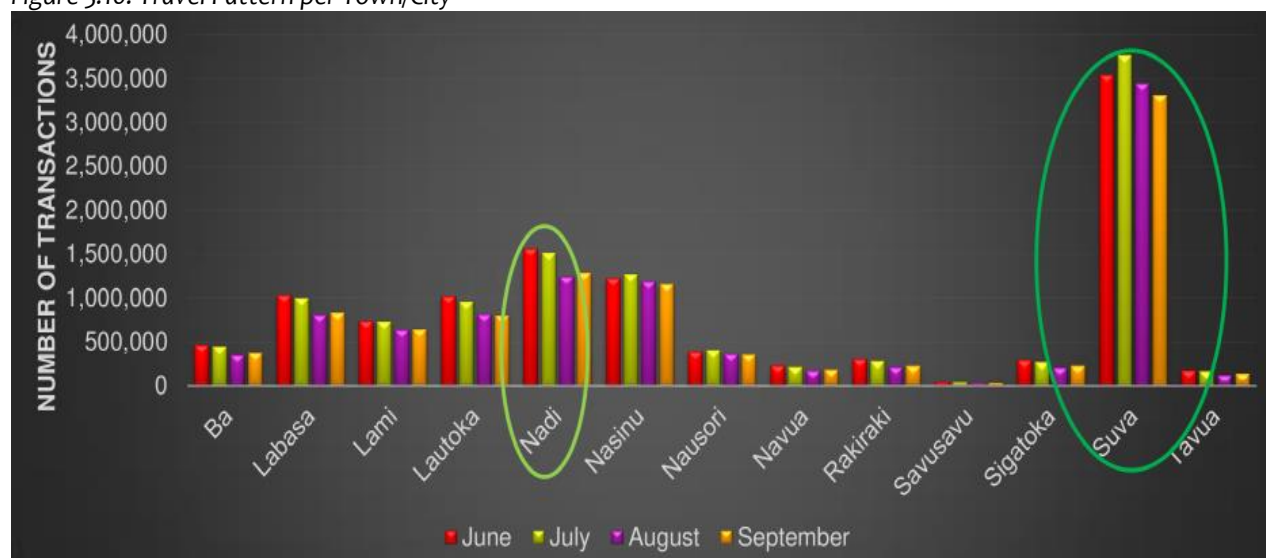
Figure 5.9: Daily Travel Pattern



Source: Vodafone Fiji Limited Presentation at the 15th NTCF

Vodafone presented with reference to the above analysis that transactions are lesser in the weekends with Sunday having the lowest number of transactions as students and some adults work five days. There was an average of 450,000 transactions for Monday's through Fridays, whilst there were 320,000 and 80,000 transactions for Saturday and Sunday respectively. With the analysis, bus operators can use this for maintenance scheduling in non-busy times.

Figure 5.10: Travel Pattern per Town/City



Source: Vodafone Fiji Limited Presentation at the 15th NTCF

Figure 5.10 shows that most transactions occur in the city of Suva, at around 3,500,000 transactions. Vodafone noted that the relevance of the data could be to determine where more traffic lights should be; location of more pedestrian crossings; where more police assistance is required; where more bus shelters should be built etc.

Causes

Discussions with officials at FRA revealed that traffic counts are performed using a project based approach. Therefore, traffic counts are not performed on a regular basis, rather they are conducted when data is needed for a particular project. In addition, plans to implement the option outlined in Table 5.5 above will be subject to the establishment of a Traffic Management

Unit within FRA. This setup was approved in 2018 and is currently awaiting recruitment of staff. However, it is still imperative to note that 3 years have lapsed and the program is yet to be undertaken.

Furthermore, the Land Transport Authority does not conduct any traffic counting as the responsibility solely rests with the FRA which lies in the ambit of their highway planning duties.

With relation to the re-drafting of Sections 8 and 9 of the LTA Act, there have been no reviews done for the Land Transport Act 1998 (“the Act”) in the past 5 years or more. There was also no consultation with the public or the stakeholders in the Land Transport Industry to review areas that needs to be addressed in the Act. However, at the beginning of 2019, the Legal Department sent copies of its submission to the Ministry of Infrastructure and Transport addressing some areas and relevant provisions in the Act that needs review.

Effects

Lack of available data hinders the ability of implementing agencies to conduct full assessment of the holistic pattern of congestion and to analyse trends formally. Delay in conducting traffic counts as per endorsed planning documents could prevent proper maintenance, effective planning, designing, maintenance and management of the national road network. Failure to properly demarcate responsibilities between implementing agencies could lead to duplication of work and wastage of resources as tasks carried out by one agency (i.e. FRA) can be shared with the rest of the land transport stakeholders.

Good practices

Although traffic counts are not conducted on a regular basis, (i.e. bi-annually or annually), as mentioned above, they are conducted as and when required. The latest traffic count data extracted was based on the traffic flow between the Suva and Nausori Corridor as per requests made from the world-bank regarding land transport impact on climate change. The traffic counts captures the number of vehicles, time intervals and vehicle type by axles. Please refer to **Appendix 7** for the results of the traffic count.

In the absence of traffic count exercises, data can be retrieved from the LTA speed cameras. Accordingly, we were informed that the cameras not only operate to catch speeding motorists but also for collecting traffic count data at all the locations where they are installed. Furthermore, it was also confirmed that the FRA GIS system contains the factual data. The LTA’s speed cameras operate 24/7 unless a breakdown occurs. FRA has a connection to LTA’s traffic camera data and automated reports are sent to FRA’s GIS Team to be updated.

FRA does not publish data obtained from LTA’s Speed Cameras but stores it on the GIS website for FRA’s internal usage only. Approval will need to be obtained from LTA before publication of the data. Traffic data collected are used by FRA for the design of road pavements and traffic data can also be used to set up traffic models that predict/simulate traffic flows and congestion. However, FRA does not currently have any traffic models in operation. Data is available on FRA’s GIS website.

Audit access of the above website noted that there are no traffic cameras in regions of Vanua Levu, however, traffic cameras are installed in the following areas of Viti Levu: Tuvu; Vitogo; University of Fiji; Lomolomo; Nadi airport traffic lights site 1; Nadi airport traffic lights site 2; Nadi back road; Nawai Police post; Vatudradra police post; Cuvu; Olosara – Andra School; Hideaway

resort; Maui Bay; Korolevu Police post; Navola; Naboro-Landfill; Montfort-St Thomas Primary School; Lami; Nakasi; and Manoca. Figure 5.11 presents the exact locations on the ground.

Figure 5.11: Locations of LTA Speed cameras



Source: Extracted from FRA GIS website, accessed on <http://bit.ly/2IERtX>

The following Table 5.6 captures the number of vehicle counts for a particular day from each of the camera locations noted in Figure 5.11 above.

Table 5.6: Vehicle Counts Data from LTA Speed Cameras

No.	Camera Site Location	Date of latest traffic count	Small vehicles	Large vehicles	Total vehicles	Total Violations	Violation type
1	Tuvu	07 April 2019	3,790	179	3,969	49	Speed violations
2	Vitogo	26 February 2019	9,857	1,237	11,094	13	Speed violations
3	University of Fiji	07 April 2019	10,759	324	11,083	76	Speed violations
4	Lomolomo	28 March 2019	13,295	1,592	14,887	8	Speed violations
5	Nadi Airport Site 1	07 April 2019	6,349	258	6,607	44	>1 – red and speed violations; >14 – red violations; and >31 – speed violations.
6	Nadi Airport Site 2	26 February 2019	8,980	898	9,878	35	>1 – red and speed violations; >14 – red violations;

No.	Camera Site Location	Date of latest traffic count	Small vehicles	Large vehicles	Total vehicles	Total Violations	Violation type
							>22 – speed violations.
7	Nadi Back Road	28 March 2019	13,505	1,047	14,552	18	Speed Violations
8	Nawai Police Post	26 February 2019	4,864	643	5,507	20	Speed violations
9	Vatudradra Police Post	26 October 2017	5,259	562	5,821	158	Speed violations
10	Cuvu	03 April 2019	3,949	650	4,599	2	Speed violations
11	Olosara-Andra School	Not active – no data					
12	Hideaway Resort	Not active – no data					
13	Maui Bay	07 April 2019	3,117	146	3,263	22	Speed violations
14	Korolevu Police Post	17 December 2018	3,675	470	4,145	42	Speed violations
15	Navola	07 April 2019	2,744	131	2,875	235	Speed violations
16	Naboro Land fill	21 January 2019	4,875	596	5,471	53	Speed violations
17	Montfort-St Thomas Primary School	Not active – no data					
18	Lami	07 April 2019	8,784	309	9,093	76	Speed violations
19	Nakasi	26 February 2019	22,054	1,866	23,920	147	Speed violations
20	Manoca	08 October 2017	8,753	384	9,137	128	Speed violations

Source: Extracted from FRA GIS website, accessed on <http://bit.ly/2IERrtX>

Audit scrutiny of the traffic counts noted that 14 out of the 20 cameras had latest data dated between 21 January and 07 April 2019, while 3 cameras were inactive entailing that there were no data available. The rest of the 3 cameras had traffic data counts from 26 October 2017 to 17 December 2018.

We were advised that the camera locations shown on the FRA GIS website are images of polls. There are only a limited number of cameras installed. Hence, these cameras are rotated between the 20 polls. For this reason, some of the sites have latest figures while others do not, as the rotation of the cameras between the polls leaves the rest of the camera polls as dummy polls meaning they would be inactive. The polls are manually uninstalled and installed randomly between the available polls during the rotation process.

This indicates that data from traffic cameras may not be complete and cover all regions at any given point in time.

Expected benefits

Traffic data will enable government to draw up rational transport policy for movement of passengers and goods by both public and the private sectors.

Review of the LTA Act and FRA Act can prevent any overlapping of functions by the two agencies. This will ensure that resources are not wasted due to duplication of work.

FRA agrees¹⁴⁵ that the existing traffic congestion will intensify with increasing population unless successful policies are implemented. With the arrival of the FRA traffic engineer in March 2019, FRA now have the in-house capability to conduct traffic counts and are deploying the equipment on a regular basis to collect data from around Fiji. FRA welcomes the suggestion to review the FRA and LTA legislation as there are discrepancies over vehicle weight enforcement responsibility.

LTA confirmed¹⁴⁶ that they do not carry out traffic counts as it is the function of the highway authorities which is the FRA. However, LTA does have speed cameras which are very effective for traffic counts. The LTA also confirmed that they provide data to the FRA on a monthly basis. So the data from all the speed cameras around Fiji are fed electronically to the FRA which assists the FRA in their highway planning. However, LTA noted that the FRA also have the manual recorders as well. The manual recorders are relatively easy to move around and LTA does not have a huge network of speed cameras, the FRA have supplemented the information that they get from the speed cameras with these manual data recorders, or traffic counters.

LTA also pointed out the need for some sort of a Corridor Movement Study (i.e. the number of people travelling into the City during the morning peak and conversely, out of the City in the evening peak) and also the modal share of commuters (i.e. percentage of people using buses, taxis, minibuses, private vehicles etc.). LTA noted that this is something that really needs to be done. In addition, the LTA noted traffic counts are also not performed on a needs basis but rather what is conducted is called load counting but that is more to inform the Authority on whether or not there is a need for service provision and that is done manually where someone is sent out to manually count people in the bus, mini-bus etc. There are gaps in this exercise because they do not capture the whole traffic movements, rather specific journeys on the Suva Nausori Corridor are captured.

Upon our enquiry¹⁴⁷ on how coordination is conducted when traffic management is a function of both the LTA and FRA, LTA responded that one of the most effective ways is through the Operational Control Centre (OCC) concept but there will need to be a more narrow definition of the FRA's role (who are essentially the highways authority, responsible for building and maintaining Fiji's roads) as well as the LTA's role. The LTA is mainly the Regulator for Land Transport but there are significant gaps in the legislations which prevent them from acting as a proper regulator. For example:

- I. The LTA is not a commissioning agency – they cannot commission someone to run a bus service in a particular route. What they do is, if there is a need to, in the event that a bus company is failing, the LTA puts out an expression of interest which is in itself very weak because they can only award a temporary contract under what is called Section 66 for a maximum of 90 days. The LTA needs to be a commissioning agency to be able to award contracts for a period of up to 5 years and not 90 days only because most bus operators in Fiji are not interested in 90 days as they have to finance their business, employ staff, buy

¹⁴⁵ FRA comments dated 27 August 2019.

¹⁴⁶ Exit meeting dated 03 October 2019.

¹⁴⁷ Exit meeting dated 03 October 2019.

buses and that is why the LTA is very keen on having commissioning powers to award contracts to bus operators, mini bus operators for periods of up to 5 years. That would give the LTA a very much stronger hand in terms of regulating the market.

- II. Safety net of having the LTA as the Operator of Last Resort does not exist in Fiji. A number of rural bus operators are lurching on the edge of collapse. This is because the patronage levels in the rural areas are understandably lower. The operating conditions are much more strenuous because a lot of the buses run over unsealed roads, difficulties faced when it rains etc. Consequently, the market in the rural areas in Fiji is not growing, it never has grown, it is seemingly the same today as it was 15 years ago or maybe even worse because of the number of private cars as many rural dwellers are able to afford private cars. Hence, they elect not to travel around in buses but prefer to travel in the comfort of their own cars with their families and friends. There are probably 10 to 12 very high risk bus operators in Fiji and if one of those operators collapses, there would be a situation in Fiji where large sections of the rural population would be completely disenfranchised and currently there is no mechanism for dealing with that. Whereas if Section 66 were amended to allow the LTA to award contracts, for periods of up to 5 years, the LTA could then become the Operator of Last Resort.

LTA also agreed¹⁴⁸ with the audit recommendation that the LTA and FRA legislation should be reviewed so that responsibilities are properly demarcated in order to prevent overlapping function between FRA and LTA. LTA further noted that there needs to be a clear delineation of responsibilities and at the moment there are still grey areas evident. For example, gazetting parking through Fiji lies with the FRA as well as all other gazetting items such as urban clearways, signage etc., except for those pertaining to speed limits which is the only limit of LTA's gazetting powers in relation to highways. Other challenges are regarding the roads within the local government areas which are managed by the FRA. Recently the taxi associations have been writing to the LTA, requesting to set up taxi bases in various locations. However, the LTA have no responsibilities whatsoever for taxi bases. If the requested location to set up the taxi base is within a city or a town, it is the local authorities and if it is outside the local government area, it is the under the jurisdiction of the Department of town and country planning. There is a misunderstanding about who does what and who is responsible for what and it would be tremendously beneficial to the likes of LTA for that to be spelled out. Therefore, the LTA have now produced info-graphics capturing the process that is set out in the legislation which are distributed to road users.

Recommendations

- Traffic counts should be conducted on a regular basis which includes the actual number of cars on the road during peak hours of the morning and afternoon.
- The LTA Act and FRA Act should be reviewed holistically so that responsibilities are properly demarcated in order to prevent overlapping of functions between FRA and LTA.

Theme 4: Monitoring Network Efficiency

Audit observation

The DOT successfully completed Phase 1 and Phase 2 of the Household Travel Survey (HTS) in 2015 and 2018, respectively. A comparison of the 2015 and 2018 survey results revealed that there were

¹⁴⁸ Exit meeting dated 03 October 2019.

longer trips (based on time) in particular work trips which had increased from an average of 28 to 32 minutes (14% increase). Although this analysis is acknowledged, it lacks clear performance measures and targets or key parameters such as measuring delays and speed, including the duration of peak periods, level of satisfaction, reliability and quality of road user information, etc. for monitoring the performance of the road and transport network in Fiji.

Criteria

The intended functions of the DOT, as detailed in the World Bank funded technical assistance that led to its establishment were:

- I. Policy analysis and advice on measures to improve the performance and efficiency of the transport sector;
- II. Strategic planning, including responsibility for implementing and updating the Fiji National Transport Sector Plan 1993;
- III. Programme formulation and evaluation assistance to the line agencies; and
- IV. Develop information systems and tools for transport system performance and monitoring, including a transport database and multi-modal transport modelling capability.¹⁴⁹

Evidence and analysis

In 2015, Fiji had successfully completed its first ever nation-wide household travel survey commissioned by the Department of Transport (DOT) of the Ministry of Infrastructure and Transport as a means to establish a sound basis for assessing transport planning interventions and improving decision-making.

The data gathered from the household travel survey could be used to:

- Present a snapshot of how Fijian's travelled in 2015: the modes of transport used, the distances travelled, the purposes of the trips;
- Understand differences in travel patterns between urban, rural and maritime areas;
- Estimate national vehicle car ownership (and verify LTA data);
- Measure the contribution of vehicles to Fiji's greenhouse gas emissions;
- Review children's travel to school patterns;
- Assess people's use of active transport modes (walking, cycling and public transport); and
- Serve as a data source for definition and measurement of performance.

In 2018, Fiji's second Household Travel Survey was completed. It was a repeat of the successful first HTS in 2015.

Section 2.2 of the 2018 HTS report highlighted a comparison of the 2015 HTS (an estimated 2015 population, based on the 2007 Census geographic of households) and the 2018 HTS (based on the 2017 Census) and noted the following results:

- Increased trip making in urban areas (40% rise);
- Longer trips (based on time), in particular work trips (14% increase);
- Increased household car ownership (16% to 23%); and
- Low vehicle occupancy for work trips (two thirds of vehicles carry no passengers).

Based on the above results, the report confirmed that the rise in urbanisation and the influx of motor vehicles into Fiji is evident not only on the streets of urban areas like Suva, but also in the

¹⁴⁹ Maritime and Land Transport Policy 2015, Section 1.1.17, Paragraph 2, p.28.

HTS data, which can be used to quantify the impacts on the transport network. With this analysis, the report advised that these are worrying signs for congestion in urban areas should vehicle ownership continue to rise and the rural population continue to migrate to urban areas. The report further suggested that building new or expanding existing roads will not be sufficient to tackle congestion and the Ministry of Infrastructure and Transport will need to provide guidance through transport policy and initiatives which lead to a more efficient transport network.

Box 5.4 Monitoring and Evaluating network efficiency: the experience of Victoria

VicRoads measures overall performance of the road network through a survey run twice a year, with results reported annually in its Traffic Monitor publication. VicRoads uses this information to inform road users, authorities and government of travel conditions, including planning for operational activities that seek to minimise congestion on an ongoing basis. The survey identifies a wide range of indicators measuring travel times, delays and speeds, including the duration of peak periods, along with other metrics that provide useful insights into the performance of the road network.

Source: Victorian Auditor General's Office (VAGO) April 2013 Audit Report on Managing Traffic Congestion.

Though the data collected in the HTS is the baseline for solving a lot of policy issues through the use of the Tableau software to provide analysis and answers to policy questions, it was noted that the survey does not measure the network efficiency of Fiji's roads as it lacks clear performance measures and targets such as level of road user satisfaction etc.

Traffic surveys for the FRA are not conducted on a periodic basis but rather are conducted on a needs basis during the investigation phase for projects that require accurate traffic survey data. The information obtained from traffic surveys allows pavement designs to be undertaken. For Asian-Development Bank (ADB) Funded Projects, traffic surveys are needed for economic evaluation. The FRA is yet to publish any information gained through the undertaking of traffic surveys, but this data can be provided upon request by interested parties.

Causes

The aim of the HTS was to get information about people's travel behaviour for one 24 hour day, and also trying to base the information around people's day-to-day activities. A review of the 2018 HTS report revealed that Fiji has made limited use of decision-making support tools such as comparing savings in one area, for example travel times, with capital and operating costs and environmental impacts and recommend parameters and values to be used consistently for all transport projects.

Therefore, the report pointed out that it was not surprising to see that there are no agreed guidelines on transport related parameters to use for modelling and evaluation purposes. The report further noted that some of these parameters such as trip generation rates by household type and region, vehicle ownership, vehicle occupancy, environmental impacts (externality unit cost per km), population growth rates, and expansion factors (i.e. peak hour today), can be extracted more or less from the HTS results and other existing data. However, other key parameters require additional considerations and data collection except they were not part of the scope of work for the consultants who prepared the 2018 HTS report. Nevertheless the consultants delivered some suggestions for these perimeters which included:

“In order to be able to evaluate the vulnerability and the reliability of a network, a measure that can quantifiably capture the efficiency/performance of a network must be developed. There is not one measure, or one set of measures, that can be considered the best for all transportation agencies. In each case, the performance measures used must depend on the specific conditions of an agency, its goals, its resources, and its audience.”

- Social Value of Travel Time Savings (business and leisure) for evaluation;
- Behavioural value of travel time savings (business and leisure) for modelling purposes;
- Value of access, transfer and wait times related to In Vehicle travel time;
- Vehicle operating costs for different modes;
- Accident costs- fatalities, and injuries or varying severity;
- Transport elasticity's (including total demand mode-specific estimates for costs and times);
- Traffic growth rates; and
- Active transport parameters (benefits to society of walking and cycling).

From the sampled Enumeration Areas (EAs) identified in the HTS 2015 report in which samples had been selected from Viti Levu, Vanua Levu and Kadavu, study areas are more dispersed. If measuring road network efficiency was an aim of the study, selection of sampled areas would be less dispersed with more focus on areas with high population density and have access to arterial roads.

Traffic surveys conducted by the FRA have been conducted for projects that require information for the design phase. As such, results of Traffic surveys conducted by the FRA are considered to be confidential information and proper approvals need to be obtained for publication of the survey results. Traffic survey information is generally used for internal FRA purposes or provided to funding agencies and it is only for selected projects that information is communicated to the Minister.

Therefore, since user's needs vary from one requesting agency to the other, the use of these survey results for measuring targets of network efficiency and congestion management initiatives may be disregarded in totality.

Effects

The lack of clear performance targets and priorities to measure overall effectiveness of the road network impedes on potential congestion management.

Good practices

Though the HTS results was not able to measure targets of network efficiency and congestion management initiatives, it does indicate that walking is the most commonly used mode of transport for all trips in Fiji.

Box 5.5 Short Walk Trips

Results indicate that walking is the most commonly used mode of transport for all trips in Fiji. However, the results also suggest there may have been some under reporting of short walk trips. This is based on the observation that a total of 374 out of 1,974 full responding households are recorded as making no trips at all on their travel day; 4,161 people out of 8,161 fully responding people are recorded as not making any travel at all on their travel day.

There is no Fiji travel data to benchmark this data against, but follow up checks suggest respondents' perceptions of 'travel' differ to the HTS definition of travel. Substantive trips by bus, car or long walks are nearly always considered 'travel', but short walk trips (<300m) were often not considered to be 'travel'. This is not uncommon.

An internal review indicates the very old and the very young were most likely to record no travel on their travel day. But otherwise there is no apparent bias across any other variable – area, days of the week, week of the travel survey, gender etc.

In many travel surveys, the main concern is to capture travel which could, potentially, be made by other modes. In these situations it could be argued that very short walk trips should be excluded from the survey as they can create significant bias and may be of little value towards the objectives. It should also be noted that collection and analysis of a significant number of very short trips has resource implications.

It is therefore recommended that the Department of Transport considers the use of the data on short walk trips for each area, and develops guidance to any future HTS on the length of walk trips to be captured. It is also recommended that a small in-depth follow up survey is conducted in the next HTS to investigate the suspected under-reporting of short walk trips.

Source: National Household Travel Survey, Fiji 2015, Chapter 9, p.58.

FRA agreed that the household travel study was an excellent tool. However, they also agreed to the audit findings that more is needed to understand travel times, directions, durations, speeds etc., and would want the DOT to complete a further extension to this study which could be coordinated with other authority works e.g. FRA traffic counts, LTA carpooling study etc. They further suggested that the exercise was to be driven by the DOT.

The DOT noted¹⁵⁰ that the HTS is a planning tool. After launching the report, it is then distributed to transport agencies for their use in planning. FRA may use results in their infrastructure plans, while the LTA may use it in the issuance of public service permits. The DOT further noted that network efficiency is not something that is done through or determined by the HTS. It would be a different study all together which should incorporate an analysis, including Traffic Impact Assessments (TIAs), analysis of the ratio of vehicles to length of roads, traffic counts etc.

The HTS is to determine the travel behaviour patterns of the people of Fiji so that transport agencies would be able to determine or plan according to these patterns.

LTA confirmed¹⁵¹ that they do not carry out traffic surveys. Nonetheless, they are aware of the Household Travel Survey that was conducted by the Ministry of Infrastructure and Transport.

¹⁵⁰ DOT comments dated 11 October 2019.

¹⁵¹ Exit meeting dated 03 October 2019.

Recommendations

The DOT should:

- Make efforts to understand transport users need. An effective tool would be through running of surveys with which results are able to improve the road and transport system in ways that address these needs. In addition to measuring travel times which the 2015 and 2018 HTS has appropriately captured, future surveys should include a wide range of indicators, in consultation with stakeholders such as measuring delays and speeds, including the duration of peak periods, level of satisfaction, reliability and quality of road user information, etc.
- Ensure that key parameters identified by the Consultants of the HTS reports are considered and form part of future survey engagements.

Theme 5: Centralized System for Data Collection, Analysis and Sharing

Audit observation

The intended functions of the DOT were, amongst others, to develop an information system and tools for monitoring the performance of the transport sector. This ideally included the establishment of a transport database. The data in the national transport database was to be made accessible to all stakeholders. Therefore, in order to make the most effective use of the data in the database, it needs inputs from all lead agencies in the transport sector. However, there is lack of collaboration and coordination between lead agencies to integrate all related data in the centralized national transport database.

Criteria

The intended functions of the DOT, as detailed in the World Bank funded technical assistance that led to its establishment were, amongst others, to develop information systems and tools for transport system performance and monitoring, including a transport database and multi-modal transport modelling capability.¹⁵²

In order to make informed transport planning and policy decisions, the Ministry of Infrastructure and Transport (MOIT) through the Department of Transport (DOT) commissioned a study to compile a snapshot of how, why, where and when Fijians travel. Collecting such data will establish a sound basis for assessing transport planning interventions and improving decision-making. To support this and make data accessible to all stakeholders, a data portal has been created at www.transportfiji.info.¹⁵³

Evidences and analysis

As part of the DOT's functions to oversee the land transport sector at the strategic level, they

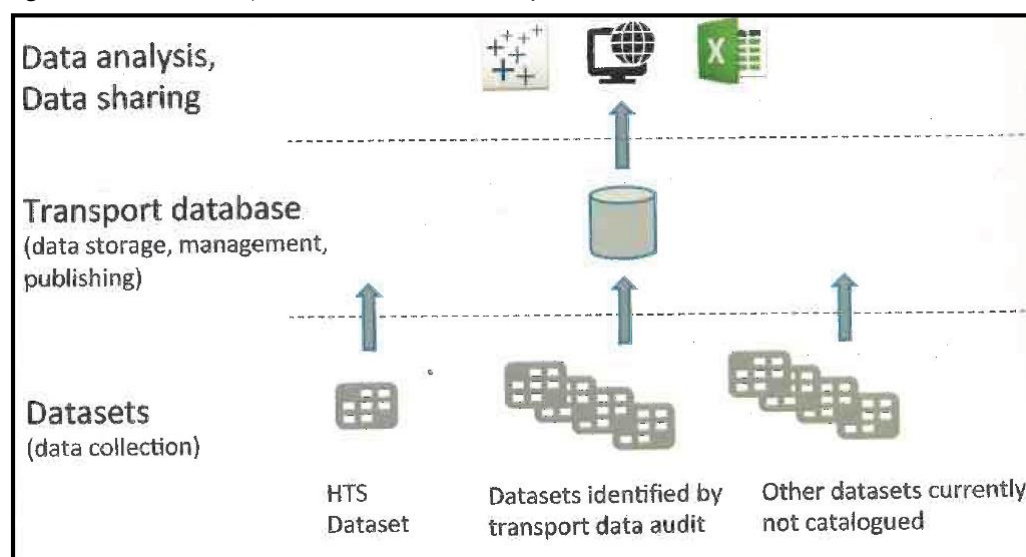
¹⁵² Maritime and Land Transport Policy, Section 1.1.17, p.28.

¹⁵³ Fiji National Transport Planning Database, Final Report, Paragraph 1, p.7.

recognize that good transport policy making, relies on a sound information base. With a large number of options identified in various policy and strategic documents of the lead agencies, and the predictability that the options and the factors that influence choices between them will evolve with variability, project evaluation and decisions need to be based on up-to-date information. There is a clear need for better data to inform choices on managing congestion.

The National Transport Planning Database uses the Tableau software to help answer policy questions. The data from the Household Travel Survey (HTS) and other existing transport data sources, provides guidance on transport policy. The transport database catalogues and integrates transport related datasets. Amongst other things, the functional scope of the data portal includes the ability to combine multiple datasets together for further analysis. The database therefore can be used as a monitoring mechanism to measure the performance of the land transport sector according to the current established policies. The transport database is essentially a folder of files stored on the servers of the Ministry of Infrastructure and Transport. This data then links to Tableau software for analysis, to the transport data portal for data sharing and downloading of raw files in csv format as shown in Figure 5.12.

Figure 5. 12: Data workflow in the National Transport Database



Source: Fiji National Transport Planning Database, Fiji Report April 2016.

The transport data portal is located at www.transportfiji.info and is password protected for data security purposes.

A review of total expenditures revealed that the MOIT spent \$1,440,363.31 (i.e. 59%) from years 2015 till date, out of the \$2,432,668, for the setup and operation of the database. Expenditures on the database include purchase of the software which requires annual licensing, staff training and hiring enumerators and supervisors for carrying out phase 2 of the Household Travel Survey.

According to the Acting Senior Transport Planner at DOT, the licence for the database software has to be renewed on an annual basis, thus, at the time of our audit, the database had not been updated, pending license renewal. Audit review of the National Transport Database noted the following reports, documents and data:

Table 5.7: Information sighted in the Fiji National Transport Database

Information Type	Accessed Information	Publisher	Year	Accessibility
Project Reports	Household Travel Survey 2015 – Final Report;	Predict Consulting	2015	Yes
	National Transport Planning Database – Final Report	Predict Consulting	2015	Yes
	Review of the Fiji Maritime and Freight Sector.	Predict Consulting	April 2016	Yes
Transport Data	Fiji Household travel Survey 2015 – Fiji travel Behaviour Data.	N/A	2015	No
	Cruise Calls – Cruise vessel port arrivals 2014 – 2015.	Fiji Ports Corporation Limited (FPCL)	2014-2015	Yes
	Vehicle License Data – Dataset of all valid motor vehicles licenses.	N/A	N/A	No
Data Catalogue	Raw Datasets – Datasets for further data analysis and visualisation:			
	• Bus Routes and Timetables	LTA	2012	Yes
	• Household and Population numbers	N/A	2007	No
	• Vehicle Registration Data (All)	N/A	1965 to 2015	No
	• Vehicle Registration as of 24 September 2015	LTA	2015	No
	Summary Data – Data summaries where no raw data was available:			
	• Uneconomical Maritime Routes – 2014 to 2015	DOT	2014-2015	Yes
	• Economical Maritime Routes – 2014 to 2015	DOT	2014-2015	Yes
	• Domestic Flights – 2014 to 2015	DOT	2014-2015	Yes
	Spatial Data – Geo Spatial Data.			
	• Road Centrelines – Fiji Road Network -	FRA	2015	Yes
	• Bridges – Location of bridges managed by FRA	FRA	2015	Yes
	• Jetties – Location of jetties managed by FRA, includes rural and beach landings.	FRA	2015	Yes
	• Bus Stops - Formal bus stop location as recorded on FRA database. No names or distinction between bus stop types	FRA	2015	Yes
	• Maritime Routes - Economical and uneconomical routes 2014-2015, includes: route name, vessel, cargo, passengers, capacity, frequency, travel time, subsidy.	Predict Consulting	2014 - 2015	Yes
	• Domestic Aviation Routes - Fiji domestic aviation routes 2014-2015 includes: route name, airline, aircraft type, passengers, cargo, capacity, travel time, frequency, price	Predict Consulting	2014 - 2015	Yes

Information Type	Accessed Information	Publisher	Year	Accessibility
	<ul style="list-style-type: none"> List of Villages - Comprehensive list of villages around Fiji, includes informal settlement. 	Fiji Lands Information System (FLIS)	2000-2014	Yes
	<ul style="list-style-type: none"> HTS Boundary - HTS sub areas, EA, province, rural/urban, district, and town – also includes population, number of households and population density. 	Predict Consulting	2015	Yes
	<ul style="list-style-type: none"> Census Data by EA - Enumeration Area boundaries and population based on 2007 Census. 	FBOS	2007	Yes
	<ul style="list-style-type: none"> Landmarks - Places of interest including schools, community halls, bus stand, and supermarkets. 	Predict Consulting	2015	Yes
Government Documents – documents and reports released by various Government agencies.	MOIT ACP 2015	MOIT	2015	Yes
	Greater Suva Transportation Strategy 2015-2030	FRA	2015-2030	Yes
	Green growth framework for Fiji	Fiji Ministry of Strategic Planning	2014	Yes
	Fiji National Communication to the UN Framework on Climate Change – Second National Communication 2014.	Fiji Ministry of Foreign Affairs and International Cooperation	2014	Yes
	Maritime Transport Policy	ADB	2013-2016	Yes
	DFR – Land Transport Policy	ADB	2013-2016	Yes

Source: Fiji National Transport Planning Database accessed on 02 July 2019

It is evident from Table 5.7 above, that various stakeholders in the land transport sector have made inputs into the database. The database is accessible to all stakeholders upon registration. After registration requests are received by the Department of Transport (Database Administrators), each user will be assigned the appropriate user privilege. Most stakeholders are assigned the data consumer privilege meaning that they will only be able to download information and not add or edit any information in the database. Data Administration privilege remains with the Department of Transport in terms of uploading and editing data in the database. Figure 5.13 illustrates the process of uploading data received from stakeholders into the database.

Figure 5.13: Process of uploading data into the Fiji National Transport Database



Source: Department of Transport Confirmation dated 20 June 2019

However, DOT confirmed that information has not been updated on a timely basis.

During the audit, it was noted that separate surveys and traffic data collections were being conducted by FRA and LTA. Traffic survey results conducted by the LTA are given to

organizations/ individuals that request the data. Thus data gathered is also used by the Authority for decision-making. Data is shared on the request or need basis with relevant agencies. The data is also shared on the LTA Website for public information.

A comparison of total vehicle population from LTA and Fiji Bureau of Statistics (FBoS) over seventeen years from 2001 to 2017 was made. It was noted that there were variances in registered volumes of vehicles on Fiji's roads for the years 2006, 2012, 2015 and 2017 as captured in Table 5.8 below.

Table 5.8: Variances noted in registered vehicle volumes between FBoS and LTA Data

Year	FBoS Data	LTA Data	Variance
2006	82,754	81,751	1,003
2012	83,655	83,288	367
2015	101,425	101,426	1
2017	117,561	119,050	1,489

Source: OAG Analysis of FBoS and LTA Data

Causes

As mentioned above, the database has not been updated pending license renewal.

Effects

Thus information with respect to progress on implementation of the congestion management initiatives cannot be determined at one point in time as data is not collated and integrated to show true reflection of implementation.

Good practices

Various policy advices and decisions were made as a result of reports published on the database. This included the installation of streetlights as a result of the household travel survey phase 1 presenting a snapshot that more people used active modes of transportation such as walking.

“The OCC will become the Transport Management Office for Fiji where the LTA will take the lead role.”

The LTA has come up with a proposal to establish an Operational Control Centre (OCC) in Suva. The OCC will control the delivery of all Traffic Management Strategies, National Disaster Planning, working closely with partner agencies and the other key stakeholders such as Police, Fire, and Ambulance. The idea of the OCC came about due to the significant absence of coordinated leadership in the transport sector in Fiji

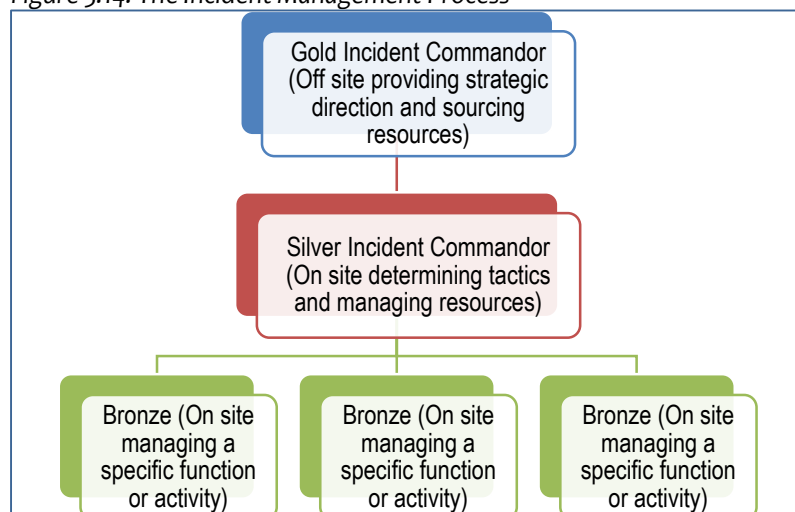
with many agencies focusing on their core role while not looking at the big picture. The OCC will become the Transport Management Office for Fiji where the LTA will take the lead role.

The OCC will have primary control of the Highway, Weather, National Resilience and disaster Management for all land-based activities; therefore all instructions to other agencies will be issued by the OCC. The focus of the OCC will be to ensure that essential service is delivered to the standards agreed, that agencies are supported in the delivery to the standards agreed, that agencies are supported in the delivery of strategies and contingency planning and that incidents across the network are managed effectively, efficiently with a high degree of coordination. The OCC will manage the network through the use of Standard Operating Procedures (SOP's), which

will be agreed with partner agencies. LTA functions of Enforcement and Revenue Protection (e-Ticketing) will be tasked and coordinated from the OCC to ensure continuity of instruction. The SOPs will ensure that the OCC responds to each incident or performance issue in the same manner, at all times.

The OCC will be run with a Manager using the well-established “Gold Command” hierarchy that will have the authority to take decisions, deploy resources as required in the event of all and any planned or unplanned situations occurring in Fiji. The OCC team will be led by the National Operations Manager assisted by the Operations Manager. Their role and responsibilities are to ensure that services are delivered within the agreed strategic service plan and in line with the standards agreed. The National Operations Manager will also be the initial Gold Commander for any major incident. The incident management approach and, critically, the command and control structure are pivotal in terms of successful management of an incident. Gold, Silver and Bronze is a simple and an internationally recognised system for major incident management. The National Operations Manager would be responsible for instigating and managing this system, at the outset of any major incident and would work with the relevant “blue light” and other emergency services. Figure 5.14 captures the incident management process.

Figure 5.14: The Incident Management Process



Source: Brief provided by LTA on 03 October 2019

Expected benefits

With the Transport planning database, information through surveys, and traffic data counts and others can be centralized so that proper planning and changes to current policies can be made as information from the database are analysed and forecasts drawn. This will ensure better coordination in the compilation of data and the true reflection of progress of implementation to attain the relevant congestion management outcomes at the national scale.

FRA agrees with the need for an overall transport planning database to be established by the DOT and available to all identified stakeholders. In the absence of such a database, FRA has tried to coordinate as much information as possible into the FRA GIS system. To date this includes information on road centreline, cadastral, bridges, crossings, jetties, culverts, streetlights, assets, traffic volumes, speed violations, police crash data, black spot etc. FRA is ready to share the information that belongs to FRA with the DOT for coordination.

The DOT have agreed¹⁵⁴ to the audit findings and recommendations.

The LTA CEO in a meeting with the audit team¹⁵⁵ noted that the brief on the National Traffic Operational Centre was written a few months ago. It sets out exactly what is needed and what will deliver, not just for this corridor but for the whole of Fiji because it will be the go to centre for transport control, for traffic management, for the management of the signal systems (once the FRA converts to having smart signals where signal phasing can be altered). At the moment, FRA cannot alter the signal phasing without actually going out to the signal controller altering it manually. Resilience is built in system and there is a command and control system set up known as the Gold Command. The LTA CEO confirmed that the system is trialled and tested in Europe and he was actually involved in setting up of some operational control centres.

Recommendations

The DOT should:

- Given the urgency of policy directions and congestion management projects/programs, ensure that the national transport database is updated without delay.
- Being the agency responsible for maintaining and updating the national transport database, make efforts to properly coordinate and collate data.

Theme 6: Monitoring into action responses/program modification

Audit observation

We commend the intent to adopt measurable performance objectives. However, the lead agencies in the land transport sector (i.e. LTA, FRA and DOT) does not address how monitoring is turned into action responses or program modifications. While monitoring is essential, acting on this information is the key point.

Criteria

All transport sector agencies, including state-owned commercial enterprises (SOE's), will be required to develop, measure and report on key performance indicators for their activities and for the performance of the transport infrastructure, services and their use under their regulation, administration, management or service delivery.¹⁵⁶

While monitoring is essential, acting on this information is the key point. This approach is referred to as a results-based management (RBM). RBM is defined as a “management strategy by which processes, outputs and services contribute to the achievement of clearly stated expected accomplishments and objectives. It is focused on achieving results, improving performance, integrating lessons learnt into management decisions and monitoring and reporting on performance.”¹⁵⁷ The results chain is presented in the Figure 5.15.

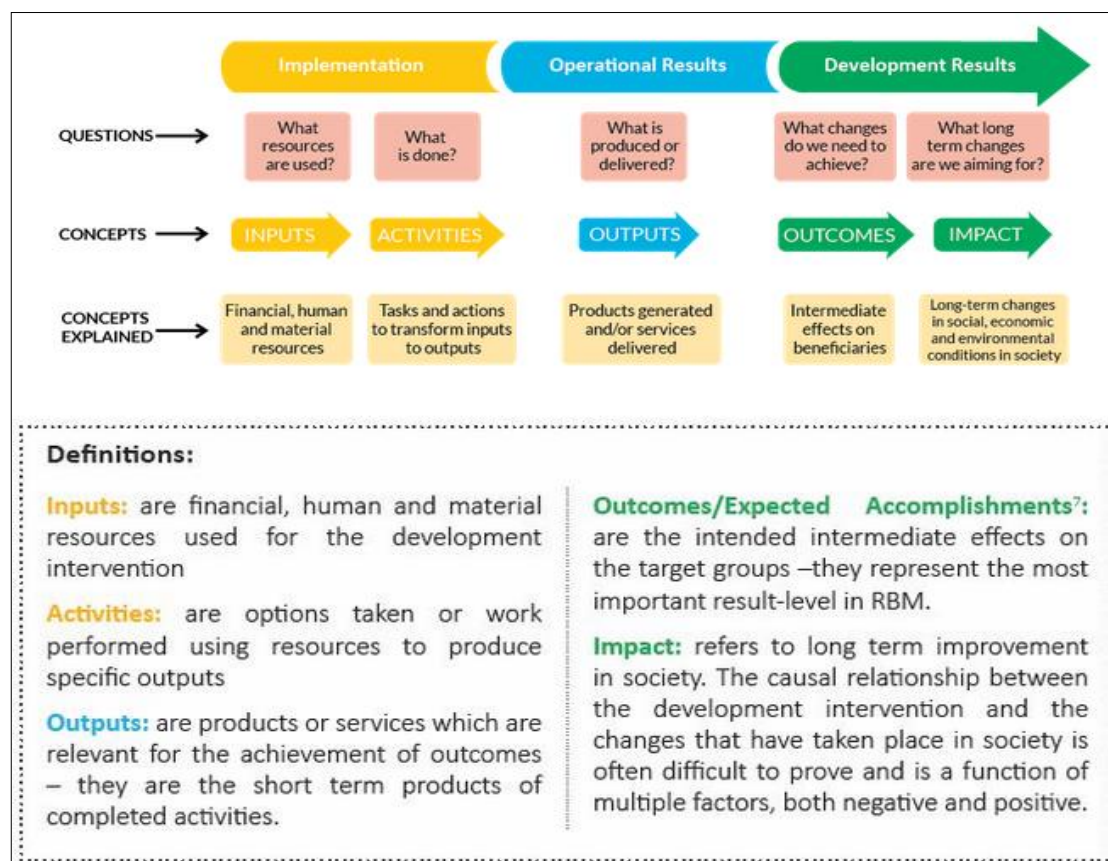
¹⁵⁴ DOT comments dated 11 October 2019.

¹⁵⁵ Dated 03 October 2019.

¹⁵⁶ Maritime and Land Transport Policy, Section 3.7, p.19 & 20.

¹⁵⁷ Review of results-based management at the United Nations (OIOS) - A/63/268/

Figure 5.15: The results chain



Source: UN Habitat for a better urban future website, can be accessed at: <https://unhabitat.org/?rbm-handbook=1-1-what-is-results-based-management>

Evidences and analysis

Measurement of congestion is an important step in managing and reducing congestion. Without quantifying congestion, there will be no baseline against which transportation agencies will determine how well the problem of congestion is addressed by the governing policies that are designed and implemented. Traditionally, level of service, speed, travel time, and delay have been the commonly used measures of congestion.

Performance indicators can be applied to road programme evaluation, planning and organisation management in the following ways:

- In process management, to ensure the success of individual processes or groups of processes.
- In management-by-results, to set targets and evaluate the achievement of goals and objectives.
- In benchmarking, to establish “best practice” or “superior performance” processes in order to improve performance of the road administration.
- To aid the development or improvement of the functions or specific engineering tasks of the road administration.

A set of 15 performance indicators for the road sector, which were used by road administrations throughout the world were field tested. The following countries participated in the field tests: Australia, Belgium (Walloon region), Denmark, Finland, Hungary, Japan, the Netherlands, New

Zealand, Portugal, Sweden, Switzerland, the United Kingdom and the United States (both the Federal Highway Administration and the Minnesota Department of Transportation). These indicators included:

- I. PI 1 – Average road user costs;
- II. PI 2 – Level of satisfaction regarding travel time and its reliability and quality of road-user information;
- III. PI 3 – Protected road-user risk;
- IV. PI 4 – Unprotected road-user risk;
- V. PI 5 – Environmental policy/programmes;
- VI. PI 6 – Processes in place for market research and customer feedback;
- VII. PI 7 – Long-term programmes;
- VIII. PI 8 – Allocation of resources to road infrastructure;
- IX. PI 9 – Quality management/audit programmes;
- X. PI 10 – Forecast values of road costs vs. actual costs;
- XI. PI 11 – Overhead percentage;
- XII. PI 12 – Value of assets;
- XIII. PI 13 – Roughness;
- XIV. PI 14 – State of road bridges; and
- XV. PI 15 – Satisfaction with road system.

The result of the field tests highlighted that it would be inappropriate to propose a common vision or common performance indicator target for all countries. Each administration should define its own vision and determine best practices in other countries to realise that vision in the most effective way. Hence, it is essential to place each performance indicator in perspective with the role of road administration in the overall road transport system and in society as a whole. In other words, the report is not aimed at defining a vision for adoption in all countries. Rather, the results serve as a framework for evaluating the role and performance of the road administration.

According to the 2005 Fiji transport country paper, it found that congestion had traditionally been measured through peak-hour volume/capacity ratios. It then suggested that standard measures of system performance should incorporate travel time reliability, trip length predictability, and customer satisfaction. Despite these suggestions, a review of the planning framework for one of the lead agencies in the land transport sector, the LTA, it was noted that there had been little to no efforts done to incorporate the above mentioned congestion measurements in their planning documents. Refer **Appendix 8** for outline of planning documents.

Furthermore, review of the annual reports provided by the LTA revealed they have not addressed how well they have worked to achieve the key performance indicators and targets. In other words, they have not indicated if they have achieved their desired output and ultimately the necessary impact on the general public. In doing so, turning monitoring results into action responses or program modifications can be achieved. Refer to **Appendix 8** for details.

In addition to a limited performance-based focus on congestion, a clear linkage between planning, prioritization and programming is not apparent. For congestion-related objectives to be meaningful, they must be developed in planning, used to prioritize projects and followed for project selection. Performance-based measures such as hours of delay reduced per million dollars of investment and reductions in the regional travel time index should also be incorporated into the planning phase.

Causes

“While monitoring is essential, acting on this information is the key point.”

The main reason for gaps between performance monitoring and action plans is because performance indicators are not effective. This ineffectiveness is due to the fact that they do not aim to reduce congestion. The absence of congestion reduction goals within the transport sector can be attributed to the absence of clear nation-wide objectives on management. This,

again as stated under Theme 2 of this section of the report, is due to absence of congestion reduction goals.

Effects

Absence of a clear link between planning, prioritization, and programming will not allow for a transparent analysis of the importance of congestion or a measurement of the effects of projects – either programmed or not – on congestion goals.

Good practices

With the current development of the MOIT’s four (4) year Strategic Development Plan Y2019 – 2022, it is pleasing to see that means of measuring the planned outcomes in terms of improving accessibility and connectivity using all modes of land and maritime transport with the ultimate goal of ensuring a safe, efficient (including reducing traffic congestion) and affordable transportation services, have been identified. The identified means of measurement is a decreasing trend in travel time and an increase in accessibility.

Expected benefits

Having a set of measurable performance objectives will not only allow effective evaluation and reporting on performance findings but it will also enable the proper designing of appropriate action plans, prioritization and financial programming. Effective performance measures should inform lead agencies in the land transport sector about what works and what does not. Furthermore, consistent and regular reporting of transportation system performance should have positive impacts on what transportation agencies do and how well they do it, whilst providing useful feedback to the voters and their representatives on how well their taxes have been spent.

FRA agrees¹⁵⁸ that the DOT should have overall performance targets set to reduce congestion and looks forward to collaborating to ensure these targets are met.

The DOT have agreed¹⁵⁹ to the audit findings and recommendations.

LTA have agreed¹⁶⁰ to audit findings and recommendations.

¹⁵⁸ FRA comments dated 27 August 2019.

¹⁵⁹ DOT comments dated 11 October 2019.

¹⁶⁰ Exit meeting dated 03 October 2019.

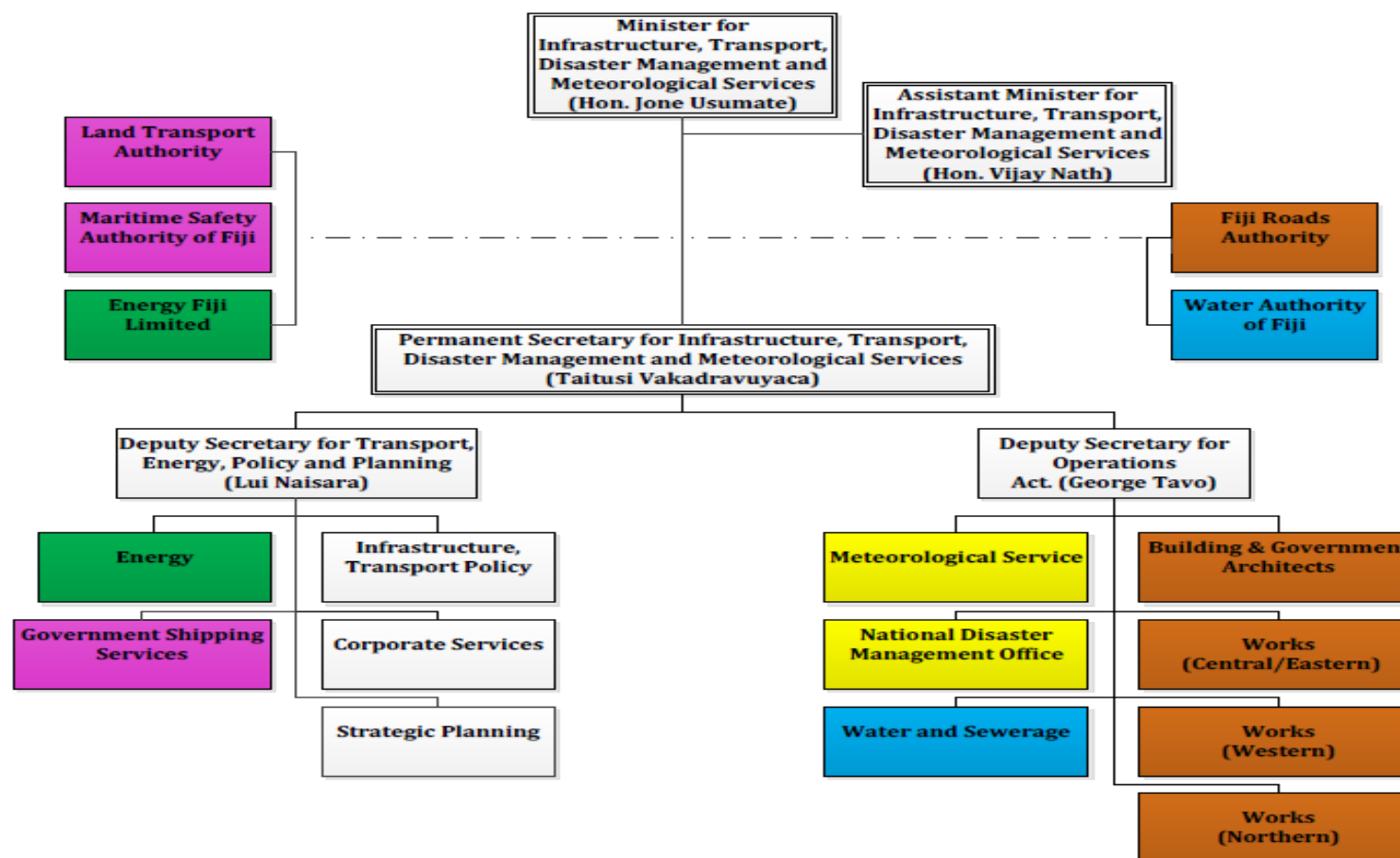
Recommendations

The DOT should:

- Manage traffic congestion through a system of measurable performance objectives.
- Not merely measure and report performance findings but also to design them into action plans, prioritization and financial programming.
- Implement rewards and penalties into the process regarding success and failure. This might include bonuses or other financial rewards for successful programs and negative actions for failures.

6.0 APPENDICES

Appendix 1 Organisational Structure Transport Sector Institutions



Source: Ministry of Infrastructure and Transport- Strategic Development Plan 2019-2022, Appendix A, Page

Appendix 2 Strategies discussed in NTCF communique

Issues Highlighted Strategy	Urban Transportation	Railway	Alternative Systems	Transport	Traffic Management System
	2016 <ul style="list-style-type: none">• Develop public transport• Improve number and quality of bus in the road<ul style="list-style-type: none">• Improve road infrastructure• Develop overhead pedestrian crossing at key hotspots• Control the increasing number of private vehicles on the roads	2016 <ul style="list-style-type: none">• Nationalize the railway• Involvement of MOIT in the TWG• Explore other potential railway network system that can connect to other transport modes for the respective corridors	2016 <ul style="list-style-type: none">• Introduce such systems to support our busy road network• Carpooling, walking, motorcycling, dedicated public transport systems from car parks outside the city centers into the Central Business District• Cycling as an option• Installation of proper bicycle infrastructure	2016 <ul style="list-style-type: none">• Better traffic system to be identified especially during peak hours• An integrated approach to land-use management is to be adopted• Introduction and implementation of road speed limits in all centre's aimed at reducing road fatalities• Reviewing and increase of existing parking fees as a way of reducing traffic in towns and cities	
	2018 <ul style="list-style-type: none">• Identifying Growth Centers; Future Demand Vehicle, Public Service Vehicle demand & Driver behaviour in respect to cyclists	2018 <ul style="list-style-type: none">• Same as above	2018 <ul style="list-style-type: none">• Same as above	2018 <ul style="list-style-type: none">• Same as above	
Remarks	2016 <ul style="list-style-type: none">• The Ministry of Infrastructure and Transport (MOIT) through the Department of Transport commissioned a study in 2015 to compile a snapshot of how, where and when Fijians travel	2016 <ul style="list-style-type: none">• MOIT has sought assistance from Indian Technical Cooperation Programme to conduct a Feasibility Study on the Nationalization of Railway	2016 <ul style="list-style-type: none">• Introduction of traffic flow & road congestion management:<ul style="list-style-type: none">-Adoption of road pricing-Adoption of priority lines to promote buses	2016 <ul style="list-style-type: none">• Traffic Control during peak hours. Plan is to install CCTV Cameras• Vehicle counters used to determine the traffic movement at a fixed rate	

	<p>which will establish a basis for assessing transport planning interventions and improving decision making.</p> <ul style="list-style-type: none"> The three (3) stages pertaining to the development of the FNTPD were as follows: <p>Stage 1: Data Audit and Workshops; Stage 2: National Household Travel Survey; and Stage 3: Transport Planning Database</p>		<p>-Alternative mode of mass rapid transportation -Review of speed limits -Adoption of Green Electric Vehicles in Fiji</p>	<ul style="list-style-type: none"> FRA to implement SCATS software nationally Installation of additional speed cameras
	<p>2018</p> <ul style="list-style-type: none"> Same as above 	<p>2018</p> <ul style="list-style-type: none"> At the World Sustainable Development Summit held in New Delhi, India, Fiji secured railway infrastructure development assistance from the Government of India. The Hon. Attorney General expressed the need for changing the existing railway network to expand from carting to alternative transport of carting cargoes and passengers. This is also an opportunity to develop approximately 30 kilometers for Light Rail Transit between Suva to Nausori corridor to cart approximately 108,016 passengers. 	<p>2018</p> <ul style="list-style-type: none"> Same as above 	<p>2018</p> <ul style="list-style-type: none"> Traffic Control during peak hours to ensure smooth flow of traffic Continuity of the Technical Working Group to discuss matters pertaining to Land Transport.

Appendix 3 Land Transport Policy – List of Policy Objectives

National Level Goals, Policies and Strategies for Land and Maritime Transport		
Goal: An integrated transport system that is efficient, safe and environmentally sustainable		
Policy Objectives	Strategies	Key Performance Indicators
Multi-modal: To ensure access to safe, efficient, affordable and environmentally sustainable transportation services.	<ul style="list-style-type: none"> Review Government subsidies on Transport. Attract potential investors to provide alternative modes of transportation through Public Private Partnership (PPP) framework. To promote the use of public transport. Introduction of effective measures to reduce the number of road deaths, mishaps at sea and air crashes through enabling legal frameworks. Land Transport Authority (LTA) incorporate stringent safety and security measures. Continue investment in the construction, maintenance and upgrading of the national transport network supported by enabling legislation and regulation enforced. Ensure access to all forms of transport. Promote the use of fuel-efficient vehicles. Undertake a wider study on the transportation system in the Suva-Nausori corridor, including study of intermodal and peak hour variability, and make and implement appropriate decisions on the recommendations. 	<ul style="list-style-type: none"> At least one transport PPP project valued at over \$100 million by 2014. Reduction in annual fatalities on all forms of transport by at least 20% from 90 fatalities.
Land Transport: To enhance livelihood by reducing cost of transport of people and goods.	<ul style="list-style-type: none"> Protect investment in the national land transport network through effective controls on vehicle overloading and adequate maintenance. Reform and consolidate the land transport sector. Reform the Government Quarry. Acquisition of plant and heavy machinery. Continue the revision of traffic management schemes. Control the importation ages of second hand vehicles. Introduce alternative fuel powered vehicles. Review the Land Transport structure and funding mechanisms for implementation. Improve vehicle operating costs by investing in more maintenance. Consolidation of the <i>Traffic Act (Cap 176)</i> Review of the <i>Land Transport Act, 1998</i> and subsidiary regulations. Merger of LTA & DNR (<i>DNR now FRA</i>) Protect investment in the national land transport network through effective controls on vehicle overloading and adequate maintenance Reform & consolidate the Land Transport Sector Develop self-funding mechanism for LTA, FRA, National Traffic Control Centre & Municipalities. 	<ul style="list-style-type: none"> Not less than 125km of national roads resealed and 40km rehabilitated each year. Annual CO2 emissions per capita reduced from 1.6mt to 1.0mt. Average vehicle emission levels reduced from 40,000 ppm to 20,000 ppm. Reduce vehicle emission opacity from 70% to 35%. Reduce road death toll from 120 to 50 pa.

	<ul style="list-style-type: none"> • Implementation and monitoring of user-pay principles • Improve the traffic management schemes and reduce traffic congestion at main trunk routes • Review current LTA traffic infringement fines and penalties. • Control the importation of second-hand vehicles • Review the Land Transport structure & funding mechanisms for implementation • Improve vehicle operating costs by investing in more road maintenance 	
Other Sectors in the Roadmap	<ul style="list-style-type: none"> • Review the cane transportation system and harvesting with the objective of making it more cost effective, efficient and practical. • Promote measures to reduce fossil fuel consumption, including in the transport sector, and encourage alternative fuels for the transport sector. 	<ul style="list-style-type: none"> • 20% of fuel for transport is met through bio-fuel (E5 & B10), LPG and other renewable sources by 2012
Green Growth Sustainable Land Transport National Energy Policy National Climate Change Policy	<ul style="list-style-type: none"> • Encourage the use of fuel efficient vehicles to reduce transport sector's dependence on imported fossil fuels, including through the review of existing relevant policies, by <ul style="list-style-type: none"> ◦ Promoting fuel efficiency of imported motor vehicles to reduce petroleum consumption which includes: (i) continuing to enforce age limits on all second hand vehicles (five years and less); (ii) providing incentives for importation on new vehicles with better and more fuel efficient engine technologies; (iii) introduction of vehicle fuel economy labeling ◦ Local industry to comply with Euro 4 fuel standards including setting up of relevant infrastructure and review of the fuel prices ◦ Regular review of fuel and vehicle standards and compliance with international standards. ◦ Control the ages of imported and secondhand vehicles ◦ Promote the fuel efficiency of the existing motor vehicle fleet, including promoting fuel efficient driving practices through information campaigns and driver training, and by improving the enforcement of vehicle maintenance and maximum axle weight standards. ◦ Control and reduce emissions from existing private and public vehicles • develop and demonstrate alternative fuel sources for land transport by: <ul style="list-style-type: none"> ◦ Increasing development and use of biofuels for the land transport industry. ◦ Exploring and investing in low carbon vehicles like electric cars and hybrid vehicles. ◦ Exploring the potential for rail transport including undertaking a feasibility study, in particular for the cane farming areas in the Western Division in the "off season". ◦ Developing necessary standards for the use of other forms of alternative fuel for land transport industry. 	<ul style="list-style-type: none"> • Reduce Fiji's dependence on imported fossil fuel for transportation which is using around 42% (2010) of final energy consumption to around 25% by 2030. • Within 2 years • within 3 to 5 years • within 2 years • within 3 to 5 years • in more than 5 years

	<ul style="list-style-type: none"> ○ Diversifying the current energy mix through the use of Liquefied Petroleum Gas (LPG) and Liquefied Natural Gas (LNG) in the industrial, land transport and domestic sectors. • shift towards public transportation and non-motorised land transport, due to the significant increase in number of vehicles on Fiji's roads, by: <ul style="list-style-type: none"> ○ Promoting use of public transport (bus and rail) and smaller size motorized vehicles (such as motor scooters, motorcycles, but with regard to safety trade-offs). ○ Reviewing the optimal number of private and public service vehicles and develop appropriate regulatory arrangements to promote more transparency in licensing arrangements. ○ Exploring and developing an exit strategy for vehicles that have reached their life span. ○ Exploring opportunities on cycling lanes in major urban areas. ○ Accelerated vehicle replacement schemes (e.g. car scrapping schemes). ○ Promoting cycling and establishment of cycle paths in urban areas, as well as public and private sector participation in cycle to work schemes. ○ Developing appropriate traffic management plans for major urban centers such as Suva and Lautoka to improve traffic flow, dealing with traffic congestion and reduce vehicle emissions. 	<ul style="list-style-type: none"> • within 2 years • within 3 to 5 years
All Modes Transport Sustainability	<ul style="list-style-type: none"> • Reduce the environmental impacts from all forms of transportation and reduce climate change impacts on transportation infrastructure, by: <ul style="list-style-type: none"> ○ Strengthening enforcement on operators to minimize environmental degradation and pollution. ○ Providing necessary training to enforcers. ○ Developing certification standards for climate proofing infrastructure. ○ Developing waste management standards for the transport industry to ensure that the relevant waste is either reused or disposed/incinerated in a manner which is not harmful to human health or the health of the environment. ○ Establishing enforcement measures to ensure that new infrastructure meets climate proof standards. • Substitution with cleaner petroleum fuels and biofuels <ul style="list-style-type: none"> ○ encouraging the production of coconut oil in remote islands and the use of locally produced molasses for ethanol production. ○ Encourage the use of relatively environmentally friendly petroleum products such as LPG over kerosene. ○ Continue to apply and update national biodiesel and ethanol fuel standards in a way that supports their uptake. 	<ul style="list-style-type: none"> • within 2 years • within 3 to 5 years

Appendix 4 Extract of annual work program 2018/2019

Annual Work Programme and Reporting 2018/2019

Project Title: Fiji National Transport Database

Implementing Agency: DEPARTMENT OF TRANSPORT

Head/Programme/Activity/SEG: 40-1-2-9

Budget: \$107,668

Annual Work Programme																	Reporting Template				
Expected Outputs	Planned Activities	Timeframe		Potential Risks	Responsible Party	Planned Expenditure												Progress Report by Implementing Agency			
		Start	Finish			Q1			Q2			Q3			Q4			Expenditure		Is the activity on track? Yes or No. Explain.	General remarks on activities undertaken in achieving outputs
						Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Actual	Commitment		
	Completion: Conduct of Survey (List Enumeration Areas). Field Work Supervisors/ Enumerators/MOIT Staff Allowances. 13 Enumeration Areas (6 EAs in the Western Division, 6 Eas in the central & 1 in the Northern Division)	1/04/2018	7/08/2018	Bad weather conditions resulting incompletion of survey. Deferment of Survey for some H20 Enumaerations Areas; Refusal Response/ Non-response	TPU															Phase 2 Survey successfully completed. Final Report is yet to be submitted by Consultant.	All additional information required by Consultant furnished in order to complete Phase 2 HTS report.
	Completion of Data Entry (Total Number of Households and HH Members) (Data Entry Supervisors/ Data Entry Operators). 273 HH and 1092HH Members	1/04/2018	10/08/2018	Forms not submitted on time due to delays from Enumeration Areas. Power Failure. Network Failure. Shut down of Program from IPSOS.	TPU																
	Delivery of Data (IPSOS)	1/04/2018	31/08/2018	Delay in processing of data. Unavailability of consultant	IPSOS																
	Peer Review (David Hensher)	7/08/2018	30/09/2018	None anticipated	DAVID HENSHER																
	Draft Final Report (Predict)	1/08/2018	30/09/2018	None anticipated	PREDICT																
	Final Report (Predict)	1/08/2018	30/09/2018		PREDICT																
	Cabinet Discussion Paper	1/10/2018	31/11/2018		TPU																
	Monthly Total					29,977	49,425	25,463	2,803	0	0	0	0	0	0	0	0				
	Quarterly total							104,865			2,803		0			0		37,748			

Appendix 5 Extract of Quarterly physical progress report, quarter 1 2018/2019

Quarterly Physical Progress Report 2018/2019

Project Title:

Fiji National Transport Database

Implementing Agency:

DEPARTMENT OF TRANSPORT

Head/Programme/Activity/SEG:

40-1-2-9

Budget:

\$107,668

Annual Work Programme																	Reporting Template				
Expected Outputs	Planned Activities	Timeframe		Potential Risks	Responsible Party	Planned Expenditure												Progress Report by Implementing Agency			
		Start	Finish			Q1			Q2		Q3			Q4			Expenditure		Is the activity on track? Yes or No. Explain.	General remarks on activities undertaken in achieving outputs	
						Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Actual			Commitment
	Completion: Conduct of Survey (List Enumeration Areas). Field Work Supervisors/ Enumerators/MOIT Staff Allowances. 13 Enumeration Areas (6 EAs in the Western Division, 6 EAs in the central & 1 in the Northern Division)	1/04/2018	7/08/2018	Bad weather conditions resulting incompletion of survey. Deferrment of Survey for some H20Enumerations Areas; Refusal Response/ Non-response	TPU															Phase 2 Survey successfully completed. Final Report is yet to be submitted by Consultant.	All additional information required by Consultant furnished in order to complete Phase 2 HTS report.
						20,407	1,500														
	Completion of Data Entry (Total Number of Households and HH Members) (Data Entry Supervisors/ Data Entry Operators). 273 HH and 1092HH Members	1/04/2018	10/08/2018	Forms not submitted on time due to delays from Enumeration Areas. Power Failure. Network Failure. Shut down of Program from IPSOS.	TPU																
						9,570															
	Delivery of Data (IPSOS)	1/04/2018	31/08/2018	Delay in processing of data. Unavailability of consultant	IPSOS																
							35,925														
	Peer Review (David Hensher)	7/08/2018	30/09/2018	None anticipated	DAVID HENSHER																
							12,000														
	Draft Final Report (Predict)	1/08/2018	30/09/2018	None anticipated	PREDICT																
	Final Report (Predict)	1/08/2018	30/09/2018		PREDICT																
	Cabinet Discussion Paper	1/10/2018	31/11/2018		TPU																
	Monthly Total					29,977	49,425	25,463	2,803	0	0	0	0	0	0	0	0				
	Quarterly total							104,865			2,803	0			0			37,748			

Appendix 6 Traffic Congestion Issues Discussed in the NTCF

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
14th National Transport Consultative Forum Communiques 2016.					
Urban Transportat ion for existing urban centres	<ul style="list-style-type: none"> Develop public transport. Improve number and quality of bus on the road. Improve road infrastructure. Develop overhead pedestrian crossing at key hotspots. Control the increasing number of private vehicles on the roads (particularly in town centres). 	January to December	Ministry of Local Government/ City and Town Council/ LTA/ FRA/ FBOS/ MOIT.	<p><u>Update 27/06/2016:</u> Minutes of Discussions from Bi Annual Meeting</p> <p>Some key issues to address:</p> <ul style="list-style-type: none"> – Congestion – Availability and affordability of public transport – Road degradation and road safety issues – Environmental pollution and emissions. <p>A feasibility study on whether overhead pedestrian structures are possible for the Suva CBD (MOIT/ FRA) focussing on hotspots where there is high number of pedestrians (e.g. Raiwaqa, USP, Ratu Sukuna, Samabula, Bus Stand to CBD).</p> <p><u>Update 25/05/2016:</u> <u>Department of Town and Country Planning</u></p> <ul style="list-style-type: none"> ▪ Urban Regional Growth Plans; ▪ Greater Suva Urban Growth; ▪ Regional Plan; ▪ Draft Report 2015; ▪ 2015 – 2033 – Intensify the corridor and relax zoning provisions. <p><u>Update 12/05/2016:</u></p> <ul style="list-style-type: none"> ▪ The Ministry of Infrastructure and Transport (MOIT) through the Department of Transport (DOT) commissioned a study in 2015 to compile a snapshot of how, where and when Fijians travel which will establish a basis for assessing 	Not noted

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
				<p>transport planning interventions and improving decision making.</p> <ul style="list-style-type: none"> ▪ The three (3) stages pertaining to the development of the FNTPD were as follows: <ul style="list-style-type: none"> I. Stage 1: Data Audit and Workshops; II. Stage 2: National Household Travel Survey; and III. Stage 3: Transport Planning Database. ▪ The final project reports were received on 15th April 2015 which consists of the following: <ul style="list-style-type: none"> I. Final Report that summarizes the entire project; and II. Two supplementary reports – a) Technical report on the Household Travel survey, b) Review of the Fiji Maritime and Freight Sector. <p><u>LTA Update 21/04/2016:</u> Public transport survey is currently underway in collaboration with USP.</p> <p>A study is currently being undertaken on urban development and growth by the department of town and country planning to which MOIT has been requested to provide a feedback on area of transportation. This will also assist in the transport planning database undertaken by MOIT.</p> <p>The transport planning database project also will be undertaking the nation all household travel diary survey for the next 3 years which will provide better information regarding the areas of demand and</p>	

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
Alternate Transport Systems	<ul style="list-style-type: none"> Introduce such systems to support our busy road network. Carpooling, walking, motorcycling, dedicated public transport systems from car parks outside the city/town centres into the CBD Cycling as an option. Installation of proper bicycle infrastructure. 	<u>Long term</u> 5 years	MOIT/ LTA/ Municipalities/ Fiji Cycling Association.	<p>supply on transportation in the urban areas.</p> <p><u>Update 27/10/2016</u> PIDF – In support of the effort to reduce carbon emission, proposal to introduce water taxis and ferries for the Nausori-Suva Corridor. This will also ease traffic congestion.</p> <p><u>LTA Update 28/04/2016</u> LTA is promoting electric vehicles in the country to minimize environment impact. The following are the number of hybrid vehicles that came in Fiji each year:</p> <ul style="list-style-type: none"> 2012 – 1 2013 – 6 2014 – 3 2015 – 1,721 2016 (April) – 1,426 <p><u>LTA Update 21/04/2016</u> Public Transportation (buses) encouraged rather than travelling in private cars.</p> <p>Introduction of traffic flow and road conjunction management:</p> <ul style="list-style-type: none"> Adoption of road pricing – A Project Plan was submitted to the Minister of Infrastructure and Transport (Mr. Tikoduadua) for further consideration). A recommendation for a feasibility study through Consultancy was approved by the LTA Board. Adoption of priority lines to promote buses – this concept has been approved by the LTA and FRA has included in their road development plans commencing on the Suva to Nausori corridor. Alternative mode of mass rapid 	Not noted

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
				<p>transportation – the LTA Board approved the recommendation to hire a Consultant to conduct feasibility study on this issue. The study would enable the Government to make decisions on the best mode of MRT that can be adopted for Fiji.</p> <ul style="list-style-type: none"> ▪ Review of speed limits – the FRA is continually conducting speed limit settings on all roads in conjunction with their Roading Development programmes. ▪ A meeting was held on 4th August on Green Electric Vehicles and its introduction in Fiji. The TWG consisting of FEA, LTA, MOIT, FRA, Department of Environment. ▪ Electric Vehicles have since been driven on Fiji Roads and some examples of such vehicles include Toyota Prius, Toyota Alphard, Honda, LPG (dual), Forklifts and golf carts. ▪ The vehicles on Fiji roads are dual systems, powered with fuel and electricity. The vehicles are mainly battery powered and fuel is used to charge the battery. The vehicles are not designated to run full time on fuel with only 1.5 litres. The advantage of these dual systems achieves the reduction of emission on our roads. There are approximately 134 registered electric vehicles on Fiji roads. ▪ A memo was sent to SG's office on the 4th August 2015 regarding a study on Electric Vehicles to be carried by Hitachi, a Japanese Company. ▪ The Fiji Roads Authority has been consulted on 17th March 2015 in regards to providing infrastructure for cycling. The 	

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
				<p>planning proper by FRA will resume in 2017.</p> <ul style="list-style-type: none"> IUCN has appointed the Department of Strategic Planning office to take the lead role on their Life Cycle Fiji Project. 	
Traffic Management Systems	<ul style="list-style-type: none"> Better traffic system to be identified especially during peak hours. An integrated approach to land-use management is to be adopted. Introduction and implementation of road speed limit in all centre's aiming in reducing road fatalities. Reviewing and increase of existing parking fees as a way of reducing traffic in towns and cities. 	January to December	LTA/ FRA/ Municipalities/ Department of Town and Country Planning/ MOIT	<p><u>Fiji Police Update 25/05/2016</u> Traffic Control – Peak Hours – 7:00 to 8:30am and 4:00 to 6:00pm. Plan is to install CCTV Cameras.</p> <p><u>LTA Update 21/04/2016</u></p> <ul style="list-style-type: none"> Vehicle counters currently used to determine the traffic movement at a fixed site. This will have time stamps also; this is currently conducted in Nadi. Additional speed camera fixed sites to be installed on the Queens Road- Suva to Lautoka for 2016. This project will commence on July, 2016. FRA is in the process of Implementing SCATS software nationally. Installation of speed camera and running red camera at Nabua, Kinoya and Samabula. 2 portable speed cameras being utilized by 1 team each in West and CE region. 	Not noted
Land and Maritime Transport Policies	<ul style="list-style-type: none"> Revision of Legislative Provisions Implementation of Policy Strategies Provision of Hydrography Services in Fiji Revision of all Legislative Provisions. 	Medium-long term	Solicitor General's Office/ Ministry of Infrastructure and Transport.	Not noted.	Not noted
Transport Planning Database	<ul style="list-style-type: none"> Implementation of Phase 2 of the Household Travel Survey; 	Medium-long term	Ministry of Infrastructure and Transport.	Not noted	Not noted

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
	<ul style="list-style-type: none"> Availability of Transport Data on Vehicle Registration Type (Mode, Year of Manufacture, Fuel Usage); and Consideration for the adoption of the Singapore Transport System. 				
Road Safety	<ul style="list-style-type: none"> Status and progress of Jevic System implementation; Introduction of Bicycle and Motorcycle infrastructure; and Monitoring of the UN Decade of Action for Road Safety targets for Fiji. 	Short-medium term	LTA/ Ministry of Education/ Municipal Council/ National Fire Authority/ Ministry of Health/ Ministry of Infrastructure and Transport.	Not noted	Not noted
Sustainable Infrastructure	<ul style="list-style-type: none"> MOU between government and the industry; and Future plans for existing infrastructure. 	Short-medium term	Ministry of Economy/ FRA/ LTA/ Ministry of Rural and Maritime/ Development and National Disaster Management/ Ministry of Infrastructure and Transport.	Not noted.	Not noted
15th National Transport Consultative Forum Communiques 2018					
Urban Transportation	Identify Growth Centres (e.g. Nabouwalu) <ol style="list-style-type: none"> Future Vehicle Demand Public Service Vehicle Demand Driver behaviour in 	Not noted	Not noted	<ul style="list-style-type: none"> There are new approaches to Urban Transport Systems, the following are some approaches identified by ADB to feature individually and in combination for future urban transport operations. These include Public Transport Systems, Non- 	Not noted

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
	respect to cyclists			<p>motorized transport, integrated transport planning, demand management and traffic management.</p> <ul style="list-style-type: none"> The Ministry of Infrastructure and Transport (MOIT) through the Department of Transport (DOT) commissioned a study in 2015 to compile a snapshot of how, where and when Fijians travel which will establish a basis for assessing transport planning interventions and improving decision making. <p>The three (3) stages pertaining to the development of the FNTPD were as follows:</p> <ol style="list-style-type: none"> Stage 1: Data Audits and Workshops; Stage 2: National Household Travel Survey; and Stage 3: Transport Planning Database. 	
Railway	<ul style="list-style-type: none"> Involvement of Ministry of Infrastructure and Transport in the Technical Working Group. Explore other potential railway network system that can connect to other transport modes for the respective corridors. FNU to consult MSAF on all maritime training. 	Not noted	Not noted	<p>In February 2018, at the World Sustainable Development Summit held in New Delhi, India, Fiji secured railway infrastructure development assistance from the Government of India. The Hon. Attorney General expressed the need for changing the existing railway network to expand from carting sugarcane to alternative transport of carting cargoes and passengers.</p> <p>Using an upgraded rail system in such a manner will relieve pressure on roads and is fundamental to the long-term sustainable development of Fiji. This is also an opportunity to develop approximately 30 kilometres tramline for Light Rail Transit between Suva to Nausori corridor to cart approximately 108,016 passengers.</p>	Not noted
Alternative Transport Systems	<ul style="list-style-type: none"> Introduce such systems to support our busy road network. 	Not noted	Not noted	<p>Introduction of traffic flow and road congestion management:</p> <ul style="list-style-type: none"> Adoption of road pricing – A project plan 	Not noted

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
	<ul style="list-style-type: none"> ▪ Carpooling, walking, motorcycling, dedicated public transport systems from car parks outside the city/town centres into the CBD. <ol style="list-style-type: none"> Cycling as an option Installation of proper bicycle infrastructure. 			<p>was submitted to the Minister of Infrastructure and Transport for further consideration. A recommendation for a feasibility study through Consultancy was approved by the LTA Board.</p> <ul style="list-style-type: none"> ▪ Adoption of priority lines to promote buses – this concept has been approved by the LTA and FRA has included in their road development plans commencing on the Suva to Nausori corridor. ▪ Alternative mode of mass rapid transportation – the LTA Board approved the recommendation to hire a Consultant to conduct a feasibility study on this issue. The study would enable the Government to make decision on the best mode of MRT that can be adopted for Fiji. ▪ Review of speed limits – the FRA is continually conducting speed limit settings on all road conjunction with their Roading Development programmes. ▪ A meeting was held on 4th August on Green Electric Vehicles and its introduction in Fiji. The TWG consisting of FEA, LTA, MOIT, FRA, Department of Environment. ▪ Electric Vehicles have since been driven on Fiji roads and some examples of such vehicles include Toyota Prius, Toyota Alphard, Honda, LPG (dual), Forklifts and golf carts. 	
Traffic Management Systems	<ul style="list-style-type: none"> ▪ Better traffic system to be identified especially during peak hours. ▪ An integrated approach to land-use management is to be adopted. 	Not noted	Not noted	<ul style="list-style-type: none"> ▪ Traffic Control –Peak hours – 7:00 to 8:30am and 4:00 to 6:00pm as part of traffic directions during peak periods to ensure a smooth flow of traffic. ▪ In 2016, the Ministry had established a Technical Working Group (TWG) on Land 	Not noted

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
	<ul style="list-style-type: none"> Introduction and implementation of road speed limits in all centre's aiming in reducing road fatalities. Reviewing and increase of existing parking's fees as a way of reducing traffic in towns and cities. 			Transport. The objective of the TWG is to discuss issues pertaining to Land Transport matters. One of the majors discussed is the traffic volume during peak periods and traffic management. The TWG still continues to date. The following are some examples of traffic counters undertaken by the Land Transport Authority (LTA) and Fiji Roads Authority (FRA).	
Land and Maritime Transport Policies	<ul style="list-style-type: none"> Revision of all Legislative of Provisions Implementation of Policy Strategies Provision of Hydrography Services in Fiji. 	Not noted	Not noted	<ul style="list-style-type: none"> Supporting Legislative Programme Road Vehicle Fleet Policy Public Private Partnership Road Network Ownership and Management Market Entry and Competition Regulation Road Safety Road User Charges Environmental and Social Safeguard Development of the maritime transport institutions Market entry, government support and competition regulation Maritime infrastructure ownership, management and regulation Pricing, cost recovery and Community Service Obligations (CSO's) Regulation of service standards. 	Not noted
Transport Planning Database	<ul style="list-style-type: none"> Implementation of phase 2 of the Household Travel Survey; Availability of Transport Data on Vehicle Registration Type (Model, Year of Manufacture, Fuel Usage); and 	Not noted	Not noted	<p>The Transport Planning Database will allow transport policy and planners calibrate data to gauge the travel behaviour patterns of the travelling population in terms of passenger and freight movement, impact of carbon emission in view of changes to other socioeconomic indicators.</p> <p>This is a new nationwide project that should help planners know the level of travel and the nature of</p>	Not noted

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
	<ul style="list-style-type: none"> Consideration for the adoption of the Singapore Transport System. 			movement and economic and financial returns associated with these movements.	
Macro Economy and the Transport Sector	<ul style="list-style-type: none"> Inflation to ensure sustainability, supply and demand. The RBF's monetary policy objectives of low inflation and adequate foreign reserves is intact – monetary policy remains accommodative. The economy cannot be parked and fixed rather it must be fixed on the fly. 	Not noted	Not noted	<p>The transport sector contributes directly as well as indirectly to economic growth as all other sectors depend on transportation services.</p> <p>Some major issues related to transport which affect or hinder economic activity/growth include:</p> <ul style="list-style-type: none"> Weight restrictions on road transport of cargo/exports to the ports for industries such as minerals water, cement, logs, etc.; Congestion, delays and inefficiency at ports affecting trade; Restricted growth of tourism in the Northern Division due to high cost and low frequency of flights and poor service delivery by marine operators; Loss of productivity and increased economic costs due to traffic jams in major urban centers. <p><u>Policy:</u></p> <ul style="list-style-type: none"> Fiji's military Policy has been toward growth Policy is driven by forecast Cyclones damage affects policy due to diverging funds. 	<ul style="list-style-type: none"> Establishment of a Technical Working Group (TWG) for the Economic and Tax/Customs Update. <p><u>Consideration:</u></p> <ul style="list-style-type: none"> Re-valuation of Currency % of household expenditure obtain from RBF.
Sustainable Transport and Sustainable Cities	<ul style="list-style-type: none"> Global and Regional Context of SUTI Sustainable Urban Transport Index (SUTI) State of Urbanization and Urban Transport. Policy Options & 	Not noted	Not noted	<ul style="list-style-type: none"> Target 11.2: By 2030, provide access to safe, affordable accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, 	<ul style="list-style-type: none"> Implementation of Sustainable Urban Transport Index; Use of Indicators as platform for data collation for the Transport Sector.

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
	Strategies.			<p>persons with disabilities and older persons.</p> <ul style="list-style-type: none"> ▪ Pacific Roadmap for Sustainable Development. <p><u>Regional Action Programme on Sustainable Transport Connectivity (2017-2021)</u> Adopted by the Ministerial Conference on Transport, December 2016, Moscow</p> <ul style="list-style-type: none"> ▪ Regional transport infrastructure connectivity ▪ Regional transport operational connectivity ▪ Strengthening of transport connectivity between Asia and Europe. ▪ Transport connectivity for LDCs, LLDCs and SIDs. ▪ Rural connectivity to wider networks ▪ Sustainable urban transport ▪ Improving road safety <p><u>Sustainable Urban Transport Index</u></p> <ul style="list-style-type: none"> ▪ To measure urban transport and progress towards Sustainable Development Goals (SDGs) in Asian cities. ▪ To help summarize, compare and track the performance of urban transport in cities. ▪ To facilitate discussion to develop plans and policies to improve urban transport: <ul style="list-style-type: none"> -Simple Approach -Not too many indicators -Not complex calculations Simple, based on existing methodology, policies. <p><u>Possible Policy Elements</u></p>	

Issues Highlighted	Strategy		Targets	Responsible Agencies	Remarks	Action Items
					<ul style="list-style-type: none">Road safety improvement -Regional goals targets and indicatorsFunding and operational costsTravel demand management -ICT, Compact city planning -Fare Integration, common ticketing. -Parking policy, check private motor population.Air quality and GHG -Clean Vehicle Technologies (energy, clean fuels) -Electric Mobility -Congestion management-Road pricing, car free areas/days.	
Greening the Fiji Bus Industry	<ul style="list-style-type: none">Urban Transport ChallengesUrban transport opportunityWay Forward		Not noted	Not noted	<u>Urban Transport Challenges</u> <ul style="list-style-type: none">Fiji is at a critical juncture to improve its urban transport system.Fiji's strong economic growth has seen a corresponding growing trend of car ownership: vehicle registration grew 24% between 2013 and 2016, compared to 9% between 2010 and 2013.The higher number of cars on the road has led to traffic congestion that, without proactive management, will worsen considerably.Public bus transport has traditionally been, and still is, very popular in Fiji, bus transport modal share is high (50-70% share across all transport modes). <u>Urban Transport Opportunity</u> The best way to promote sustainable transport is: <ul style="list-style-type: none">Sustain the already high public transport modal shareEncouraging and incentivize private	<ul style="list-style-type: none">Close consultations with ADB on the Greening Bus fleet project

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
				<p>vehicle users to shift to public transport.</p> <p>Way Forward:</p> <ul style="list-style-type: none"> ▪ Bus fleet upgrading with clean, efficient buses. ▪ Better infrastructure: <ul style="list-style-type: none"> -Upgraded bus stops -Bus priority measures in congested transport corridors -Improving bus terminals -Walking infrastructure ▪ Strengthening regulations and enforcement of public transport standards. 	
Alternative Transport	<ul style="list-style-type: none"> ▪ Planning ▪ Social and economic considerations ▪ Capital Costs Vs. Capacity for Rapid Transit Modes 	Not noted	Not noted	<p><u>Social and Economic considerations</u></p> <p>Improving public transport sector is pro-poor, but projects needs to be designed with sustainability and social inclusion in mind.</p>	<p>Indepth planning studies on mass transit or rapid transit with cost detailed engineering or to produce the project.</p> <p>Preliminary evaluations.</p>
Intelligent Transport System E-ticketing	<ul style="list-style-type: none"> ▪ E-ticketing data can be used by policy makers to identify issues in the implementation of the E-ticketing E.g. Future implementation can include finer details such as transport route and stop using GPS. ▪ It was suggested that a similar system can be 	Not noted	Not noted	<ul style="list-style-type: none"> ▪ Such as giving subsidized fares for children who are able to obtain 85% attendance rate. ▪ Private bus operators raised the issue of the increased duration of the subsidized fares leading to school children loitering and indirectly reducing profits in peak times. 	<ul style="list-style-type: none"> ▪ MOIT to obtain statistics from Vodafone on certain data that would assist in policy formulation. ▪ The bus operators wished to record into the communique that the better data on

Issues Highlighted	Strategy	Targets	Responsible Agencies	Remarks	Action Items
	<p>implemented for school children.</p> <ul style="list-style-type: none"> In future the card can be changed to a One card all pass system where other modes of transport such as maritime/taxis etc. 				<p>school children loitering (due to a longer duration of the subsidized fares) and the issue of adults using children cards will be addressed going forward.</p> <p><u>Consideration</u></p> <ul style="list-style-type: none"> Consultation with relevant stakeholders regarding phase 2.
Innovative technology	<ul style="list-style-type: none"> There was a wide range of ITS systems shown ranging from One card all pass, traffic enforcement, Automatic toll gate payments, traffic information management. The Ministry of Land, Transport and Infrastructure in Korea has export several of ITS overseas and are willing to provide assistance if there is an official request. It was important that Fiji start with a ITS Master Plan before selecting which..... 	Not noted	Not noted	<ul style="list-style-type: none"> Recommended that Fiji make a ITS master plan with a vision of how the system will look like. But the Plan should be generic enough. 	<ul style="list-style-type: none"> If Fiji wants to implement a comprehensive ITS then the first step will be to create a Master Plan.

Appendix 7 LTA Latest traffic count results – requested by World Bank

SUVA BUS STAND – PORT SIDE STUDY 11 TH -13 TH JULY			
DATA REQUESTED	TIME & DATE	2 LANE ROAD EXITING BUS STAND	2 LANE ROAD BESIDE PORT
Number of Vehicles	Tuesday 11 July 2017 / 11am – 11.59pm	5013	5836
	Wednesday 12 July 2017 / 12am – 11.59pm	7922	9740
	Thursday 13 July 2017 / 12am – 11am	3093	3247
Time (Peak Hours)	Tuesday 11 July 2017 / 11am – 11.59pm	PM Peak 1.45pm – 2.45pm	PM Peak 4.30pm – 5.30pm
	Wednesday 12 July 2017 / 12am – 11.59pm	AM Peak 6.45am – 7.45am / PM Peak 3.45pm – 4.55pm	AM Peak 7.45am – 8.45am / PM Peak 5pm – 6pm
	Thursday 13 July 2017 / 12am – 11am	AM Peak 6.45am – 7.45am	AM Peak 7.45am – 8.45am
FNU CAMPUS NASINU (6 th – 13 th May, 2016)			
DATA REQUESTED	TIME & DATE	JW Kingdom Hall	
Number of Vehicles	Friday 6 May 2016, 12pm – 11.59pm	7730	
	Saturday 7 May 2016, 24hrs	11029	
	Sunday 8 May 2016, 24hrs	8794	
	Monday 9 May 2016, 24hrs	10290	
	Tuesday 10 May, 24hrs	10382	
	Wednesday 11 May, 24hrs	10758	
	Thursday 12 May, 24hrs	11025	
	Friday 13 May, 12am – 2pm	5708	
Time (Peak Hours)	Friday 6 May 2016, 12pm – 11.59pm	PM Peak 5.30pm – 6.30pm	
	Saturday 7 May 2016, 24hrs	AM Peak 11.45am – 12.45pm / PM Peak 4.30pm – 5.30pm	
	Sunday 8 May 2016, 24hrs	AM Peak 10am – 11am / PM Peak 12.30pm – 1.30pm	
	Monday 9 May 2016, 24hrs	AM Peak 7.45am – 8.45am / PM Peak 5.30pm – 6.30pm	
	Tuesday 10 May, 24hrs	AM Peak 7.30am – 8.30am / PM Peak 5.15pm – 6.15pm	
	Wednesday 11 May, 24hrs	AM Peak 9.30am – 10.30am / PM Peak 5.30pm – 6.30pm	
	Thursday 12 May, 24hrs	AM Peak 7.45am – 8.45am / PM Peak 5.45pm – 6.45pm	
	Friday 13 May, 12am – 2pm	AM Peak 11am – 12pm	
LAQERE (6 th – 13 th May 2016)			
DATA REQUESTED	TIME & DATE	In front of FRA Depot	
Number of Vehicles	Friday 6 May 2016, 4pm – 11.59pm	7256	
	Saturday 7 May 2016, 24hrs	21126	
	Sunday 8 May 2016, 24hrs	18819	
	Monday 9 May 2016, 24hrs	18620	
	Tuesday 10 May, 24hrs	17387	
	Wednesday 11 May, 24hrs	18325	
	Thursday 12 May, 24hrs	18484	
	Friday 13 May, 12am – 2pm	12017	
Time (Peak Hours)	Friday 6 May 2016, 4pm – 11.59pm	Nil	

	Saturday 7 May 2016, 24hrs	AM Peak 7.30am – 8.30am / PM Peak 7pm – 8pm	
	Sunday 8 May 2016, 24hrs	AM Peak 9am – 10am / PM Peak 4.30pm – 5.30pm	
	Monday 9 May 2016, 24hrs	AM Peak 6.30am – 7.30am / PM Peak 4.30pm – 5.30pm	
	Tuesday 10 May, 24hrs	AM Peak 7.15am – 8.15am / PM Peak 4pm – 5pm	
	Wednesday 11 May, 24hrs	AM Peak 6.30am – 7.30am / PM Peak 3pm – 4pm	
	Thursday 12 May, 24hrs	AM Peak 6.30am – 7.30am / PM Peak 6.45pm – 7.45pm	
	Friday 13 May, 12am – 2pm	AM Peak 6.30am – 7.30am	
FTG NASINU (6 th – 13 th May 2016)			
DATA REQUESTED	TIME & DATE	In front of Forestry Department	
Number of Vehicles	Friday 6 May 2016, 4pm – 11.59pm	9041	
	Saturday 7 May 2016, 24hrs	20424	
	Sunday 8 May 2016, 24hrs	18710	
	Monday 9 May 2016, 24hrs	17595	
	Tuesday 10 May, 24hrs	17140	
	Wednesday 11 May, 24hrs	17495	
	Thursday 12 May, 24hrs	17885	
	Friday 13 May, 12am – 2pm	9313	
Time (Peak Hours)	Friday 6 May 2016, 4pm – 11.59pm	Nil	
	Saturday 7 May 2016, 24hrs	AM Peak 11.15am – 12.15pm / PM Peak 3pm – 4pm	
	Sunday 8 May 2016, 24hrs	AM Peak 10am – 11am / PM Peak 12.30pm – 1.30pm	
	Monday 9 May 2016, 24hrs	AM Peak 11.30am – 12.30am / PM Peak 5.15pm – 6.15pm	
	Tuesday 10 May, 24hrs	AM Peak 10.45am – 11.45am / PM Peak 6pm – 7pm	
	Wednesday 11 May, 24hrs	AM Peak 10.30am – 11.30am / PM Peak 5pm – 6pm	
	Thursday 12 May, 24hrs	AM Peak 11.45am – 12.45am / PM Peak 5.30pm – 6.30pm	
	Friday 13 May, 12am – 2pm	AM Peak 11.15am – 12.15pm	
NABUA (6 th – 13 th May 2016)			
DATA REQUESTED	TIME & DATE	150m from Nivis Motors Roundabout	
Number of Vehicles	Friday 6 May 2016, 11pm – 11.59pm	12404	
	Saturday 7 May 2016, 24hrs	19020	
	Sunday 8 May 2016, 24hrs	13827	
	Monday 9 May 2016, 24hrs	17814	
	Tuesday 10 May, 24hrs	18013	
	Wednesday 11 May, 24hrs	18433	
	Thursday 12 May, 24hrs	19039	
	Friday 13 May, 12am – 2pm	12257	

Time (Peak Hours)	Friday 6 May 2016, 4pm – 11.59pm	PM Peak 3pm – 4pm	
	Saturday 7 May 2016, 24hrs	AM Peak 10.45am – 11.45pm / PM Peak 12pm – 1pm	
	Sunday 8 May 2016, 24hrs	AM Peak 9am – 10am / PM Peak 12.30pm – 1.30pm	
	Monday 9 May 2016, 24hrs	AM Peak 7.15am – 8.15am / PM Peak 2pm – 3pm	
	Tuesday 10 May, 24hrs	AM Peak 7am – 8am / PM Peak 2.45pm – 3.45pm	
	Wednesday 11 May, 24hrs	AM Peak 7.15am – 8.15am / PM Peak 3.15pm – 4.15pm	
	Thursday 12 May, 24hrs	AM Peak 7.30am – 8.30am / PM Peak 2.30pm – 3.30pm	
	Friday 13 May, 12am – 2pm	AM Peak 7.15am – 8.15am	
FNU CAMPUS NASINU (4th – 11th May 2017)			
DATA REQUESTED	TIME & DATE	JW Kingdom Hall	
Number of Vehicles	Thursday 4 May 2016, 12pm – 11.59pm	7702	
	Friday 5 May 2016, 24hrs	14991	
	Saturday 6 May, 24hrs	13608	
	Sunday 7 May, 24hrs	11270	
	Monday 8 May 2016, 24hrs	13753	
	Tuesday 9 May, 24hrs	12991	
	Wednesday 10 May, 24hrs	13144	
	Thursday 11 May, 12am – 2pm	8186	
Time (Peak Hours)	Thursday 4 May 2016, 12pm – 11.59pm	PM Peak 3.45pm – 4.45pm	
	Friday 5 May 2016, 24hrs	AM Peak 6.15am – 7.15am / PM Peak 5.30pm – 6.30pm	
	Saturday 6 May, 24hrs	AM Peak 11.15am – 12.15pm / PM Peak 5.45pm – 6.45pm	
	Sunday 7 May, 24hrs	AM Peak 9.15am – 10.15am / PM Peak 12.15pm – 1.15pm	
	Monday 8 May 2016, 24hrs	AM Peak 6.30am – 7.30am / PM Peak 3.15pm – 4.15pm	
	Tuesday 9 May, 24hrs	AM Peak 6.15am – 7.15am / PM Peak 4.30pm – 5.30pm	
	Wednesday 10 May, 24hrs	AM Peak 6.30am – 7.30am / PM Peak 2.45pm – 3.45pm	
	Thursday 11 May, 12am – 2pm	AM Peak 6.30am – 7.30am / PM Peak 5.45pm – 6.45pm	

Appendix 8 Planning versus Reporting

Objectives	Strategies	Responsible	Indicators	Current year Targets	Output Reported
2013 ACP					
Introduction of traffic flow and congestion management	Adoption of road pricing	MTMS/ MPSV/ GMO	Research and analysis/ conceptual framework/ Consultation/ submission	2nd update to Board-March 31st/Final submission Nov 30 th	<p>The Traffic Management Unit is responsible for developing and implementing traffic management policies consistent with the needs of road users and the objective of road safety in conjunction with the highway authorities and stakeholders. Following the successful launch of the Red Light and Speed cameras in the Central Eastern region in 2012, the Unit started the groundwork on Road Pricing; Speed Limit Review; and Fiji Road Rules projects in 2013.</p> <p>Road Pricing: The LTA Board has approved a proposal made by the Unit to hire a consultant to conduct a feasibility study on the introduction of road pricing or tolling in Fiji, and the tender process will be conducted in the third quarter of 2014.</p> <p>Speed Limit Review: Consultants from Singapore successfully conducted the Speed Limit Review workshop in 2013. The recommendation from the workshop is to conduct a speed limit increase trial in 2014 on the surveyed road areas of Jerusalem Road, Ratu Dovi Road, Princess Road and Suva to Nausori via Kings Road.</p> <p>Fiji Road Rules: The Unit has completed a draft document on the establishment of Fiji Road Rules targeted at promoting safer roads. The document will be finalized for distribution in 2014.</p> <p>Red Light and Speed cameras: In 2013, the Unit captured 6,293 incidents on the red light and speed</p>
	Adoption of priority lanes to promote buses.			1st draft-31st March/2nd draft-June 30th/Final submission to Board-Sept 30 th	
	Alternative Mode of Mass Rapid Transportation			2nd update to Board-31st March/Final submission to Board-Sept 30th/Cabinet Paper-Dec 31 st	
	Review of Speed Limits.			2nd update to Board-Feb 28th/Final submission to Board-June 30th/Cabinet Paper-July 31st/Awareness-Oct 30th/Implementation-Nov 30 th Complete in 3rd quarter/Awareness-4th quarter.	

Objectives	Strategies	Responsible	Indicators	Current year Targets	Output Reported
					cameras of which 1,303 fines were paid with total revenue collected of \$44,439.
2014 ACP					
Introduction of Traffic flow and congestion management	Electronic Road Pricing – Adoption of road pricing	GMO MTMS	% completion of research Approval of concept paper	100% completion of research Concept paper approval by Board	Annual Report was not tabled
	Bus Lanes or Priority Lanes – adoption of priority lanes to promote buses	GMO MTMS MPSV	% completion of research Approval of concept paper	100% completion of research Concept Paper Approval by Board	
	Mass Rapid Transportation – Alternative Mode of Mass Rapid Transportation.	GMO MTMS MPSV	% completion of research Approval of concept paper	100% completion of research Concept Paper Approval by Board	
	Traffic Control Centre	GMO MTMS MPSV	% completion of research Approval of concept paper	100% completion of research Concept Paper Approval by Board	
Speed Management	Speed Limit Review	GMO MTMS	% completion of review	100% completion of review by DEC 2014	
	Speed Camera Operations	GMO MTMS	Number of TINs issued	3,000 TINs issued per qtr	
			% of TINs paid within 21 days	60% of TINs paid within 21 days	
			% of successful cases	90% of successful cases	
Standards & Safety on roads	Fiji Road Rules – Promote safer roads by establishment of Fiji roads rules	GMO MTMS	% completion & implementation	100% completion & Implementation by DEC 2014	
	Traffic Management Schemes for Municipal Councils – Advisory role	GMO MTMS	Number of Traffic Management Advice given via stakeholder meetings	2 traffic Advices per qtr.	
	Existing Road Safety Audits – Implement 10 audits on selected section of the national main road	GMO MTMS	Number of road audits	10 audits per year	

Objectives	Strategies	Responsible	Indicators	Current year Targets	Output Reported
2015 ACP					
Introduction of Traffic Flow and Congestion Management.	Bus-lanes – priority lanes to promote bus travel.	MTMS/MPTU/RMs	Concept paper on bus lanes	Board Approval 1 st Qtr	Annual Report was not tabled
	Mass Rapid Transportation.	MTMS/MPTU/RMs	Feasibility study and report on mass rapid transport.	Board Approval 1st Qtr	
	Traffic Operation Centre	MTMS/MPTU/RMs	Concept & project paper	Board approval – May 2015	
			PSIP submission	March 2015	
Speed Management	Speed Limit Review	MTMS/MPTU/RMs	Completion report	1 st Qtr: Nadi-Lautoka	
				2 nd Qtr: Suva-Navua	
				3 rd Qtr: Navua – Sigatoka	
				4 th Qtr: Sigatoka-Nadi	
	Speed and Redlight Camera Project	MTMS	Status report	Monthly operations	
			% completion	Upgrade back office system completed – 4 th Qtr	
			% completion	Install one additional fixed site and upgrade back office system – June 2015	
Standards and Safety on Roads	Existing road safety audits	MTMS/RMs	Audit reports	North: 2 audits by December 2015	
				West: 4 audits by December 2015	
				Central Eastern: 4 audits in December 2015	
	Advisory role on traffic management schemes for Municipal Councils.		Number of reports and meetings	2 advices per Qtr	
	Review/development of policies and procedures.		Signed off policies and procedures	1 reviewed policy/procedure and 1 new policy/procedure per Qtr	

Objectives	Strategies	Responsible	Indicators	Current year Targets	Output Reported
	Stakeholder consultation to clarify approval and process of road-works permit scheme and implementation of all traffic regulations.	MTMS/RMs	MOU sign off	1 st Qtr	
			Specimen charge gazette	1 st Qtr	
			Enforcement of all traffic regulations	2 nd Qtr and onwards	
	Research, stakeholder consultation, benchmarking and board submission.	MTMS/MIT/RMs	Concept paper submitted	2 nd Qtr	
			Board paper submitted	3 rd Qtr	



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