Fiji Roads Authority

ASSET MANANGEMENT PLAN

31 August 2018

Rev 1.0

PLAN UPDATE AND DISTRIBUTION CONTROL (RESPONSIBILITY: HEAD OF GOVERNANCE)

PLAN UPDATE

Date	Principal Changes
Revision 1.0	Original Issue

UPDATES ADVISED

Date	**By**

DEFINITIONS

For the meaning of the various terms that are used in this asset management plan see Attachment 'P' in the 'Green Book' – the FRA's 'Operations Manual'.

Endorsed by: .....
Jonathan Moore
(Chief Executive Officer)

Date: 28 SEPT 2018

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1.0 STRATEGIC CONTEX

SECTION 1.1 – INTRODUCTION & SERVICE DESCRIPTION

This asset management plan (AMP) explains how the Fiji Roads Authority (FRA) manages the roads, bridges and public jetties in Fiji.

The term 'road' or 'roads' means all land and civil infrastructure constructed by any municipal council or government body, (or any other body authorised by a municipal council or government body) that is used as or facilitates a public right of passage for the movement of vehicles and pedestrians, including but not limited to:

(a) the vehicle pavement from curb to curb, or where there is no curb, the roadside verges, and drains;

(b) road signs, road marker posts and other markings, including pedestrian crossings;

(c) traffic islands;

(d) bridges and culverts;

(e) footpaths and pavements adjacent to a vehicle pavement;

(f) street lights and traffic lights;

(g) parking meters;

(h) jetties; (and)

(i) all national roads, municipal roads, and such other public roads as may be determined by the FRA.

The FRA's responsibilities include all matters pertaining to construction, maintenance and development of the roads, including but not limited to:

(a) managing (land provision, network planning, designing, constructing, maintaining, renewing and general use of) all public roads, bridges and jetties;

(b) traffic management (including road design, traffic signs and markings); and road safety (relating to provision and management of the road);

(c) the review of over -weight, -width, -height and -length permits;

(d) planning and management of road survey and design;

(e) design management, procurement and construction management for the capital works programme and maintenance programme;

(f) such other matters as the Minister may direct.

(Source: Sections 2 and 6 Fiji Roads Authority Decree 2012 as amended in 2014)

SECTION 1.2 - MISSION, VISION AND GOALS

Table 1.2.1 lists the FRA's adopted Mission, Vision and Goals – and shows how these are linked to the outcomes the Fiji Government is seeking and to the FRA's performance targets.

TABLE 1.2.1 – MISSION, VISION AND GOALS

MISSION	•A better land transport network for Fiji
VISION	•An affordable, integrated, safe, responsive and sustainable network of roads, bridges and jetties
GOALS	•To effectively, efficiently and sustainably provide an environmentally friendly land transport network to which people are able to gain easy access and travel on safely, efficiently and comfortably to their destinations. •To halt the deterioration trend and reduce the value of deferred maintenance and deferred renewals. •To develop capacity and capability at all levels of the Roading industry such that Fijians are ultimately able to be appointed to any role within the FRA, Principal Engineering Services Provider or Maintenance Contractor organisations.

The FRA's Mission, Vision, Goals and Performance Targets contribute to Fiji's overall development in the following Key Government Plans and Constitutional Pillars:

(a) Constitution of the Republic of Fiji 2013 - Reasonable Access to Transportation.

(b) The Fijian Government National Development Plan 2017

(c) Developing a Common National Identity and Building Social Cohesion.

(d) Enhancing Public Sector Efficiency, Performance Effectiveness and Service Delivery.

(e) Achieving Higher Economic Growth While Ensuring Sustainability.

(f) Developing an Integrated Development Structure at the Divisional Level.

SECTION 1.3 - STAKEHOLDERS AND CONSULTATION

1. STAKEHOLDERS

The FRA's stakeholders are:

'any party having an interest in anything at all that the FRA is or isn't doing relating to the provision and management of an effective and efficient network of roads, bridges and jetties in Fiji'.

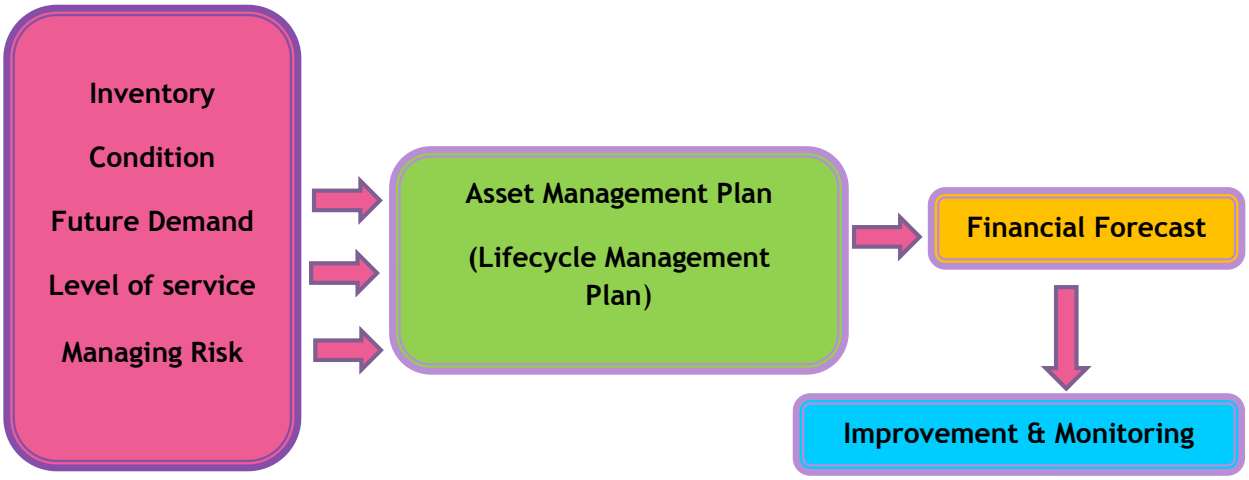
A selection of key FRA stakeholders include:

- All road, bridge and jetty users
- Adjoining property users
- Fiji Bus Operators Association
- Road Haulage Association
- Fiji Taxi's Union
- Government Ministries and Authorities
- Fiji Police, Military and Emergency Services
- Municipal Councils
- Rural Local Authorities
- iTaukei Land Trust Board
- Major Fijian Companies e.g. Fiji Sugar Corporation, Fiji Water etc
- Tourism Fiji
- Investment Fiji
- Public Service Commission
- Fiji Corrections Services
- Biosecurity Authority
- Fiji Universities
- Fiji Development Bank
- Fiji Sports Council
- Post Fiji Ltd

SECTION 1.4 – ASSET MANAGEMENT MATURITY

1.4.1

The typical process that organizations utilize when developing and monitoring an Asset Management Plan is shown in fig. 1.4.1 below:



The FRA has undertaken past studies to acquire the preliminary data required to develop and implement a robust Asset Management Plan.

One of the strongest capabilities that FRA possesses is the FRA GIS system that is well developed, updated regularly and available to public and other stakeholders.

The one area of initial input that is missing is detailed knowledge of Asset Condition. This not only hinders the full development of a robust Asset Management Plan but also means that valuation and depreciation is estimated using historic data and assumptions rather than up to date condition information.

To rectify this, FRA proposes to follow the lead of other developed countries and procure roughness measurement equipment that can be fitted to FRA vehicles. Road condition data (roughness and surface condition initially) can be fed into the FRA GIS system and then used for a variety of purposes including Asset Valuation, Asset Depreciation, Forward Works Programme, Critical Asset Identification and Resilience Planning.

Year on year knowledge and data will also enable FRA to review the network holistically and show areas of improvement towards long term goals

SECTION 1.5 – FUTURE DEMAND

1. FUTURE ROADS & JETTIES DEMANDS

Until an accurate and complete picture of the future demand for the roads and jetties can be obtained, the key issues that the FRA has taken into account when preparing this AMP are listed in Table 1.5.3.

TABLE 1.4.1 –FUTURE DEMANDS

FUTURE DEMANDS

▪ **Backlog:**	The significant amount of maintenance and renewals work (including the renewal and replacement of a list of critical bridges and jetties) that needs to be done;
• **Tourism:**	Given the importance of tourism to Fiji's economy, the desirability of there being better and more appealing main roads – especially the roads from the Nadi and Nausori airports to tourism centres;
• **Congestion:**	The increasing congestion in the Suva CBD. (The 2014 Greater Suva Transportation Study identified that the current population there could increase from 280,000 to 350,000, and the number of vehicles from 36,700 to 43,500, by 2030);
• **Village Areas:**	The need to improve the roads through village areas/settlement areas and on the outer islands;
• **Rural Roads:** especially	The need to improve the roads in the rural area – to ensure public transport routes are able to be used at all reasonable times (including school buses);
• **Heavy Vehicle Use:**	The significant degree of damage that can be caused to the roads by overweight axle loads and/or overweight gross vehicle masses.
• **Key Industries:**	The need to make appropriate provision for vehicles associated with the sugar cane industry and relating to growth in particular industries (e.g. garments and food manufacturing/processing);
• **Climate Change:**	The necessity to consider all potential climate change impacts – including the likelihood of more frequent severe storms; and
• **Road Safety:**	The need to more comprehensively address road safety concerns (including the extent to which the road verges are used by pedestrians).

SECTION 1.6 – THE HIGH LEVEL STRATEGIC APPROACH

The FRA's high level strategic approach for the management of its business is in Table 1.5.1.

TABLE 1.5.1 – THE HIGH LEVEL STRATEGIC APPROACH

- **'Other' Roads:** In the rural area accept responsibility only for those roads not formerly managed by the DNR or the Municipal Councils that serve more than one property and are publicly used. Cane roads will only be served if there is an active bus road.
- **Backlog:** Halt the deterioration trend and reduce the value of roading deferred maintenance and deferred renewals (backlog);
- **Rural Roads:** Improve the roads in the rural areas;
- **Bridges:** Recognise the urgent necessity to significantly renew or replace as a matter of urgency approximately 100 bridges;
- **Jetties:** Adopt a more detailed programme for maintaining, renewing and further developing them;
- **Sustainability:** After the backlog has been arrested ensure sufficient funds continue to be allocated for maintenance and renewals annually to enable the roads, bridges and jetties to be sustainably maintained as the first priority;
- **Technical Standards:** Adopt and ensure compliance with a new set of technical standards (for roads', bridges' and jetties' maintenance and future development);
- **Network Controls:** Exercise greater control over road access and egress, and the placement of private structures, stands, billboards, and so forth on the road reserve;
- **Strategic Roads:** Progressively upgrade the principal strategic routes in a manner that links with the Government's economic development objectives – especially tourism – funded principally from loan;
- **Development Impacts:** Ensure subdivides and developers (and all parties engaged in projects like the provision of public infrastructure, mining, forestry harvesting and so forth) pay a fair share of the additional costs that their subdivisions and developments cause;
- **Heavy Vehicle Use:** Devise and enforce controls to reduce damage to the roads by heavy vehicles;
- **The Road Reserve:** Work in a spirit of close co-operation with the Utility providers (power, water supply, waste water and telecommunications), the Municipal Councils, the iTLTB, Ministry of Lands, and all others whose business involves use of the road reserve, to ensure achievement of all parties' objectives in the most effective, efficient, and integrated way;
- **Road Safety:** Consider 'safety first' in everything that the FRA does – including, until the substandard bridges are able to be repaired or replaced imposing additional use restrictions (or even closing the bridges, as has historically been done for the Stinson Bridge in the Suva CBD, altogether);
- **Resilience:** Make financial provision for at least one major storm event annually and ensure there is a well embedded process for a quick recovery;
- **Transparency:** Except in instances where confidentiality is necessary to protect privacy or for legal reasons etc., be entirely open and transparent about all aspects of the FRA's business.

SECTION 1.7 – SIGNIFICANT AND ASSUMPTION

Significant assumption is;

"Something that is not necessarily true but which is put forward and taken to be true for the purposes of identifying the future likely cost of maintaining and developing the road network"

Assumptions have to be made when the FRA doesn't have precise facts upon which to make a required decision.

It is very important that the assumptions be clearly stated because:

a) they are critical to development of the intended future management approach; and
b) it is important that future readers of the plan understand the philosophy that underpins the chosen direction and calculation of the likely costs.

The FRA considered the following assumptions when preparing this AMP.

TABLE 1.6.1 – SIGNIFICANT ASSUMPTIONS

No.	Assumption	Likelihood of the assumption eventuating	Comments – Including the likely impact of each assumption
1.	**Annual Inflation and Cost Escalation Will Be Minimal** That annual inflation and cost escalation will be close to zero	Medium	The five-year program is expressed in 2018 dollar terms. If prices increase as a result of inflation or cost escalation the financial forecasts will have to be increased. Inflation is the **general** price level of all goods and services. Cost escalation is the cost price of **specific goods or services** over a period of time and the two have to be considered carefully because they can differ so much. For instance, in 2003-2007 US inflation was less than 5% but the cost of steel increased by 50%. The cost of specific commodities (e.g. oil) can have a particular impact on the cost of maintaining and upgrading roads. The likelihood of this assumption eventuating is medium because there is the possibility that inflation or cost escalation (relating to a significant aspect of the FRA's operations) will occur.

No.	Assumption	Likelihood of the assumption eventuating	Comments – Including the likely impact of each assumption
2.	**The FRA will receive sufficient funding to enable it to carry out its proposed works programme.** That the FRA will receive annual funding at the level identified in the Costed Operational Plan and 5 year strategic plan as being required	Low	If annual funding at the level identified as being required isn't forthcoming the FRA will have to review its Asset Management Plan and agree an amended programme – the effect of which will be: • to reduce the future level of service it is able to provide; and/or • to defer or delete particular proposed projects (if only deferred and not deleted this will have a consequential impact on later proposed projects – possibly requiring their deletion); and/or • to reassess its management and works' organisation approach. The likelihood of this assumption eventuating is low because the AMP has been prepared on the basis of what the FRA consider what is required.
3.	**Project Costs Will Be as Budgeted** That the proposed works will (accumulatively) be able to be provided to the standard required for not more than their estimated costs each year.	Medium	If the tendered price for any project is significantly higher than budgeted the FRA may be forced to review its options – which include reprioritizing the project, abandoning it, reducing its scope, or deleting or deferring some other project in order to release funds to finance it. If this happens more than occasionally or more than in just a minor way, the effect can be a quite serious ricochet effect on the entire programme (with other proposed projects being significantly delayed and having to be reprogrammed for future years or even not able to be done at all). The likelihood of this assumption eventuating is medium because while preliminary or, in some cases detailed, designs and cost estimates have already been prepared, in others they haven't and the forecasted cost can be considered to be little more than a subjective indication at this stage.
4.	**Minimal Costs Will be Carried Forward from Year to Year**	High	When projects aren't fully completed (and/or fully paid for) in the year for which they have been programmed the

	That the FRA will complete and fully pay for all projects in the year for which they have been programmed.		effect can be the necessity to (perhaps significantly) defer or delete (or reduce in scope) projects from the following year's programme in order to fund the deferred projects' completion and/or cost. (Contract retentions are a different issue). The likelihood of this assumption eventuating is high because the FRA has robust mechanisms to ensure each year's proposed programme is completed and paid for as planned.
5.	**An Extraordinary Major Storm Event Won't Occur** That the cost of repairing damage caused by any storm event (or other natural hazard event that may occur) won't exceed $10m VIP in any year.	Low	Significant storm events are a fact of life in Fiji. The budget includes a provisional sum of $8.7m VIP p.a. for storm damage. If more than this is required either an additional funding allocation from government will have to be obtained or other proposed work will have to be deleted or reduced in order to provide the required funds. The likelihood of this assumption eventuating is low because there have been some significant storm events in recent years.
6.	**No Other Extraordinary Risk Event Will Occur** That no extraordinary risk event will occur – that all identified risks will be able to be avoided or mitigated in the manner recorded in the FRA's Risk Register	Medium/ High	Should an extraordinary risk event occur the most likely impact will be an additional funding allocation from the government will have to be obtained or other proposed works deleted or their scope reduced in order to fund the cost of the risk event. The likelihood of this assumption not eventuating is medium/high because although the FRA has done a lot of work to identify all potential risks and agree a mitigation strategy for each (and where required make forward provision for it) there is the possibility that it may have missed something and/or that an event may occur that will have consequences that will require additional funding to resolve.
7.	**No Significant Asset Failures (Or Other Unexpected Costs)** That there are no unforeseen significant asset failures for reasons other than storm damage – or no additional work identified as being urgent or which, for some other reason the FRA is financially liable for, that is in addition to that	Medium	In preparing this AMP and other documents the FRA has endeavored to make reasonable financial provision for all foreseeable needs and obligations. There is always a possibility however that additional non-programmed costs will be incurred because: • of an unscheduled work need (including a need caused by a land development project – e.g. forestry harvesting, mining, or major public infrastructure

	already planned. (e.g. bridge surveys identify additional urgent remedial works, a bridge collapses or a major slip occurs).		development) of which the FRA was unaware or did not expect, arises; • of some sort of legal dispute; or • the FRA has a legal obligation of which it was previously unaware. The likelihood of this assumption eventuating is medium because the FRA's knowledge about the network, and especially about the condition of the various assets, is currently not as good as it should be – but is improving rapidly (and in future years should be such that the likelihood can be changed to high).
8.	**Tax Rates (including VAT & Withholding Tax) won't change** That the Government will not increase VAT or withholding tax – or introduce any new or increase any of the other existing taxes. (e.g. taxes payable on plant and other goods that the FRA may need to procure from other countries).	High	If VAT, withholding tax or other relevant taxes are increased the forecasted cost of the work will increase. The likelihood of this assumption eventuating is high because there has been no suggestion the Government is considering increasing VAT or the other relevant taxes

Note: If the 'likelihood of the assumption' eventuating is 'high' it is probable that the assumption as stated will occur. If it is 'low' there is a significant chance the assumption as stated won't be the case. If the rating is 'medium' the assumption may or may not be correct. There is a reasonable chance that it won't be – not necessarily to a major extent, but to at least some degree.

SECTION 1.8 – LEVELS OF SERVICE (LOS), PERFORMANCE MEASURES AND TARGETS

1. INTRODUCTION

The first step in the formulation of 'Levels of Service' (LoS) is to identify the 'Service Areas' - those aspects of the roading network that the FRA's stakeholders value, or which are essential for its efficient and effective management. The FRA has formulated its LoS under seven service area headings:

(a) Health and Safety;
(b) Risk Management (other than risks that fall under the other six headings). Includes Reputation and Security;
(c) Asset Provision, Development, Renewal and Maintenance (i.e. Asset Stewardship);
(d) Conservation, Environmental Protection and Enhancement (i.e. Environmental Stewardship);
(e) Service Quality (including Aesthetics, Reliability, Responsiveness and Capacity);
(f) Compliance (including Training, Record Keeping / Data Management and Reporting); and
(g) Financial (Economic – Value for Money).

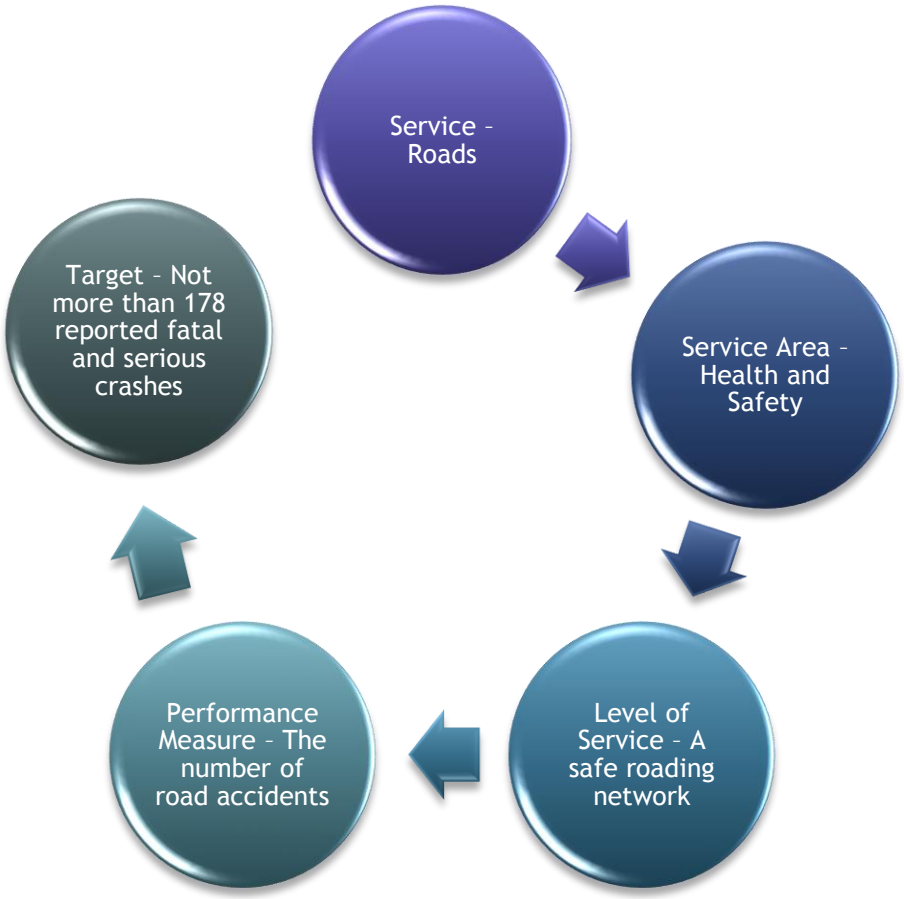
'Levels of Service' describe the outcomes that are expected to result, or the outputs that are intended to be provided, for each the above 'Service Areas'.

'Performance Measures' are the means by which the organisation is able to identify the extent to which the intended 'Level of Service' has been achieved.

'Performance Targets' are the specific quantifiable results (in relation to a 'Performance Measure') that the organization is aiming to achieve.

There will always be a number of performance measures for each service area, and there may also be a number of targets for each performance measure.

TABLE 1.7.1 – THE PERFORMANCE HIERACHY



2. ORGANISATIONAL PERFORMANCE MANUAL

The FRA identifies all of its LoS in, and manages them in, the 'Blue Book' - its 'Organisational Performance Manual'.

The manual is held and managed electronically and following the 2018 update it will be available upon request.

3. HOW LEVELS OF SERVICE (LOS) MANAGED

(a) Because the current LoS is always the sum total of the most recent actual results against the performance targets the concentration is on the performance targets.

(b) The system has been designed to enable the public, the FRA Board and management to quickly see at a glance, at any time, how 'the whole' FRA is performing:

- There are performance targets for all aspects of the business;
- The targets/results are color-coded to distinguish:

- those that are of most interest to road users and the public (i.e. the Level1 Outcome Key Performance Indicators (KPI) Targets - purple);
- those that (although not a KPI) relate to an important part of the business or whichare of particular importance to FRA Managers (i.e. the Level 2 Secondary Outcome or Output Targets - grey); (and)
- those that are of an Input/Technical Service Standard/ Type (that have been designed to identify how well the FRA is performing its day to day, basic, routine technical responsibilities - yellow).

4. PERFORMANCE TARGETS

Table 1.7.2 below lists the FRA's performance targets. The performance targets are based on the following aspirations:

- Fewer fatal and serious injury accidents
- A reduction in the social cost of all recorded injury crashes
- No lost time due to injury by any person engaged on roading activities.
- No health and safety incidents on the roads or within the FRA office.
- An annual reduction in the value of deferred maintenance/ deferred renewals.
- Litter and graffiti removal standards met.
- No significant adverse impacts caused by subdivision and development.

TABLE 1.7.2 – PERFORMANCE MEASURES & TARGETS

Target Reference	Area	Level of Service				
		Performance Measure	Performance Target			
			FY 2018	FY2019	FY 2020	FY 2021
1	Health and Safety	A reduction in the number of black spots (crash clusters/crash locations).	Establish Baseline	Agree Future Targets		
2		All safety improvements budgeted at the start of the financial year completed	100%	100%	100%	100%
3		% of the network meets texture depth standards.	Establish Baseline	Agree Future Targets		
4		The percentage of non-performing streetlights lights at any time.	<5%			
5		% of traffic signals not working at any time	<5%			
6		Bridge side protection standards met.	New Technical Road Standards issued by Dec 2018. Baseline compliance in FY 2019/2020 and set goals for future years			
7		Clear zones and roadside protection standards met.				
8		Median barrier standards met.				
9		Bridge width standards met.				

Target Reference	Area	Level of Service				
		Performance Measure	Performance Target			
			FY 2018	FY2019	FY 2020	FY 2021
10		Overhead bridge standards met.				
11		Rail crossing standards met.				
12		Lighting standards met.				
13		Traffic incidents assistance efficiently managed.				
14		Signage standards met.				
15	Risk	An organisation-wide, consistent process for identifying and managing potential risks and the process is operating satisfactorily – all risks have an 'up-to-date' mitigation plan that has been/is being implemented.	Yes			
16		A quality business continuity / operations recovery plan.	To be developed in FY 2018 and then implemented			
17		A clear climate change management strategy and the climate change risks and vulnerabilities and the FRA's strategy for managing them have been documented and implemented and are being fully adhered to.	To be developed in FY 2018 and then implemented			
18	Maintenance	The % of planned lane kilometer renewals and capital works achieved	80%	85%	90%	90%
19		An annual reduction in the number of pothole repairs completed.	5% Reduction year on year			

Target Reference	Area	Level of Service				
		Performance Measure	Performance Target			
			FY 2018	FY2019	FY 2020	FY 2021
20		The percentage of planned maintenance work completed as agreed at the start of the financial year	85%			
21		Annual planned work to mitigate flood/ /costal failures completed as identified in budget at the start of the financial year	100%			
22		Not less than _ _ _ kms of sealed roads resealed annually subject to budget allocation	100KM	190Km	190Km	190Km
23		Not less than _ _km of sealed roads rehabilitated annually subject to budget allocation	35Km	95Km	95Km	95Km
24		Not less than _ _kms of unsealed roads reconstructed annually subject to budget allocation	150Km	200Km	250Km	300Km
25		Not less than _ _kms of roads in village/settlement/civic amenities areas rehabilitated annually subject to budget funding	1.5Km	30Km	50Km	80Km
26		Bridges' condition improved: subject to budget funding	Baseline in FY2018	20	40	60
27		Jetties condition improved subject to funding	6	10	15	16

Target Reference	Area	Level of Service				
		Performance Measure	Performance Target			
			FY 2018	FY2019	FY 2020	FY 2021
28		All roads classified with an established standard for each classification that is being adhered to.	Set new standards and baseline	100%	100%	100%
29		Road alignment and camber standards met.	New Technical Road Standards issued by Dec 2018 Future targets to be set in FY2018 All new capital works to meet standards			
30		Overtaking opportunities standards met.				
31		Traffic management (signals, etc.) standards met. No repeat traffic signals lanterns' malfunctioning.				
32		Traffic controls (speed limits, etc.) standards met.				
33		Pavement width standards met.				
34		Signage standards met.				
35		Delineation standards met.				
36		Drainage standards met.				
37		Rest areas standards met.				
38		Car Parking standards met.				

Target Reference	Area	Level of Service				
		Performance Measure	Performance Target			
			FY 2018	FY2019	FY 2020	FY 2021
39		Footpaths, Walking and Cycling standards met.				
40	Environmental	All conditions of all Environmental Assessments and of all discharge permits were met throughout the year.	100%	100%	100%	100%
41		The FRA has approved environmental assessments and drainage permits for all situations where these are required.	100%	100%	100%	100%
42		cultural or heritage issues have been, or are being, addressed.	100%	100%	100%	100%
43	Service Quality	Reduced congestion by route	TBD with availability of additional traffic data			
44		Not less than _ _% of the stakeholders surveyed (periodically) rate the overall service as 'satisfactory' or 'very satisfactory'.	Establish Survey	50%	60%	80%
45		< % of the network has rutting >20mm	Establish baseline in FY 2018 and then set targets			
46		> % of the network meets the roughness standards.	Establish baseline in FY 2018 and then set targets			
47		The percentage of service calls resolved within the prescribed times.	Backlog Cleared and 75% of new issues cleared	80%	85%	90%

Target Reference	Area	Level of Service				
		Performance Measure	Performance Target			
			FY 2018	FY2019	FY 2020	FY 2021
48		The percentage of subdivision & development applications processed in 20 working days.	85%	100%	100%	100%
49		Service calls are accepted 24/7	100%	100%	100%	100%
50		The percentage of complaint letters responded to within 20 working days.	100%	100%	100%	100%
51		A quality asset management plan that is annually reviewed	Yes			
52	Compliance	Compliance with all legislative, regulatory and other requirements.	100%	100%	100%	100%
53		Accurate and complete land records.	Establish baseline in FY2018 - 50% complete	75%	85%	90%
54		Accurate and complete asset location, capacity, material type, age and remaining life records.	Future projects to be 100% captured			
55		Critical Assets identified & managed – an 'up-to- date' management plan for each critical asset (or group of assets) that has been/is being implemented.	Establish baseline in FY 2018 and then set targets			

Target Reference	Area	Level of Service				
		Performance Measure	Performance Target			
			FY 2018	FY2019	FY 2020	FY 2021
56	Financial	Total operating costs were within the approved total budget.	Yes			
57		New capital and renewal projects were completed within the approved total budget.	Yes			
58		The depreciated replacement (current) value of the network is a progressively greater proportion of their replacement value.	Yes			
59		An unqualified annual audit opinion.	Yes			
60		No matters raised by Audit as not having been attended to from the previous year.	None			
61		All expenditure was consistent with the Asset Management Plan subject to budgetary allocations	Yes			
62		An accurate, current, fair valuation of the assets.	Later - when asset condition and remaining life better understood			
63		An accurate, current, fair valuation of the assets.	Later - when asset condition and remaining life better understood			

SECTION 1.9 – PERFORMANCE TRENDS

Actual results against the performance targets are monitored and reported throughout the year.

This AMP is updated at least annually to record the key performance trends here. Whenever the performance is not as required 'an issue' is identified in the appropriate section in this AMP and the corrective action monitored through the Improvement Plan in Section 5.

When reporting actual performance results against performance targets it is important that not too much weight be given to any result in isolation. The only thing that really matters is the performance TREND – 'Is the performance getting better or worse and if worse 'why''? Of course it is going to take some time to identify the trends but as soon as practicable the key ones will be graphically illustrated, and kept up-to-date here.

Table 1.8.1 – Example Performance Results Table

Code	Service Area	Performance Target	Rpt g	Conf. Level	Result Prev.	Current	Trend
6		• Bridge side protection standards met.	SA	B3			↔
7		• Clear zones and roadside protection standards.	SA	B4			↑
8		• Median barrier standards met.	SA	B2			↔
9		• Bridge width standards met.	SA	B4			↔
10		• Overhead bridge standards met.	SA	-			↔
11		• Rail crossing standards met.	SA	-			↔
12		• Lighting standards met.	SA	B4			↔

Table 1.8.2 Confidence Grading's

	COMPLETENESS		ACCURACY	
'A'	Highly Reliable	95-100%	**1**	**+/- 1%**
'B'	Reliable	80-95%	**2**	**+/- 5%**
'C'	Unreliable	50-80%	**3**	**+/- 10%**
'D'	Highly Unreliable	Less than 50%	**4**	**+/- 25%**
'E'	Don't Know	The entity is unsure about the completeness of the information	**5**	**+/- 50%**
'F'	Non-Existent	The entity doesn't have any documented evidence to support its actions or conclusions	**6**	**+/- 100%**

2.0 ASSETS

SECTION 2.1 – ASSET DETAILS & DATA CONFIDENCE

INTRODUCTION

The infrastructure assets are listed in Table 2.1.1. Table 2.1.2 identifies how confident the FRA is in the quality of the asset information.

TABLE 2.1.1 SUMMARY OF ASSETS 'OWNED' ROADS

33wa	Ownership	Surfacing (km)			
		Concrete	Sealed	Unsealed	Grand Total
Central	Fiji Roads Authority	12	647	1079	1738
	Other Government Services	0.3	10.3	11	21.6
	Ministry of Provincial Development	0.3	0.1	30	30.4
	Private	0.7	4.2	64	68.9
	Unknown	-	0.3	19	19.3
Central		***13.***	***661.7***	***1203***	***1878***
Eastern	Fiji Roads Authority	7.5	13	479	499.5
	Other Government Services	0.1	-	2	2.1
	Ministry of Provincial Development	3.4	-	41	44.4
Eastern		***11***	***13***	***522***	***546***
Northern	Fiji Roads Authority	3.2	379.8	1667	2050
	Fiji Sugar Corporation	-	1.6	8	9.6
	Other Government Services	0.1	-	5	5.1
	Ministry of Provincial Development	-	-	18	18
	Private	0.2	-	6	6.2
	Unknown	-	-	6	6
Northern		***3.5***	***381.4***	***1710***	***2094.9***
Western	Fiji Pine Limited	-	-	41	41
	Fiji Roads Authority	9	687.8	1866	2562.8
	Fiji Sugar Corporation	-	1.2	382	383.2
	Other Government Services	-	12.3	4	16.3
	Ministry of Provincial Development	-	-	5	5
	Private	-	8.2	52	60.2
	Unknown	-	1	38	39
Western		***9***	***710.5***	***2388***	***3107.5***
TOTAL KM		**36.**	**1766.6**	**5823**	**7626.4**

Bridges

Division	Bridges Structure Type				
	Bridge	Crossing	Culvert	Footbridge	
Central	187	103	65	10	**365**
Eastern	32	41	29	2	**104**
Northern	186	197	42	1	**426**
Western	203	228	55	1	**487**
TOTAL	**608**	**569**	**191**	**14**	**1382**

Jetties

Division	Fiji Roads Authority	Private	TOTAL JETTIES
Central	8	1	**9**
Eastern	14	3	**17**
Northern	11	3	**14**
Western	3	1	**4**
TOTAL JETTIES	**36**	**8**	**44**

- See the explanations in paragraph (3) in this section – 'Other Roads' and in paragraph (4) – 'Jetties'.

DATA CONFIDENCE

"Asset management starts with identifying and quantifying the assets and gathering information about their age & condition."

Source: New Zealand Office of the Controller and Auditor General (OAG) – "Managing Public Assets" – June 2013.

During FY 2018, FRA intends to initiate a programme of work to assess the road condition and get improved data confidence. This is planned to be achieved by procuring surface roughness measurement equipment that is fitted to one or several FRA vehicles. All roads (sealed and unsealed) will be surveyed to provide an assessment of roughness as well as an assessment of the average surface quality and video record.

This information will enable FRA to fill the current gaps in asset condition and bring improvements to the data confidence as shown in the table below.

TABLE 2.1.2 DATA CONFIDENCE

	Highly Reliable	Reliable	Less Reliable		Uncertain	Very Uncertain	Non-Existent
National Roads							
Location	X						
Material Type		X					
Condition					X		
Performance					X		
Criticality					X		
Capacity			X				
Age		X					
Remaining Life					X		
Replacement Value					X		
Depreciated Replacement Value					X		
Municipal Roads							
Location	X						
Material Type		X					
Condition					X		
Performance					X		
Criticality					X		
Capacity			X				
Age		X					
Remaining Life					X		
Replacement Value					X		
Depreciated Replacement Value					X		
Other Roads							
Location		X					
Material Type			X				

Condition					X		
Performance					X		
Criticality					X		
Capacity					X		
Age						X	
Remaining Life						X	
Replacement Value						X	
Depreciated Replacement Value						X	
Jetties and Bridges							
Location		X					
Material Type			X				
Condition			X				
Performance			X				
Criticality		X					

Key:

Highly Reliable	'A'	Very high level of confidence. Data is believed to be 95-100% complete and +/- 5% accurate;
Reliable	'B'	Good level of confidence. Data is believed to be 80-95% complete and +/- 10% to 15% accurate. Some **minor** data extrapolation or assumptions has been applied;
Less Reliable	'C'	Average level of confidence. Data is believed to be 50-80% complete and +/- 15% to 20% accurate. Some data extrapolation has been applied based on supported assumptions;
Uncertain	'D'	Not sure of confidence, or data confidence is good for some data, but most of dataset is based on extrapolation of incomplete data;
Very Uncertain	'E'	Very low confidence. Data based on very large unsupported assumptions, cursory inspection and analysis. Data may have been developed by extrapolation from small, unverified datasets;
Non-Existent	'F'	Non-existent.

Table 2.1.3 – Jetties Owned & Managed by the FRA

No.	Jetty ID	Jetty Name	Location	Division	Islands
1	2165 J	Navua River Boat Landing	Navua Town	Central	Viti Levu
2	2164 J	Naitonitoni Jetty	Naitonitoni Road	Central	Viti Levu
3	2232 J	Nakelo Landing	Nakelo Road	Central	Viti Levu
4	2233 J	Bau Landing	Ratu Kadavulevu Road	Central	Viti Levu
5	2236 J	Nasali Landing	Nasali Road	Central	Viti Levu
6	2956 J	Stinson Jetty	Stinson Parade	Central	Viti Levu
7	2234 J	Lokia Landing	Tawakelevu Road	Central	Viti Levu
8	2342 J	Natovi Jetty	Natovi 1	Central	Viti Levu
9	3070 J	Qarani Jetty	Qarani	Eastern	Gau
10	1671 J	Makogai Jetty	Dalice Bay	Eastern	Makogai
11	2675 J	Lomaloma Jetty	Lomaloma	Eastern	Vanuabalavu
12	2950 J	Lakeba Jetty	Tubou	Eastern	Lakeba
13	3040 J	Moala Jetty	Vunuku Road	Eastern	Moala
14	3041 J	Totoya Jetty	Totoya Island	Eastern	Totoya
15	3042 J	Matuku Jetty	Matuku	Eastern	Matuku
16	3010 J	Cicia Jetty	Tarakua Bay	Eastern	Cicia
17	2695 J	Koro Jetty	Koro Island Jetty Road	Eastern	Koro
18	2686 J	Vunisea Jetty 1	Vunisea	Eastern	Kadavu
19	2688 J	Kavala Jetty	Naleca	Eastern	Kadavu
20	3110 J	Oinafa Jetty	Oinafa Jetty Road	Eastern	Rotuma
21	3071 J	Nawaikama Jetty	Nawaikama Jetty Road	Eastern	Gau
22	2687 J	Vunisea Jetty 2	Vunisea Jetty Road	Eastern	Kadavu
23	142 J	Tavuki Jetty	Waiyevo	Northern	Taveuni
24	284 J	Salia Jetty	Salia	Northern	Kioa
25	296 J	Rabi Old Jetty	Tabwewa	Northern	Rabi Island
26	952 J	Nabouwalu Jetty	Bua	Northern	Vanua Levu
27	639 J	Labasa Qawa River	Labasa Town	Northern	Vanua Levu
28	280 J	Savusavu Jetty	Savusavu Town	Northern	Vanua Levu
29	283 J	Rabi Jetty	Tongoriki	Northern	Rabi Island
30	328 J	Saqani Jetty	Saqani	Northern	Vanua Levu
31	143 J	Black Point Jetty	Bucalevu	Northern	Taveuni
32	339 J	Qaranivai	UN6846L Nukusere Lagi Road	Northern	Vanua Levu
33	640 J	Labasa Town Landing	Damanu Street	Northern	Vanua Levu
34	1152 J	Ellington Jetty	Ellington Road	Western	Viti Levu
35	1473 J	Nabukeru Jetty	Nabukeru	Western	Yasawa
36	1447 J	Yasawa-i-Rara Jetty	Yasawa	Western	Yasawa

Table 2.1.3(b) – Jetties NOT Owned or Managed by the FRA

No	Jetty ID	Jetty Name	Location	Division	Islands
1.	2957 J	Marine Jetty	Mua-i-Walu	Central	Viti Levu
2.	2670 J	Buresala Jetty	Ovalau (Patterson Shipping)	Eastern	Ovalau
3.		Dravuni Jetty	Dravuni Village	Eastern	Kadavu
4.	2669 J	Levuka Jetty	Levuka Town	Eastern	Ovalau
5.		Fisheries Lekutu Bua	Nakadrudru	Northern	Vanua Levu
6.	281 J	Fisheries Jetty	Yaroi (Savusavu)	Northern	Vanua Levu
7	282 J	Natuvu Boat Landing	Buca Bay	Northern	Vanua Levu
8.	1446 J	Kings Jetty Lautoka	Lautoka City	Western	Viti Levu

SECTION 2.2 – EMERGENCY MANAGEMENT, BUSINESS CONTINUITY & CRITICAL ASSETS

1. THE FRA'S EMERGENCY MANAGEMENT AND CRITICAL ASSETS POLICY APPROACH

The FRA maintains an Emergency Procedure Manual and list of **critical assets that are defined in the Asset Management System.**

At every update of this AMP those documents are reviewed by persons other than those who have the responsibility for preparing and maintaining them, against the criteria. The relevant document is also reviewed following any natural hazard or other event. For further details, refer the FRA Emergency Procedure Manual.

The current list of critical bridge infrastructure is listed below:

- Tamavua-i-wai Bridge
- Waidamu (Vuci South Roads) Bridge
- Gatward (Deepwater road Tailevu) Bridge
- Waidalice Bridge
- Natogadravu Bridge.
- Vesidrua Bridge
- Korovula Bridge
- Korovuli Bridge
- Nakasava Bridge
- Laqere Bridge
- Naiyalayala Bridge
- Somosomo Bridge
- Bua Lomanikoro Bridge
- Bulu Bridge (Queens road)
- Korovou Bridge (Kings road)
- Tavualevu Bridge (Kings road)
- Maururu Bridge (Maururu road)
- Velovelo Bridge (Queens road)
- Vutuna Bridge (Kings road)
- Matewale Bridge (Sigatoka valley road)

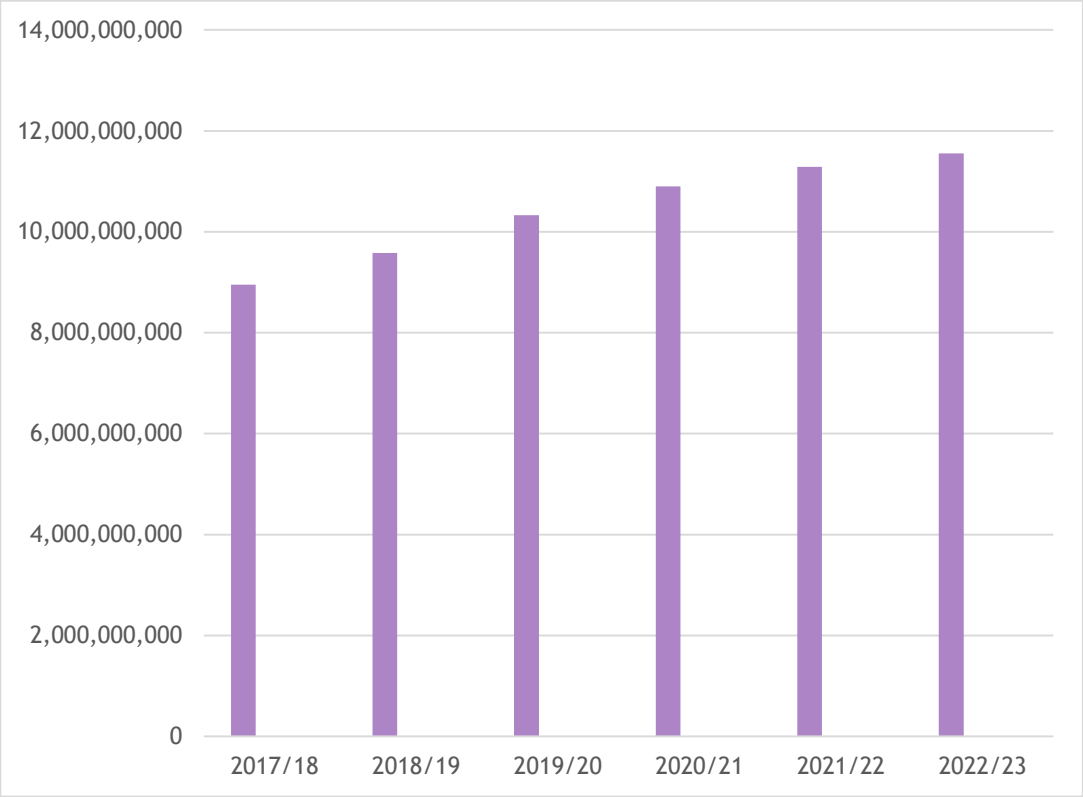
SECTION 2.3 – ASSET VALUES

Tables 2.3.1 and 2.3.2 summarise the assets as valued by FRA. Because of the lack of reliable data this valuation has had to be based on assumptions. The database is to be developed and significantly improved over the next few years and the assets will be valued again (based on condition measurements) in FY 2018/19 (subject to funding).

Table 2.3.1A – Asset Values – Replacement Cost ($000)

Asset Categories	2017/18 $0	2018/19 $0	2019/20 $0	2020/21 $0	2021/22 $0	2022/23 $0
Land	3,166,152,899					
Formation	3,258,685,552					
Carriageways	2,072,973,654					
Drainage	139,308,658					
Footpaths	21,611,213					
Traffic Control	5,425,030					
Bridges	254,510,546					
Minor Structures	27,529,813					
Street Lighting	6,922,749					
Total	8,953,120,114	9,582,676,224	10,328,680,824	10,897,512,542	11,284,951,064	11,556,335,942

Figure 2.3.1B – Asset Values – Replacement Cost Forecast Illustrated ($000)



3.0 FINANCIAL MANAGEMENT

SECTION 3.1 – MAINTENANCE (INCLUDING FLOOD DAMAGE) STRATEGY AND COST FORECAST

1. INTRODUCTION

'Maintenance' is

"The actions required to enable an asset to achieve its expected life – recurrent work necessary to preserve or maintain an asset so it can be used for its designated purpose. In other words, recurrent work necessary to prevent deterioration.

Maintenance work can be planned or unplanned. Planned maintenance is measures to prevent known failure modes and can be time or condition-based. It includes all of the actions necessary for retaining an asset as near as practicable to its original condition, but excludes Renewals.

Repairs are a form of unplanned maintenance to restore an asset to its previous condition after failure or damage.

Examples**:** *Pothole repairs. Replacing a broken deck on a bridge. Applying protective paint. Removing vegetation to improve driver vision. Reinstating road markings. Cleaning and clearing roadside drains and unblocking culverts. Cleaning and repairing road signs."*

2. MAINTENANCE STRATEGY

The FRA's strategic approach for maintaining the assets is:

2.1. ROADS

2.1.1. MAINTENANCE EXPENDITURE AND REHABILITATION EXPENDITURE INTERLINKED

The level of funding required for maintenance each year is affected by the level of funding for rehabilitation. If the rehabilitation budget is low or decreases more money is required for maintenance.

2.1.2. EXPENDITURE PRIORITIES

The maintenance priorities are:

- Repair all potholes on main roads within a week of them developing.
- Repair 'safety related' defects (large shoves, low shoulders etc.) on the sealed road network;
- Identify and promptly repair sections of unsealed roads buses have difficulty using;
- Keep culverts and drainage channels clear;
- Improve the maintenance of grass verges;
- Ensure road markings are clearly visible at all times;
- Complete pre-seal repairs to those sections of the roads that have been identified for reseal;
- Incident response:
  - Respond promptly to justified complaints;
  - Clear slips where possible and implement safe solutions to reopen carriageway to traffic;
  - Attend to flooding problems; (and)
  - Keep unsealed roads open in wet weather etc.

Notwithstanding this planned, prioritized, maintenance management approach the amount of reactive (or unplanned) work that will be necessary will remain high, particularly on the unsealed roads, until the overall network condition improves. The unsealed roads have many deficient sections that become worse during wet weather. This requires a high level of expenditure on "reactive maintenance" to keep them open to traffic, in particular school buses, often with no noticeable improvement in road condition overall.

2.2. BRIDGES

2.2.1. BRIDGE MAINTENANCE STRATEGY SUMMARISED

The bridge stock has many deficiencies. This requires a priority system of maintenance. For many of the structures "immediate" action is required before full maintenance at all locations can be carried out. Some bridges will continue to deteriorate until their structural backlog and durability issues can be addressed.

Priorities for bridge maintenance will focus on:

- Temporary repairs to all high priority bridges;
- Repairing "safety related" defects (guardrails, handrails, kerbing, signage);
- Identifying and repairing bridges and crossings that buses have difficulty using; (and)
- Improving bridge approaches, waterways and deck surfaces;

Reactive maintenance will remain high, particularly on remote bridges, until the overall condition of the bridges improves.

2.3. JETTIES

2.3.1. JETTIES MAINTENANCE STRATEGY SUMMARISED

A future detailed maintenance strategy for the jetties will be developed over the next financial year with those jetties requiring immediate action being prioritized for repair in FY 18/19.

A full breakdown of maintenance related costs can be found in the FRA 5-year Strategic Plan and annual costed operational plan.

SECTION 3.2 – RENEWALS STRATEGY AND EXPENDITURE FORECAST

1. INTRODUCTION

'**Renewals**' is:

"The replacement or rehabilitation of an asset.

It is expenditure on an existing asset which returns the service potential or the life of the asset to that which it had originally. It is periodically required expenditure*, and relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed.*

Renewals may reduce operating and maintenance expenditure if completed at the optimum time.

Example: Resealing or rehabilitating a (sealed or unsealed) road – or replacing an existing bridge."

It is very important that the FRA always clearly distinguishes between New Capital expenditure and Renewals Capital expenditure.

The rate at which renewal work is being carried out over time compared with the annual provision for depreciation (the cost of consumption) is a good indicator of the extent to which the network is being maintained, improving, or is deteriorating

2. RENEWALS STRATEGY

The FRA's strategic approach for renewing and replacing the assets is:

2.1. ROADS

2.1.1. THE RENEWALS STRATEGY SUMMARISED

A backlog of rehabilitation, reseals and re-sheeting exists. While this backlog is there, the roads will continue to deteriorate. The strategy that is described here has been developed to maximize the treatment of as much road as possible, to a reasonable standard, at the least possible cost. This means a focus on patching and resealing complemented by rehabilitation of not less than 3 to 4% of the sealed network annually.

The two principle factors that have influenced this 'patching and reseals' rather than entirely 'rehabilitation' approach include:

- Except in extreme cases, over a 10 or 20-year period it will usually be cheaper to repair a road and reseal, rather than to rehabilitate it;
- Given the almost total lack of resealing in the 10-year period preceding constitution of the FRA, virtually the entire sealed network needs resealing or rehabilitation now. Of course that's not possible and the **first priority at this time must be to treat the maximum length of road possible, TO PREVENT FURTHER DETERIORATION.**

An approach along these lines comes however at a cost in terms of 'levels of service'. When roads in poor condition are repaired and resealed rather than properly rehabilitated, road users may experience:

- rougher road;
- repeated pavement faults and subsequent safety risks; (and)
- more disruption to road users through constant repair work having to be done.

A 'repair and reseal' rather than 'rehabilitate' approach also doesn't enable required geometric or width improvements to be addressed when carrying out the work and may have public perception consequences.

2.1.2. RESEALS PRIORITIES

Potential reseals sites will be categorized as:

- sites that are to be done at the optimum time, before failuresdevelop;
- sites with minor repairs now that if left will require more expensive repairs later; (and)
- sites that have been left too long but can be "rescued"

Table 3.2.1 explains the situation.

Table 3.2.1 - Reseal Site Categories

Category	Descriptions	Risks/Expectations
1. Optimum	These sites have no obvious faults, but if left risk developing faults. Second Coat seals on new capital projects/rehabilitation sites (funded under the New Capital Works heading) fall into this category	If resealed now, no pavement failures should occur in the next 10 years
2. Just in Time	These sites have minor repairs, typically a few potholes and isolated structural repairs only. If left, further potholes will develop requiring constant attention.	If resealed now, 90% of these sites will have no recurring failures in the next 5 years. 10% of the sites can be expected to have some minor faults
3. Retrievable	These sites have more extensive faults, (typically recurring potholes but also some structural pavement repairs), and can be rough in places. Short lengths of full width repairs (up to 300m long) may be required. If left untreated, significant potholes will recur. The road will have safety deficiencies due to potholes or other pavement failures.	Because resealing these sites has been left beyond the optimum time, significant pavement repairs will be required. But these repairs followed by a reseal will rectify these sites and expect to get 5 - 10 years of good service. It is likely that some recurring failures will occur in subsequent years after reseal. Higher roughness can be expected

There will be a balance of Cat 1, Cat 2, and Cat 3 sites each year. This will vary between the three Divisions, and its total will be roughly as follows:

- Category 1 – 20%;
- Category 2 – 30%; (and)
- Category 3 – 50%.

The reseal programme will especially target areas where there are significant pothole problems in order to reduce the annual cost of pothole repairs.

2.1.3. REHABILITATION PRIORITIES – SEALED ROADS

Not less than 35Km will be rehabilitated in FY 2018. Potential rehabilitation projects will be sites that:

- have a low level of service due to roughness of the road;
- have reached the end of their effective life;
- will require extensive, on-going pavement repairs if not treated;(and)
- which could be considered unsafe due to their condition.

Other factors that will be considered are:

- the on-going cost of maintenance if the rehabilitation work isn't done;
- the urban/rural split (and)
- the existing road roughness;

The amount of rehabilitation work that can be carried out in municipal council areas each year is uncertain. The urban areas have been neglected even more significantly than the rural areas and the rehabilitation needs of them are significantly higher by percentage of length.

2.1.4. REHABILITATION – UN-SEALED ROADS

- Maintenance of these roads is currently entirely reactive, - just to keep them passable during wet weather. Little to no improvement to their condition is achieved by this approach. In order to address this issue, over 900km of un-sealed roads will be rehabilitated or have extensive re-sheeting and drainage improvements over the next 5 years.

- Re-sheeting is used to replace existing road aggregate lost through climatic conditions. A backlog exists, but it is difficult to quantify exactly how big it is. Re-sheeting will continue to be used to improve road condition, targeting the high priority routes first.

2.2. BRIDGES

2.2.1. BRIDGE RENEWALS STRATEGY SUMMARISED

- Every bridge will be given a Renewals Priority Rating. There will be three categories, Critical, High and Low.

- Matters to be considered when establishing the categories (and the priorities within each category) will include (but will not be limited to):
  - the availability of alternative routes;
  - the impact the bridge has on public transport (bus) routes; and
  - the relative cost benefit ratio of the required work.

- All renewal and replacement work will be designed based on the New Zealand Transport Agency's 'Bridge Manual' – **http://www.nzta.govt.nz/resources/bridge-manual/**

A problem with this strategy (or for that matter any strategy) is however the very large volume of renewals work that needs doing and its affordability. 20 bridges listed in the 'Critical' category currently need urgent, significant work. These are detailed in Section 2.2.

2.2.2. PROPOSED PROGRAMME:

Subject to funding, contracts to replace all 20 critical bridges will be awarded in FY 2018/2019.

2.3. JETTIES

2.3.1. JETTIES RENEWALS STRATEGY SUMMARISED

A future renewals strategy for the jetties will be developed during FY 18/19 with those jetties requiring immediate action being prioritized for repair in FY 18/19.

3. FINANCIAL FORECAST

A full breakdown of renewals related costs can be found in the FRA 5-year Strategic Plan and annual costed operational plan.

SECTION 3.3 – NEW CAPITAL (ASSET CREATION, ACQUISITION AND ENHANCEMENT) STRATEGY AND EXPENDITURE FORECAST

1. INTRODUCTION

'New Capital' is:

'Expenditure that is used to create new assets, or to increase the capacity of existing assets beyond their original design capacity or service potential'

Examples: A new bridge. The work done to realign, widen and seal an existing unsealed road. Work to replace an existing bridge or restore a road to their previous design standard is not a new capital work. It falls under the heading of 'Renewals'

2. NEW CAPITAL STRATEGY

2.1. ROADS

2.1.1. SAFETY IMPROVEMENTS

- Provide improved traffic services generally - including signs, delineation and road-marking
- Target crash reduction with black spots' elimination initiatives
- Carry out traffic management studies in urban areas to identify the real road safety issues and the best way of addressing them.

2.1.2. ACCESS IMPROVEMENTS

- Rural road upgrades and construction to facilitate economic development.
- Facilitate interisland trade and communication by providing jetties that are resilient to coastal and weather action and appropriate for the local requirements.
- Support children's health, education and welfare by ensuring rural service licensed vehicles (RSL's) are able to use all relevant roads between villages and schools at all times except in extraordinarily bad weather conditions.

2.1.3. VILLAGE AMENITY IMPROVEMENTS

- A 3-5-year program to seal the roads through all villages and settlement areas.

2.1.4. CONGESTION AND CAPACITY IMPROVEMENTS

- Targeted capital improvements in the Greater Suva area to ensure major community developments that are proposed or already underway have adequate access.
- The construction of future by-passes at selected conurbations
- Road improvements to reduce the travel time and Improving the reliability of travel between Suva and Nadi/ Lautoka – including the possibility of the provision of improved passing opportunities, curve easing and widening, surface improvement, skid resistance, signs and delineation, and potentially four lanes between Nadi and Lautoka.

2.1.5. TOURISM AMENITY AND ACCESS IMPROVEMENTS

- Access Development – new road construction or seal extensions.
- Amenity Improvements including signposting and rest area development.

2.1.6. RISK REDUCTION PROGRAMME

- Reduce risk of flood/slip/coastal failures where feasible and affordable.

2.1.7. RELIABILITY AND RESILIENCE IMPROVEMENTS

Climate Change and sea level rise is resulting in increased risk to, and damage on, the road network and jetties. Take appropriate steps to ensure any replacement or upgraded facilities can cope with the expected more frequent and higher intensity events and the higher tide levels. Ensure better and more resilient structures are built when the existing ones are replaced.

2.2. BRIDGES

Bridges include culverts with a waterway area greater than 3.4m^2. Some such structures will be installed in conjunction with the rural road upgrading programme and have been included in the budget provision for that. Culverts are currently designed to have increased capacity and flood resilience.

2.3. JETTIES

Facilitate inter-island trade and communications by providing jetties that are resilient to coastal and weather action and appropriate for the local requirements.

3. FINANCIAL FORECAST

A full breakdown of new capital related costs can be found in the FRA 5-year Strategic Plan and annual costed operational plan.

SECTION 3.4 – ASSET DECOMMISSIONING AND/OR DISPOSAL STRATEGY AND COST FORECAST

1. INTRODUCTION

Section 32 (2) (e) of the Decree requires the FRA to include in its Statement of Corporate Intent (SCI) an outline of its policies and procedures relating to the disposal of major assets.

The main FRA assets are essentially the roads, bridges, and jetties that it has to maintain – and apart from small pieces of 'stopped road that may become surplus to its requirements from time to time these can be expected to remain in its ownership in perpetuity.

2. LAND NO LONGER REQUIRED FOR ROAD

When pieces of legal road are no longer required the road designation will be uplifted and the land disposed of in such manner as the Board, with the approval of the Minister, may decide in each case. Normally this will be to offer the property at market value to the adjoining landowner subject to a condition that it to be incorporated in an existing title.

However, roads that were compulsorily acquired by the Government for road purposes and are no longer to be used by the FRA must be returned to Government to be disposed back to the native land owners.

3. REPLACED INFRASTRUCTURE ASSETS

When FRA replaces a bridge or jetty, whenever possible FRA will include the demolition of the replaced asset as part of the replacement contract.

SECTION 3.5 – MANAGEMENT COST FORECAST

1. MANAGEMENT APPROACH

The FRA's approach to management of its business is explained in Sections 4.3 (General Management) and 4.10 (Potential Alternative Service Delivery Options).

2. FINANCIAL FORECAST

A breakdown of management related costs can be found in the FRA 5-year Strategic Plan and annual costed operational plan.

SECTION 3.6 - DEPRECIATION (LOSS OF SERVICE POTENTIAL)

1. DEPRECIATION DEFINED

'Depreciation' is *'The extent to which the FRA's assets decrease in value each year - due to their use, age, obsolescence through technological and market changes, change in use, or neglect'*

2. DEPRECIATION POLICY

Depreciation is calculated on a straight-line basis on property, plant and equipment other than land, at rates that will write off the cost (or valuation) of the assets to their estimated residual values over their useful lives. Land is not depreciated.

The useful lives and associated depreciation rates of the various classes of assets have been estimated as follows:

Table 3.6.1 – Assets' Useful Lives

Asset Category	Total Useful Life (Years)
Computer Equipment	04
Office Equipment	10
Furniture & Fittings	05-10
Vehicles	05-08
Land	N/A
Formation	N/A
Carriageways	
First Coat seal and Sealed Base-course	
Rural	50
Urban	70
Sealed Surfaces (reseals)	
Asphaltic Concrete	17
Chip Seal	15
Concrete	25
Sealed Sub base	
Rural	N/A
Urban	70
Unsealed Pavement Layers	
Wearing Course	05
Sub base	N/A
Drainage	
Gully pits, culverts and surface water channels	80

Footpaths	
Sealed	30
Unsealed	40
Traffic Control	
Signs	12
Posts and Markers	20
Markings	01
Signals	
Pole	22
Controller	23
Board and lantern	12
Pedestrian Call Box	15
Street Lighting	
Pole and bracket	40
Light	20
Minor Structures	
Railings	25
Jetties	
Concrete Jetty	50
Rock seawall	80
Causeway	
Formation	N/A
Sub base	N/A
Base course	50
Wearing course	05
Chip seal	15
Bridges	
Concrete	120
Steel /concrete	110
Timber	60
Timber/concrete	100
Timber Steel	80
Bridge culverts	120
Other (quarries, plant, buildings)	
Buildings	60
Plant	30

The depreciation rates are applied at the component level and the depreciation sum is calculated on the remaining useful life of each component. Where the age or condition is unknown it is assumed the asset is half way through its useful life.

The residual value and useful life of an asset is reviewed, and adjusted if applicable, at each financial year end.

FRA plans to move to a condition based depreciation calculation where by asset condition data is taken and incorporated into the GIS asset management system. This condition data will then be used together with the age of the asset to determine the value.

3. DEPRECIATION CONFIDENCE

Because the depreciation has been calculated from values in which there is low confidence (see Section 2.3) it follows that the FRA also has low confidence in the depreciation calculations.

It is planned that more reliable depreciation figures will be available by 2019.

4. DEPRECIATION FUNDING

See the comments in Section 3.7 ('Deferred Maintenance & Deferred Renewals') regarding the desirability of funding depreciation.

5. DEPRECIATION FIGURES

The forecasted depreciation provision is in Table 3.6.2A. The forecasts in that table have been calculated as 1.5% of the forecasted replacement cost values (less land and formation) as projected in Table 2.3.1A. In FY2018/19 the forecasted depreciation of 37.9m is 1.5% of the replacement value of $2.5b (less land and formation).

Table 3.6.2A – Annual Depreciation

Asset Categories	2017/18 $0	2018/19 $0	2019/20 $0	2020/21 $0	2021/22 $0	2022/23 $0
Land	-					
Formation	-					
Carriageways	31,094,605					
Drainage	2,089,630					
Footpaths	324,168					
Traffic Control	81,375					
Bridges	3,817,658					
Minor Structures	412,947					
Street Lighting	103,841					
Total	37,924,225	47,367,567	58,557,636	67,090,111	72,901,689	76,972,462

SECTION 3.7 – BACKLOG (DEFERRED MAINTENANCE AND DEFERRED RENEWALS)

1. 'BACKLOG' DEFINED

'Backlog' (or Deferred Maintenance and Deferred Renewals) is:

"The value of maintenance and renewal work that has not been done when it should have been – in order to meet the prescribed levels of service"

If maintenance and renewal work isn't carried out at the optimum time in the asset lifecycle:

- the assets will deteriorate further;
- the repair, renewal or replacement work that will have to be done later may be more extensive than it would have been if it had been carried out at the optimum time;
- the cost of doing the work later may be more expensive (in real terms) than it would have been if the work had been carried out at the optimum time. (A delay in road maintenance of 3 to 5 years can increase the required repair costs by more than six times);
- (until it is done) the annual cost of maintaining the asset may be more expensive (perhaps significantly more expensive) than it would have been if the work had been done at the optimum time (e.g. the higher cost of repairing the road as more and more potholes appear as the road further deteriorates); and
- the asset may not be able to continue to perform to its original design capacity or performance standard, or to deliver the specified levels of service, and, if the work continues not to be done, may ultimately be unable to provide the required service altogether (e.g. the necessity to close a bridge).

2. MONITORING THE BACKLOG TRENDS

The sufficiency of the FRA's annual maintenance and renewal budget is determined by comparing the depreciation provision (the extent to which the assets are being 'consumed' or continuing to wear out every year) with the annual renewals and replacement expenditure.

If the two are 'in sync' **over time** the current state of the network is being maintained. If there is a gap the network is continuing to deteriorate (and the 'backlog' will have increased). If the renewals expenditure exceeds the depreciation provision the network is being improved.

This information is easy to track but the complication for FRA is that the starting point has to be the value of the backlog now – and until there is better quality asset data, and the state of the network is better understood, it isn't possible to say what that is.

SECTION 3.8 – PUBLIC DEBT

The FRA doesn't have any public debt.

While, as explained in Section 3.9, certain major capital improvement works are funded by loans from the Asian Development Bank (ADB) and from World Bank loan agreements are between the lenders and the Fiji Government (not the FRA) and the funding is treated by the FRA as a grant from the Government.

SECTION 3.9 – FINANCIAL CHALLENGES

The FRA has identified several financial challenges that are explained in, and managed in its Risks Register. The significant ones are listed in Table 3.11.1. Other financial risks that the FRA is managing are in Table 3.11.2.

Table 3.11.1 – Significant Financial Challenges

Challenge
Budget blowout
Insufficient money to do what is required/desired
Damage caused to roads by natural hazard events (including climate change)
Reduced annual funding
Changed political direction

Table 3.11.2 – Other Financial Risks

Challenge
Corruption
Inadequate management of contract retentions and of potential claims for cost escalation or other contract extras.
Excessive tender prices (or no tenders)
A municipal council doesn't pay a quarterly installation when due
Contractor non-performance
VAT isn't properly accounted for
A 'sensitive expenditure' issue occurs
Poor budget formulation
Poor general financial management
Loan funding problems

There is a documented mitigation strategy for each risk.

SECTION 3.10 - FINANCIAL SUMMARY

Table 3.12.1 summarizes the FRA's total forecasted expenditure requirements for the next 5 Years. The figures are updated annually and comprehensively reviewed at the end of each financial year.

Table 3.12.1A – Statement of Total Cost of Service (Excluding Depreciation)

Asset Categories	2017/18 $0	2018/19 $0	2019/20 $0	2020/21 $0	2021/22 $0	2022/23 $0
MANAGEMENT	26,227,478	27,126,999	33,286,691	39,443,703	30,075,994	20,485,142
PROFESSIONAL SERVICES	545,000	2,500,000	10,000,000	10,000,000	5,000,000	5,000,000
MAINTENANCE	80,000,000	60,000,000	159,650,000	164,150,000	159,650,000	159,650,000
RENEWALS - ROADS AND SERVICES	139,119,000	110,450,000	107,673,815	100,173,815	-	-
NEW CAPITAL	281,657,158	312,979,947	352,232,296	471,680,786	404,181,718	222,788,521
Total	527,548,636	513,056,945	662,842,801	785,448,303	598,907,712	407,923,663

4.0 SERVICE MANAGEMENT

4.1 Human Resources

4.2 Asset & Financial Management Systems

4.3 General Management

4.4 Demand Management

4.5 Environment Management & Potential Negative Effects

4.6 Properties' Management

4.7 Risk Management (including Occupational Health & Safety)

4.8 Land Development – Road Impacts

4.9 Road Safety Management

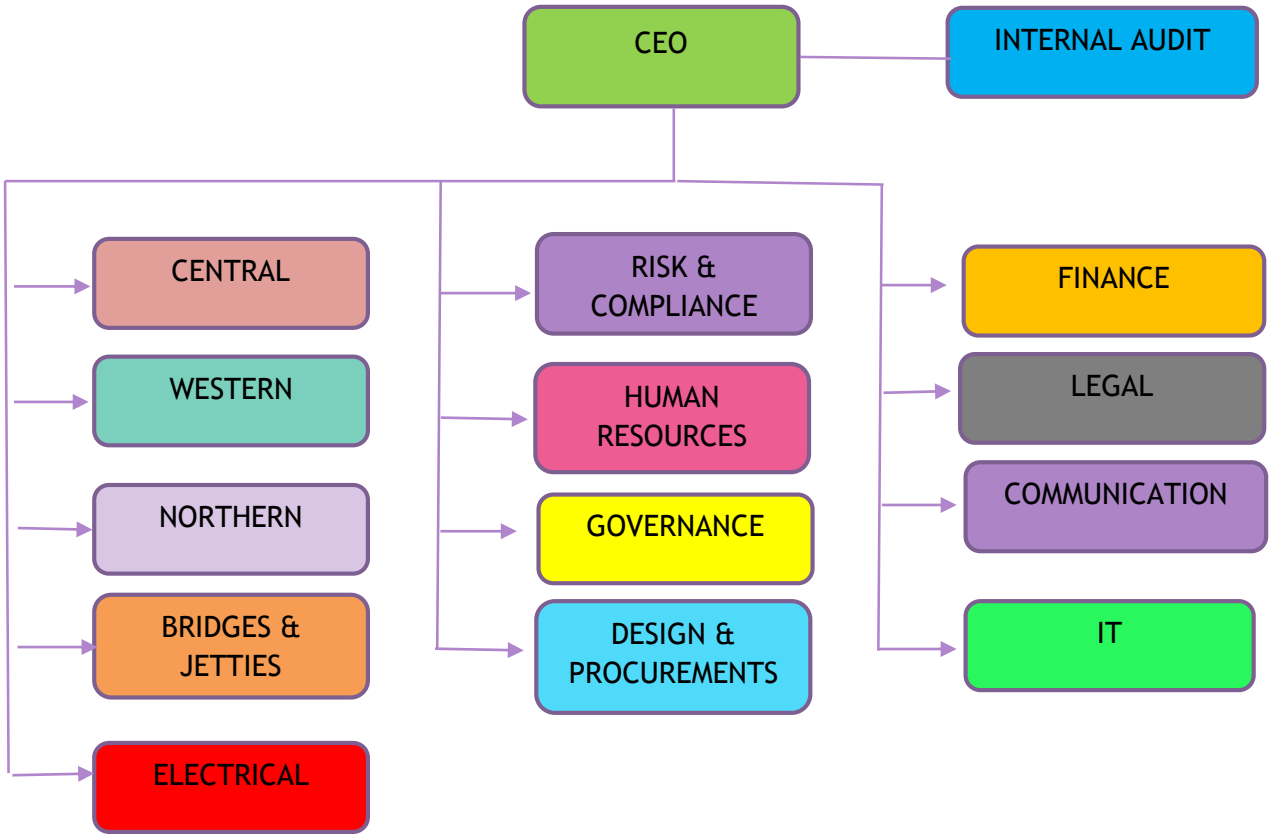
4.10 Potential Alternative Methods of Service Delivery

SECTION 4.1 – HUMAN RESOURCES

The current staff structure is as shown in Figure 4.1.1

The way in which the FRA manages its overall affairs is explained in Section 4.8 'Potential Alternative Service Delivery Options'. All employment matters (including the FRA's employment policy, its 'values' and code of conduct, a copy of each job description and the personal performance appraisal system) are explained in 'the Yellow Book' – the FRA's Staff Manual.

Figure 4.1.1 – Staff Structure



SECTION 4.2. – ASSET & FINANCIAL MANAGEMENT SYSTEMS

1. 'ASSET MANAGEMENT SYSTEM' DEFINED.

An 'Asset Management System' (AMS) is:

"A system, usually in the form of computer software, that contains an inventory of assets and links to asset history, condition and financial information. The software generates reports about the assets, including information about asset condition, to support the operational and strategic decision-making process".

2. FINANCIAL MANAGEMENT SYSTEMS DEFINED

The Financial Management Information System (FMIS) is:

"The processes and procedures the FRA uses, substantially in the form of computer software, to exercise financial control and accountability. The system includes the recording, verification and timely reporting of transactions that affect revenues, expenditures (including payroll), assets and liabilities.

3. THE FRA'S 'ASSET MANAGEMENT' SYSTEM

The FRA uses GIS based systems to manage the infrastructure assets. This includes the RAMM system to manage maintenance and renewals. It is planned that this system will be expanded to also include corridor access requests and capture the capital works programmes.

4. THE FRA'S 'FINANCIAL MANAGEMENT SYSTEM'

4.1 Background

The FRA has implemented Microsoft Dynamics NAV 2009 (NAV) as its Financial Management Systems. NAV was procured from UXC Eclipse (Australasia) Fiji Ltd, an Australian company based in Suva, Fiji in late 2012.

4.2 About NAV

NAV is a one of the leading Enterprise Resource Planning (ERP) business management solutions and a product of Microsoft. It is easily integrated and will be compatible with new releases of Microsoft Products such as Microsoft Operating Software, MS Outlook and Exchange, MS Office etc.
FRA has opted for NAV's new release of Role Tailored Centre (RTC) user experience instead of the Classic model. The new RTC model offers a single interface where users can link the different Microsoft applications within a single dashboard type screen that enables them to carry out their tasks without having to log into multiple MS products. It promotes the actions and information that users need, leaving them with an uncluttered window and an overview of upcoming tasks – helping prioritize their tasks and keeping productive.

Further details can be found on FRA operations manual under *"Attachment I Financial Management System*

SECTION 4.3 – GENERAL MANAGEMENT

1. INTRODUCTION

'Asset Management' is not just an engineering function but:

"an integrated process that needs to be carried out in a co-ordinated way – a multi-disciplinary process that involves engineering, financial and corporate planners and policy writers who, it is essential, work together and respect each other's' contribution".

Source: Audit New Zealand 2010

Recognizing the importance of this the FRA manages its entire business in the thoroughly integrated way illustrated in Table 4.3.1 – with the aim of being able to achieve the objectives listed in Table 4.3.2.

Table 4.3.1 – Integrated Management – The Key to Overall Business Success

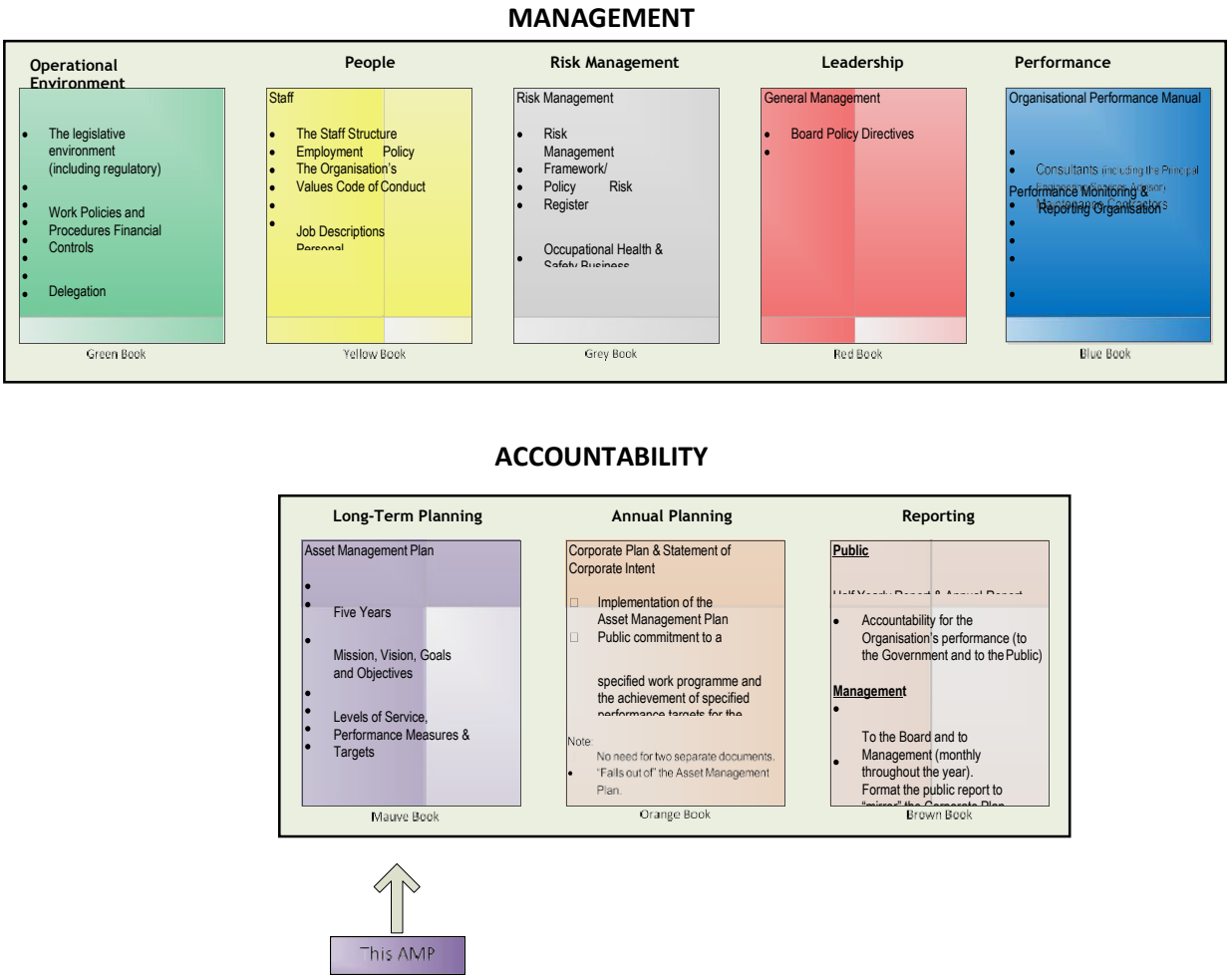


Table 4.3.2 – FRA Business Management Objectives

The FRA aims to be an organisation:

- that is totally 'outcomes driven' and where the culture focuses on interdependent co-ordination and information sharing;
- where everyone knows and understands what the organization's mission, vision, goals, objectives (strategic direction) and performance targets are;
- that has clear levels of service for everything that it does;
- that makes all of its decisions taking into account their likely mission, economic, environmental, and social impacts for the long-term (sustainable development);
- that plans on the basis of a portfolio and life-cycle approach for the long-term, and knows clearly what its priorities in that regard are;
- that has a good and thoroughly integrated system of management - including data management;
- that continuously monitors and transparently reports results, at all levels, in a coordinated and consistent way, and acts quickly throughout the year when the results are not as they should be; and
- that in all areas holds people 'to account'.

2. THE PURPOSE OF THIS SECTION

The principal purpose of this section is to list any areas for business improvement that haven't been identified elsewhere (in either this asset management plan or in any of the other manuals) – especially relating to:

- technical data management;
- financial management and work processes; and
- relationships' management

3. BUILDING LOCAL CAPACITY

Achievement of the FRA's goal:

"To develop capacity and capability at all levels of the Roading industry such that Fijians are ultimately able to be appointed to any role within the FRA, Principal Engineering Services Provider or Maintenance Contractor organisations"

SECTION 4.4 – DEMAND MANAGEMENT

1. 'DEMAND MANAGEMENT' DEFINED

(Not to be confused with 'Future Demand') 'Demand Management' is:

'Action that may be able to be taken to reduce the demand for new or better roads and jetties, in order to avoid or delay maintenance and capital expenditure that will otherwise be incurred.'

Demand Management' does not however include the deferral of necessary maintenance, renewal or replacement work beyond the most optimum time at which the work should be done. It is all about getting more from the current infrastructure – looking at how the roads are used now, identifying opportunities for their improved management and finding better ways of ensuring users' expectations really are understood - and considering how they can be more efficiently and effectively accommodated.

2. THE FRA'S DEMAND MANAGEMENTAPPROACH

Demand management initiatives the FRA intends to consider include those listed in Table 4.6.1.

Table 4.4.1 – Demand Management

Co-ordinate with the LTA to ensure effective 'over width, height and length limit controls and the weighing of vehicles to reduce damage to the roads by overweight vehicles.

•Ensure sub-dividers and developers pay a fair share of the impacts on the road network that their subdivisions and developments are likely to cause;

•Further to the previous item, pay greater attention to ensuring sufficient and appropriate conditions are imposed when processing applications for consent for land subdivision and development (including Government and Government Agency developments);

•Promote the use of alternative transport modes where available (e.g. rail during sugar cane harvesting or sea transport (barging) for forestry logs);

•Close roads that are susceptible to damage to heavy traffic during periods of inclement weather;

•When continuing damage to a road is identified as occurring require the offender to immediately halt use of the road until the issue has been investigated and satisfactorily resolved;

•Require the operators and/or owners of heavy vehicles that cause significant damage to a road or roads to pay the cost of the remedial work;

•Impose bridge weight and other use controls whenever the situation requires it (including totally prohibiting use of the bridge);

•Identify better ways of managing the traffic flow in Suva in order to reduce congestion; Review traffic lights management in Suva to improve vehicles and pedestrian flow; and

•Identify some sort of benefit/cost methodology and adopt a policy approach to the problem of the number of small sparsely populated areas that require a transport infrastructure capable of accommodating buses that is more than can really be afforded.

•Identify and explore potential non-asset solutions (i.e. ways of achieving desired objectives more efficiently & effectively by ways other than having to expend funds on the provision, maintenance, renewal & capital developments of the physical

SECTION 4.5 - ENVIRONMENTAL MANAGEMENT AND POTENTIAL NEGATIVE EFFECTS

Table 4.5.1 identifies areas where the roads and jetties (or the FRA's actions or inaction relating to them) may adversely impact the natural environment or peoples' lives – and explains the FRA's intentions relating to each.

TABLE 4.5.1 – Environmental Management and Potential Negative Effects

No	POTENTIAL NEGATIVE EFFECT	PROPOSED ACTION
1	**Contamination of Natural Waters** Cars and trucks leave particles of worn tyre material and un- burnt fuel from exhaust pipes on the road surface. The road surface also gradually wears down. Rain washes this material into the roadside drains and storm water systems and then into the streams and the sea – contaminating the natural waters.	Discharge permits will be obtained (and fully complied with) in all situations where these are required. Careful consideration will be given to the potential discharge impacts when designing proposed work and to the contractor's obligations when preparing the tender documents.
2	**The Flooding of Adjoining Properties** Flooding is caused to adjoining properties as a result of inadequate (or inappropriately designed or insufficiently maintained and managed) road culverts and storm water drains.	Careful attention will be paid to the storm water implications when designing new construction (or significant renewal) projects – the objective always being to ensure the volume and rate of discharge after the proposed work is no greater than currently exists (and, where there are current problems, if possible reduced). The FRA routinely monitors the contractors' performance to ensure existing culverts and drains are being properly maintained and managed. There is nothing that can be done to prevent the flooding of properties during major storm

No	POTENTIAL NEGATIVE EFFECT	PROPOSED ACTION
3	**Traffic Noise** Undue noise to adjoining properties from traffic volumes – usually in urban areas.	Not a significant problem in Fiji. Apart from erecting a physical barrier or planting shielding vegetation – or constructing 'traffic humps' that require vehicles to slow down or signs to prohibit engine braking - there is little the FRA can do.
4	**Traffic Congestion – Especially in Suva** Congestion negative effects include: • time wasted sitting in traffic; • late arrival at the destination; • the inability to forecast travel time; • increased fuel use and air pollution; • increased vehicle wear and tear; • as a result of the two previous items, higher vehicle operating costs; • stressed and frustrated motorists (and pedestrians); • emergency vehicles obstructed/delayed; • a spill-over effect onto other roads (rat-running' etc) • (in Suva) problems being able to quickly vacate the area in the case of a Tsunami or	Congestion problems should be anticipated and addressed by a multitude of planned actions before they occur – not wait until they have occurred and then try and fix them. Often it is then too late and impossible to do a great deal. A Suva Transportation Study has just been completed (2014). The findings will be considered for inclusion in the forward works programme when the asset management plan is updated next year.
5	**Potential Damage To Wildlife Habitats or Sites of Archaeological or Historical Significance**	The FRA will take care to avoid causing damage to wildlife, archaeological and historic sites when carrying out roading work.

SECTION 4.6 - PROPERTIES' MANAGEMENT

1. INTRODUCTION

The principal property management requirement is that the FRA purchase all land that it requires for road purposes well before the programmed date for construction and that it not continue to hold land that it no longer requires.

In addition, FRA currently has assets at the former DNR depot sites (that are either held for strategic purposes or leased to the maintenance contractors). FRA is currently working with relevant Ministerial and Local Government Departments to have the land title transferred to FRA and in FY 2018/19 will be re-occupying depot sites.

2. LAND REQUIRED FOR ROAD

The FRA works closely with the Ministry of Lands regarding this responsibility and the process that is followed is explained in Attachment 'F' in the Green Book – the FRA's 'Operations Manual'.

The potential for proposed projects not being able to proceed when programmed because required land has not been purchased (or houses and utility services have not been relocated) has been identified in the Risk Register as a potential risk and an interim programme of all land purchase requirements is to be prepared– and will be maintained in a continuously updated form there. (See Risk No 150 – "Land Purchase for Road/Utilities' Relocation Delays"). 'An issue' about this has earlier been raised in Section 4.3.

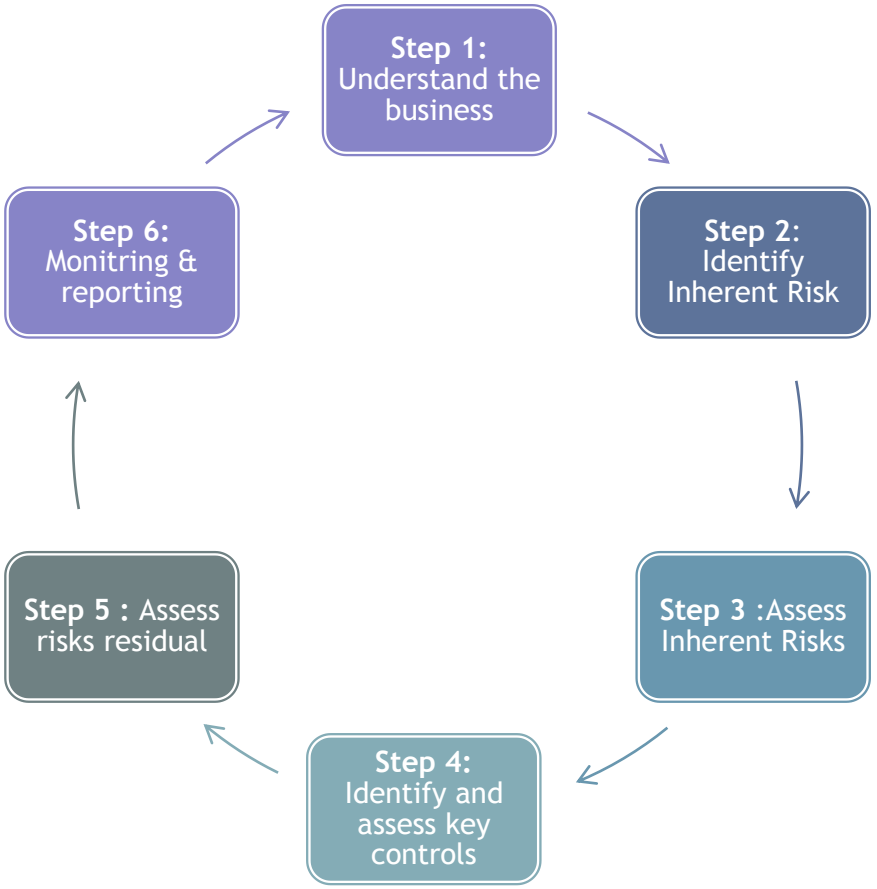
SECTION 4.7 - RISK MANAGEMENT (INCLUDING OCCUPATIONAL HEALTH AND SAFETY)

RISKS' MANAGEMENT FRAMEWORK

The FRA puts a lot of emphasis on risks' management and identification. Section 4.7.2 further summarises how the FRA risk management framework is applied to the management of the road asset. It identifies where risks associated with the road, bridges jetties asset are recorded, identifies the major risks associated with the asset and outlines how they are currently being controlled.

The FRA Risk Management framework is intended to demonstrate a considered, practical and systematic approach to addressing risk. Risk Management requires the identification, evaluation and control of any action undertaken by the FRA, which can threaten its operations, assets and other responsibilities. Failure to acknowledge this can have serious consequences. These consequences are not necessarily restricted to financial and may result in health & safety risks, disruption risks, reputational risks, regulatory risks and the like.

FRA's risk management process is illustrated below.



Risk Rating Matrix

		Consequence (Impact)				
		Insignificant	Minor	Moderate	Major	Catastrophic / Severe
Likelihood	Almost > 85%	Medium	High	Extreme	Extreme	Extreme
	Likely 50-85%	Medium	Medium	High	Extreme	Extreme
	Possible 25-50%	Low	Medium	High	Extreme	Extreme
	Unlikely 10-25%	Low	Low	Medium	High	Extreme
	Rare < 10%	Low	Low	Low	Medium	High

RISK MANAGEMENT STRATEGY

To manage risk, the FRA will maintain and reviews a number of risk registers in a multi-level risk management framework as shown below. Risks are captured and managed in Levels 3 and 4. These risks can be escalated to the department risk register and subsequently can be escalated to the corporate risk register as required. Some risks will exist in both the delivery team plans and the asset risk register.

The asset risk register facilitates management across all asset groups. It includes asset at risk that will:

- Impact on the overall delivery of the plan.
- Affect the resilience of the highway network.

The register quantifies and assesses the risk together with the proposed action and investment to mitigate the risk. The asset risk register is one of the inputs to the formation of the *Forward Works Programme* and it will be reviewed at least annually.


Coporate Risk Register
Business Risk Register
Delivery Team risk register
Asset Risk Register
Project Risk Register
LEVEL 1
LEVEL 2
LEVEL 3
LEVEL 4

Critical risks, being those assessed as 'Extreme' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the Risk Register are summarised below

No	Risk No	Key Risk	Inherent Rating	Mitigation Plan (Key Controls)	Treatments Plan	Residual Rating (After Mitigation & Treatments)
1	**R001**	Inadequate change management relating to project and programme delivery	Extreme	Annual Corporate Plans, MOUs, Stakeholder Engagements, Monthly Project Performance Reporting, Network Development & Maintenance Strategy Plan, Service Request Monitoring Process, Project Risk & Mitigation Registers and Project Implementation Handover & Sign-off	AMP System Integrated in Enterprise Resource Planning system (ERP), Completion of Transition Program and BU process mapping & Rewrite Operations Manual.	**Medium**
2	**R003**	Damage to physical assets	Extreme	Asset Management Plan, Critical Asset Management Register, Road Asset Maintenance Management System in place (RAMM), Geographical Information System in place, Fixed Assets Register and Rehabilitation & Resealing programme in place.	Review over Asset Management Plan, Strategic Plan for FRA, AMP System Integration, Enterprise Resource Planning Implementation (ERP).	**Medium**
3	**R004**	**Business disruption**	**Extreme**	**Emergency Procedure Manual and Asset Management Plan**	**Development & Implementation of Business Continuity Plan, Disaster Recovery Plan, Critical roles to be identified & Succession Planning to be done and BU process mapping.**	**Medium**

4	**R007**	External fraud	Extreme	Due Diligence on Contractors & Consultants, Reviews on Progress Claims, Performance Security Bonds in place for Major Contracts, Tender Review Committee, System Access Restriction, Fraud Control Plan and Board Approvals on variations.	BU Process Mapping & Ops Manual Re-Write, Endorsement of Procurement Procedures and Implementation and Endorsement of Technology Policy & Procedures	Medium
5	**R005**	Inadequate contractor, vendor & supplier management	High	Procurement Process, Due Diligence on Contractors & Consultants, Signed Contractual Agreements, Performance Security Bonds in place for Major Contract, Delegation approval process in place for cost over runs & time extensions, Tender Review Committee for Contract Award Decisions and Contractor Performance Reporting	Endorsement of Procurement Procedures and Completion of Transition Program to enhance staff capacity on delivery.	Low
6	**R006**	Failure of critical systems and IT infrastructure	High	System Access Restriction & Reviews, Server Capacity Monitoring, Daily Data Back-up, Digital Information Policy in Place and Stakeholder Approval Over Major Changes to the system.	Disaster Recovery Planning and Implementation and Endorsement of Technology Policy & Procedures.	Low
7	**R010**	Inadequate design, delivery and maintenance	High	Inspection over bridges, Road Safety Improvements, Register of all blackspots/crash locations, Maintenance of safety deficiency database and Annual Maintenance & Capitals Works Delivery Plan in place	Future Traffic Growth Planning, Enterprise Resource Planning Implementation, In-house management of designs and allocation of works priorities as per AMP and Implement of Critical Bridge Maintenance Action Plan	Low
8	**R009**	Inappropriate people management	High	Staff Training & Development plans are in place based on identified skill gaps, HR govern by staff Manual, Annual Performance Monitoring & Appraisal system in place and Due Diligence over new employees before on-boarding.	Completion of Transition Program, Capacity Building, Succession Planning and BU Process Mapping & Ops Manual Re-Write.	Low

9	R002	Failure of data management framework and processes	High	Annual Budget Review & Approval Process in Place, Monthly & Quarterly Project Performance Reporting, GL Reconciliations, Delegated Authority Limits, Systemic Approval over Transactions and Financial Reporting to Government Stakeholders.	Implementation of ERP system and BU Process Mapping & Ops Manual Re-Write.	Low
10	R008	Failure to manage and/or respond to regulatory or compliance obligations	High	Stakeholder Engagement Processes, Review over Statutory Reports before Submission, Legal unit monitoring compliance to regulatory requirements and Obligation Register in place	None	Low

SECTION 4.8 – LAND DEVELOPMENT – ROAD IMPACTS

One way the FRA acquires assets is through the vesting of roads (as that term is defined in the Decree) that are constructed by sub-dividers and developers when land is subdivided and/or developed.

The FRA's Subdivision and Development road impacts policy approach is outlined in Attachment 'G' in the 'Green Book' – its 'Operations Manual'. In summary it is as explained in Table 4.8.1.

Table 4.8.1 – The FRA's Subdivision and Development Road Impacts Policy Approach

(a) No subdivision or development **(including a proposed Government or 'Government supported' project)** shall be allowed to proceed until a scheme plan (or development plan) has been submitted to the Department of Town and Country Planning (DTCP).

(b) The DTCP will circulate two hard copies copy and a soft copy of every application received to the FRA.

(c) The FRA will study every application to determine if, in its opinion, the proposed subdivision or development is likely to impact the network in any way – either during its construction or after completion (or both).

(d) If, in the FRA's opinion, the proposal is likely to impact the network appropriate requirements will be imposed as a condition of the FRA's consent to the proposed subdivision or development proceeding. Such requirements may include, but are not limited to, a condition (or conditions) requiring the sub-divider or developer to:

(i) construct a new road or upgrade an existing road;

(ii) Pay to the FRA a developer contribution to enable the FRA to fund the cost of managing or mitigating the envisaged impacts. The developer contribution shall be calculated as follows:

- If the development is responsible for the total impact on the network, they pay 100%
- If development is partially responsible for the impact they pay a percentage - 50% or 30%
- If proposed work was planned by FRA but not programmed for the current year and consequently, brought forward, the developer is expected to pay for the cost of bring it forward.
- If works programmed for the year or impact on network is not the responsibility of the developer - no cost imposed on the developer.

(iii) not to erect any building forward of a prescribed building line on the subject property – such building line condition to be registered on the property title;

Any condition imposed pursuant to the foregoing may, without limitation and by way of illustration only, include a requirement (or requirements) to:

(i) construct any proposed vehicular crossing at a particular location and limit vehicular access to the property to that point or points;

(ii) construct off-road parking (including turn-around facilities) on the subject property;

(iii) widen an existing road to provide safe ingress and egress to the subject property;

(iv) construct footpaths, parking spaces or parking areas, bus stops and bus shelters;

(v) provide new, or upgrade existing, road lighting;

(vi) provide new, or upgrade existing, road signage;

(vii) ensure the provision of such storm water control as the FRA may direct – including the construction or upgrading of storm water lines on the subject or across other property and the granting of easements in favor of the FRA if necessary;

(viii) provide roadside beautification;

(ix)	in the case of an unsealed road pay to the FRA the cost of widening, additional drainage, and additional metaling during the entire period of any proposed extraordinary heavy vehicle use;
(x)	obtain the FRA's approval to a traffic safety plan and comply with all provisions of the approved plan to the FRA's satisfaction during the construction or upgrading work; (and)
(xi)	(if appropriate) upon completion of the construction or upgrading work, in a manner specified by the FRA, provide plans of the completed roadwork's.
(xii)	Vest/dedicate ownership of the asset, free of charge, in the FRA as a road
(e)	In formulating the proposed conditions of consent:
(i)	for consistency purposes the same officer shall, if at all possible, have responsibility for coordinating the responses to all applications received from the DTCP;
(ii)	all conditions will be prepared based on the FRA's adopted road standards and those standards shall not be relaxed without good reason;
(iii)	the proposed conditions will be properly expressed in a clear and professional manner;
(iv)	the report shall be provided to the Department of Town & Country Planning within not more than 20 working days of the application's receipt and preferably (a lot) sooner; (and)
(ii)	the CEO shall have delegated authority to 'sign off' all proposed conditions. CEO may delegate the 'sign off' to another officer within FRA.
(f)	Where there is a requirement to construct and/or upgrade a road or any other significant infrastructure asset the consent condition will include a requirement that before work starts the applicant shall submit an engineering plan of the proposed works for the FRA's approval - and except with the FRA's consent shall not commence the construction or upgrading work until the FRA's approval (in writing) has been obtained.
(g)	The FRA will carry out regular inspections during construction (or upgrading of the road or other asset) to ensure the road or other asset is actually constructed (or upgraded) to the standards it has required.
(h)	The sub-divider (or developer) will not commence the proposed land activity intended by the subdivision or development, and the Department of Town and Country Planning will not certify the subdivision or development as completed, until the FRA has certified in writing that all conditions imposed by the FRA have been satisfactorily met.

Hundreds of thousands, (perhaps even millions) of dollars in additional costs can be incurred if this task isn't managed responsibly. Many road authorities have incurred serious problems in this area – especially due to insufficient consideration being given to proposed subdivisions and/or developments in the early stages and major damage being subsequently caused to the roads (perhaps over an extended period of time) by mining, foresting, or other road use associated with major developments (like the construction of a new dam or power station).

The FRA will be constantly on the lookout for this type of use of the roads and will take proactive action promptly whenever a potential problem appears.

SECTION 4.9 – ROAD SAFETY MANAGEMENT

1. BACKGROUND

The primary objective of any road safety programme is a reduction in the number of road accident injuries.

In 2011 the Government adopted a national plan for road safety – the 'Fiji Decade of Action For Road Safety (2011-2020)' (FDARS). FDARS:

(a) says that in 2011 about 50 persons were still being killed on the roads each year and 2,500 injured - costing the economy about $30 - $40 million annually; and

(b) establishes as its principal objective reducing:

- the number of fatalities from about 8 per 10,000 vehicles (in 2011) to 4 by the year 2020 (and)
- the total number of injury accidents by 5% annually.

In order to achieve this FDARS requires specific road safety actions by seven key stakeholders under seven headings:

(a) Safer Roads	FRA
(b) Safer Drivers	LTA
(c) Safer Vehicles	LTA
(d) Road Safety education	LTA and Ministry of Education
(e) Post-Accident Care	National Fire Authority, St Johns Ambulance and Ministry of Health
(f) Accident Data and Research	Police
(g) Traffic Law Enforcement	

Police and LTA. The specific tasks FDARS gives to the

FRA are:

(a) Mark and delineate 600km of roads by December 2020;
(b) Implement safety audits on all new major road projects by 2012;
(c) Complete safety audits on all existing main and secondary roads by December 2020;
(d) Improve 30 black spots by December 2020;
(h) Complete 40km of route action plans (e.g. overtaking lanes) by December 2020;
(e) Implement 60 mass action plans (e.g. signalized pedestrian crossings on all 4 lane roads) by December 2020
(f) Implement 30 village treatments by December 2020;
(g) Implement traffic management plans in four major towns by December 2020;
(h) Implement traffic management plans in six smaller towns by December 2020.

2. FRA APPROACH

This matter appears not to have been receiving the degree of consideration it should have since FDARS' adoption. Issues the FRA needs to address are listed in Table 4.9.1.

Table 4.9.1 – Road Safety Issues The FRA Needs to Address

- The DNR did not have a comprehensive road safety policy that it was following;
  - There is no documented implementation plan for the matters listed in the 'Fiji Decade of Action for Road Safety – (2011-2020) Plan' (FDARS) for which the FRA is responsible;
- Eight of the nine FDARS targets have an achievement date of 2020. Interim targets need to be established for every task.
  - There are questions about whether the actions listed in FDARS as being the FRA's responsibility are in fact the best (or most effective and efficient) way of addressing the road safety problems;
- How are road safety costs to be funded? (Requested funding for road safety was halved during the budget setting process);
- There needs to be a greater degree of co-ordination between The FRA. the Police, the LTA and the Ministry of Education, the Ministry of Health, the National Fire Authority and St Johns Ambulance;
- Before it can prepare a future road safety policy the FRA needs a lot more reliable data about the current state of the roads, where the principal safety weaknesses are, and what needs to be done about them.
- This is going to take some time;

  Whatever is done needs to be driven primarily by the aim of reducing the number of accidents that are occurring now. This requires that the FRA have constant prompt ready access to all accident records (including all supporting information). These records are maintained and held by the Police and a protocol needs to be agreed about how the information can best be shared;
- Further to the previous item, a thorough analysis of the existing crash data is required to:
  - determine its accuracy;
  - identify any recurring crash features to enable effective programmes to be developed;
  - identify where the whole crash data collection process can be improved (especially identification of what the most useful data that should be being collected is), and how that might best be done and documented; and
  - the more recent fatal and serious crash locations and type, to determine if road conditions were a factor.
- The 2014 Greater Suva Transportation Study identified:
  - 31 intersections that need improvement there in the short term predominantly on road safety grounds.
  - that pedestrians in Suva are overrepresented in the crash statistics and new pedestrian crossings, improved lighting and more and better footpaths are required; (and)
  - that increased enforcement of road rules is needed

SECTION 4.10 – POTENTIAL ALTERNATIVE METHODS OF SERVICE DELIVERY

The FRA's procurement approach is described in detail in Section 4 of 'the Green Book' – its Operations Manual. In summary it is as described in Table 4.10.1.

Table 4.10.1 – The FRA's Current Procurement Approach

□ **FRA will provide construction management supervision work**

FRA has undergone a period of extensive recruitment so that it is in a position to deliver professional engineering construction management services.

• **Roads' Maintenance**

There are three maintenance contracts, based on the traditional works division boundaries – Western, Northern (including Taveuni and Rabi) and Central/Eastern (including Suva).

Road Renewals

□ A large percentage of annual pavement renewals requirements has been included in the maintenance contracts. The balance is tendered in appropriate work packages on an open 'Request for Tender' basis.

New Capital Expenditure

Generally, 'new capital' work is tendered on an open 'Request for Tender' basis and are currently design and build contracts. Moving forward as FRA recruits more technical design staff it is hoped that detail design work can be done in house.

• **Streetlights' & Traffic Signals**

The street lights and traffic signals contracts are awarded on a 'request for tender' basis

Road Safety

Road safety work is very 'planning intensive'. Some of it may be done by the FRA's Professional Engineering Services Advisers, some may be let out by tender to other consultants, some may be done based on unit rates that have been agreed with the Maintenance Contractors, and some may be compiled into appropriate work packages and let to specialist parties.

□ **Subdivision and Development Control**

Subdivision and Development Control work is done by the FRA's Planning and Development Team

• **Land Purchase and Roads' Legalization**

Land Purchase and Roads' legalization work is done by FRA staff in close consultation with the Ministry of Lands (and the surveying work by private consultants).

□ **Laboratories**

Laboratory services are contracted out on a request for tender basis

□ **Quarries**

FRA is pursuing quarry licences for multiple sites around Fiji. The sites will be operated by contractors once the licence is secured.

• **Jetties' Maintenance**

The FRA to determine the most appropriate way of maintaining the jetties.

As is illustrated in Section 1.8 – 'Levels of Service, Performance Measures and Targets', the FRA continuously monitors its performance in all areas of its operations and it is continuously searching for more effective and efficient ways of managing its business.

5.0 CONTINIOUS IMPROVEMENT

5.1 Improvement Plan/Gap Analysis

SECTION 5.1 – IMPROVEMENT PLAN/GAP ANALYSIS

The most important aspect of the whole AMP process is identification of the FRA's weaknesses and of the opportunities for future business improvement – **and then actually 'doing something to solve them'**.

"Any plan is of absolutely no value at all if the work it identifies as being necessary isn't subsequently carried out".

At every annual update of this AMP the extent to which items listed in this Improvement Plan have been achieved will be assessed. If the progress is less than was intended, the extent to which that is the case (and 'why') will be quantified and reported to the CEO (together with a recommendation concerning the remedial action that needs to be taken to address the work that hasn't been done (that should have been) and to ensure the problem doesn't reoccur.

Together with:

- management of the risks listed in the Risks' Register – (in the 'Grey Book' – the FRA's Risks' Management Manual); and
- achievement of all of the performance targets listed in Table 1.8.2;

resolution of all of the 'issues' listed in the Improvement Plan is the key business driver for the whole FRA organisation.

Also, when the issue is transferred to the Improvement Plan from the section in the AMP in which it has been initially raised the responsible person must:

- ensure it is given a 'stand-alone' title which will enable any reader to quickly understand what it isabout;
- review, and if necessary expand, the 'Corrective Action' words to ensure they describe sufficiently what is intended to be done. (A general explanation only is all that is required in the body of the AMP); and
- enter the date upon which the issue has been added to the list.

Regarding the issues and their numbering:

- Issues should be deleted from the list as they are completed – but a chronological list of such items kept for future reference;
- New issues will be added as they arise;
- The numbering has been arranged to enable additional items to be inserted at the most appropriate place in the list.
- Once entered maintain the same issue number. **Do not change it.** If there is no space to enter a new item use alpha – e.g. '212A'

A chronological record of the progress being made towards the resolution of each issue listed in the Improvement Plan is required to be maintained **by the 'Responsible Person'** (in the standard form shown in Table 5.1.1)

6.0 AMP UPDATING EVALUATION

6.1 AMP Review

SECTION 6.1 – AMP REVIEW & UPDATING

This AMP is updated annually – in May, in time for it to be used for the Government's budget setting programme. (See Section 3.1 in the Green Book – the FRA's Operations Manual) and is comprehensively reviewed every three years. However, it has been designed not just as a plan 'to sit on a shelf' but as an integrated management system that is to be used and adhered to daily. All FRA personnel are expected to be continuously sending updated information and their ideas for its improvement to the FRA Head of Governance.