Tuvalu Safe and Resilient Aviation Project (TUSRAP)

Environmental and Social Management Plan

Funafuti International Airport (FUN)

Revision B, October 2023

Prepared by CPMO, Ministry of Finance

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Glossary and Abbreviations

ACM	Asbestos Containing Material
ADS-B	Auto Dependent Surveillance – Broadcast
AGL	Airfield Ground Lighting
ARFF	Airport Rescue and Fire Fighting
ATC (ATCT)	Air Traffic Control (Air Traffic Control Tower)
AWS	Automatic Weather Station
CAD	Civil Aviation Directorate
CLSM	Controlled Low Strength Material
DME	Distance Measuring Equipment
EA	Executing Agency (Ministry of Transport, Energy and Tourism)
EHS	Environmental, Health and Safety
ESMP	Environmental and Social Management Plan
ESMF	Environmental and Social Management Framework
FUN	Funafuti International Airport
GIIP	Good International Industry Practice
HIV/ AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
IA	Implementing Agency
IATA	International Air Transportation Association
ICAO	International Civil Aviation Organization
IUCN	International Union for Conservation of Nature
Kaupule	Tuvalu local/ village Town Council
MCT	Ministry of Communications and Transport
MOWP	Method of Works Plan
MPUE	Ministry of Public Utilities and Environment
MTET	Ministry of Transport, Energy and Tourism
NGO	Non-Governmental Organization
NZBC	New Zealand Building Code
NZCAA	New Zealand Civil Aviation Authority

OLS	Obstacle Limitation Surface
PAIP	Pacific Aviation Investment Program
PESMP	Project Environment and Social Management Plan
PIB	Project Information Bulletin
PST	Project Support Team
PWD	Public Works Department
SPREP	South Pacific Regional Environmental Program
TANGO	Tuvalu Association of Non-Governmental Organizations
TASNOC	Tuvalu Association of Sports and Olympic Committee
TMP	Traffic Management Plan
TOR	Terms of Reference
TUSRAP	Tuvalu Safe and Resilient Aviation Project
WB	World Bank

1 Executive Summary

The Tuvalu Safe and Resilient Aviation Project (TUSRAP) was established to carry out remain runway upgrading activity from the previous Tuvalu Aviation Investment Project (TvAIP). The TUSRAP project objective is to improve the safety and resilience of Tuvalu's aviation sector and to ensure reliable regional air connectivity. This Project Environmental and Social Management Plan (PESMP) has been prepared for selected FUN TUSRAP project components, namely the latest proposed asphalt overlay for the runway, to supplement previous infrastructure works listed below, to meet funding and Tuvalu legislative requirements.

The Ministry of Transport, Energy and Tourism (MTET) through the Civil Aviation Directorate (CAD) manage the airport operations and are responsible for compliance with national and international civil aviation requirements. The public road network is managed by the Public Works Department (PWD).

This PESMP's objective is to identify the potential environmental and social impacts and the measures needed to prevent, minimize, or mitigate adverse impacts and improve environmental performance for the TUSRAP project components.

Overall, the TUSRAP is a Moderate risk project under the WB Environmental and Social Framework (ESF) and requires development of the project ESMP. Moderate risk projects have potentially limited adverse social and environmental impacts that are site specific, largely reversible, and readily addressed through mitigation measures. This PESMP is a live document to be updated if there are changes to the project scope, detailed designs, or if further information becomes available as a result of consultation with stakeholders and the community. The objective of the PESMP is to provide guidance for managing the airport and road upgrade works in a manner that incorporates the principles of environment sustainability while minimizing potential adverse effects on the local community and the environment.

This PESMP includes information on mitigation, monitoring, capacity development and training, and implementation costs. The majority of potential adverse impacts will occur during the construction phase of the TUSRAP. However, given that this primarily involves the rehabilitation of existing infrastructure, mitigation measures should be able to alleviate or lessen any potential negative impacts. The key potential impacts that are being mitigated are:

- Solid waste generation
- Hazardous materials handling and storage
- Noise and vibration disturbances from machinery and transportation of materials
- Air pollution from dust and equipment
- Traffic disruption during construction activities
- Transport of equipment and materials from the port and around Fongafale
- Disposal of waste materials
- Safety hazards for workers and users of the facilities where upgrades are occurring
- Water demand management for freshwater resources
- Wastewater discharges
- Construction camp establishment and dis-establishment

This PESMP is designed to address these issues through:

- Implementation of this PESMP through the Contractor's ESMP.
- Regular supervision and monitoring of the implementation of the PESMP (refer PESMP monitoring plan).

2 Introduction

2.1 Background

The Tuvalu Safe and Resilient Aviation Project (TUSRAP) is funded by the World Bank (WB) and has the development objective to improve the safety and resilience of Tuvalu's aviation sector and to ensure reliable regional air connectivity. TUSRAP is a follow-up project from the Tuvalu Aviation Investment Project (TvAIP).

Tuvalu is the fourth smallest country in the world with a land mass of only 26 km2. The three reef islands and six atolls are only accessible by boat. FUN is the only airport within Tuvalu and is the primary access point for tourists and expatriate Tuvaluans. Tuvalu faces many challenges and constraints regarding economic development due to the remote location and limited capital resources. Transport connectivity with the Pacific region is an example of one such challenge Tuvalu faces. Improved accessibility to the country will benefit tourism related services, seasonal agriculture, seafarers labor markets and commercial businesses.

Recognizing the key role of aviation transport in the country's socio-economic growth, in 2011, the Government of Tuvalu (GOTv) requested support from the WB and other regional donors (New Zealand Aid Program, AusAID and Asia Development Bank) to improve the FUN facilities and services. FUN is operated by the Civil Aviation Directorate (CAD) of the Ministry of Transport, Energy and Tourism (MTET) The Tuvalu Aviation Investment Project (TvAIP) was established to carry out the upgrade activities as identified in the PAIP funding grant.

In July 2021 an updated Project Environmental and Social Management Plan (PESMP) was developed for these proposed works under TvAIP [1]. However, as the new TUSRAP project is migrated to the WBs Environmental and Social Framework (ESF), the PESMP has been updated to this current version and now responds to the additional requirements of the ESF.

2.2 Project Location

Tuvalu, formerly known as the Ellice Islands, is a Polynesian island nation located in the Pacific Ocean, about midway between Hawaii and Australia, lying east-northeast of the Santa Cruz Islands, southeast of Nauru, south of Kiribati, west of Tokelau, northwest of Samoa and Wallis and Futuna and north of Fiji. It comprises three reef islands and six true atolls spread out between the latitude of 5° to 10° south and longitude of 176° to 180°, west of the international date line. Tuvalu has a population of 10,640. The total land area of the islands of Tuvalu is 26 square kilometers. The airport terminal and the runway located on Funafuti Island, the capital of Tuvalu. It situated in the southern central part of Funafuti extending to the eastern side of the island.

[1] TvAIP was Phase 1 of TuSRAP, which continues the implementation of the remaining activities from TvAIP.

Figure 1: shows all project site for the TuSRAP including Airport terminal, runway, asphalt plant and lay down area for project materials.

Transport services in Tuvalu are limited. There are about eight kilometers (5 miles) of roads. Tuvalu is among a few countries that do not have railroads. Funafuti is the only port but there is a deep-water berth in the lagoon at Nukufetau. The Manu Folau is a 50-metre vessel that was a gift from Japan to the people of Tuvalu. In 2015 the United Nations Development Program (UNDP) assisted the government of Tuvalu to acquire MV Talamoana, a 30-metre vessel that will be used to implement Tuvalu's National Adaptation Programme of Action (NAPA) to transport government officials and project personnel to the outer islands

2.3 Environmental and Social Management Plan Objectives and Scope

The overall scope of this updated report is to provide a Project specific ESMP, also identifying the risks and impacts, for the proposed works under TUSRAP. The project has been rated as a Moderate risk project for both environmental and social under the ESF.

The PESMP outlines the mitigation measures required for avoiding or minimizing the potential impacts of the works and provides a monitoring program to confirm effectiveness of the required mitigation measures. Roles and responsibilities are clearly defined for all stages and execution of project works. The PESMP also provides the details of how the community and stakeholders are to be engaged and the mechanisms for ongoing consultation and communication.

This PESMP is limited to the scope of works as described in Section 3 of this document and addresses impacts and mitigation measures identified at each stage of the project's execution, namely detailed design, construction and operation. This updated version of the PESMP for TUSRAP (Ver A) replaces all other versions under TvAIP and builds on the impacts and mitigation measures developed under previous versions and includes outcomes of the consultation undertaken to date. This PESMP will be included in the bidding documents for construction contractors and form the basis of the Contractor's ESMP (CESMP) which is a requirement of this Plan. The mitigation measures identified in this PESMP form the minimum requirement for reducing impacts on the environment as a result of works associated with the project.

This PESMP will be updated if there are changes to the project scope, detailed designs, or if further information becomes available as a result of consultation with stakeholders and the general public. The objective of the PESMP is to provide the requirements for managing the runway upgrade works in a manner that incorporates the principles of environment sustainability while minimizing potential adverse effects on the local community and the environment.

2.4 Disclosure

As part of the requirements of GoTv law and World Bank ESF, the PESMP will be publicly disclosed once approved and will be easily accessible during project implementation. Disclosure is the responsibility the TUSRAP Project Management Unit (PMU). The PMU will ensure the PESMP Executive Summary is translated into Tuvaluan prior to disclosure in hard copy and on their website. Likewise, the PMU and the Funafuti Kaupule will ensure that several copies of all prepared E&S risk management instruments are available locally at the PMU office and the Kaupule office, easily accessible to affected groups and local NGOs.

The PESMP is a living document and will be reviewed, updated and approved as necessary throughout the implementation of the Project. For each approved updated version of the document, the TUSRAP Project Manager will be responsible for disclosure through the above channels.

3 Description of Works

This section is informed by the relevant Technical Requirements section of the current Final Detailed Design bid documentation issued by the consulting Engineers (GHD Limited).

3.1 Description of Works

This section describes the works which were unable to be completed under TvAIP and have been migrated to TUSRAP.

3.1.1 FUN Runway Repairs

There are currently several issues which have arisen since completion of the original TvAIP runway upgrades in 2015: (i) The seal area over the existing apron had initially failed but was then subsequently rectified by the Contractor (McConnell Dowell) by early 2020; and (ii) the runway surface has displayed a number of depressions and potholes, which have been repaired by PWD. Independent testing by Auckland University, funded by the Bank, was completed in May 2017.

The Auckland UniServices report[2] suggest that the depressions and potholes on the runway were caused by venting of air pressure in voids under the pavement potentially caused by tidal movements. Furthermore, the report concluded that there is an arguable correlation between the water table underneath the runway and sub- surface pressure with sea tidal fluctuations. Spikes (caused by heavy rain, Spring tides) acerbated these trends and appear to have been sufficient, in several places, to lift the pavement surface. In addition, small voids under the pavement became super-heated by the sun on the pavement surface, leading to localized pressure ruptures.

[2] Implications of Sea Level Rise on Costal Pavement Infrastructure: A Case Study on the Funafuti Airport Runway (Tuvalu), May 2017

Figure 2: Blistering and depressions on runway

3.1.2 Remedial Options for Runway Damage-Drainage

The selected solution for the remediation of observed venting issues, affecting the existing pavement at the Funafuti Airport, submitted by GHD[3] in July 2019 include:

- Asphalt overlay over a 600-meter-long section (tie-in ramps inclusive) in the central part of the runway from chainage 400m to chainage 900m; and
- Asphalt patch repairs in the northern and southern part of the runway, which is currently not part of proposed asphalt overlay.

The UniServices report (2017) identified some options and the recently appointed design engineers will develop options and confirm the solution and detailed design during project implementation. The Auckland UniServices report researched similar airport pavement problems in Hong Kong (China), Albany City (Australia), Norfolk Island (Australia), and Barrow Island (Australia). The report concluded that "Despite not fully understanding the underlying failure mechanism, the solution would either be a pressure relief system similar to that used in Hong Kong or a 50- 60 mm thick asphalt overlay similar to that adopted at Barrow Island and Albany City (Australia). An interim solution adopted at Albany and Norfolk Island (Australia) to address the blistering problem could also be trialed -- by puncturing the surface to release the vapor pressure, leaving the surface to dry out and then rolling it with a pneumatic roller."

[3] GHD was appointed to provide Supervision Services: Tuvalu Infrastructure Improvements, Funafuti International Airport, Tuvalu in October 2017

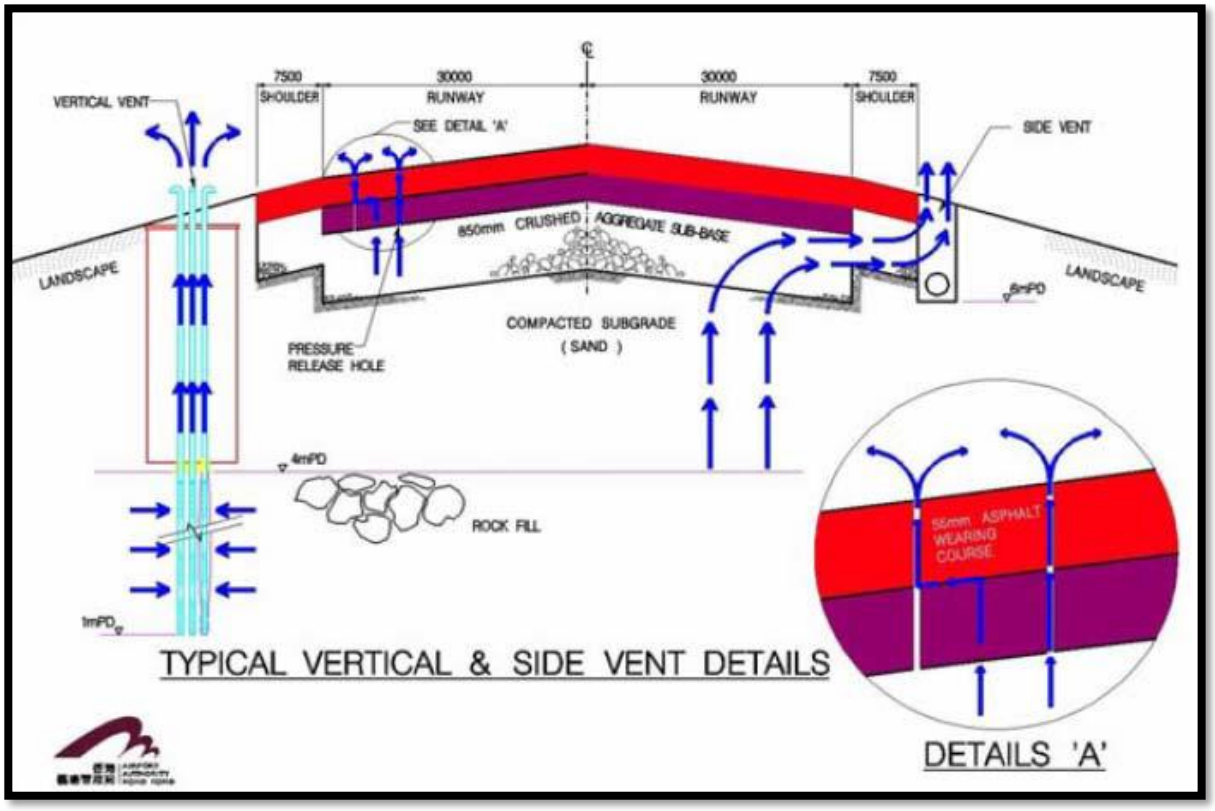


Figure 3: Releasing of vapor pressure

Repair activities will focus on the following principles and should underpin the remedial work requirements for Funafuti airfield pavements:

- Given the underlying coral formation, the subgrade and natural aggregate pavement layers are highly permeable. The pavement structure should be sufficiently permeable to allow water table to rise through the pavement layers including the bituminous surface treatment;
- Given the buildup of water and vapor pressure below the pavement surface (especially where a strong bond exists between the surface and the base layers), a mechanism should be provided to relieve the pressure under the surfacing and remove the water away from the pavement (Figure 3).

3.2 Construction Methodology

In terms of fixing the runway venting issues, the following works will be carried out:

- Asphalt overlay over a part of the existing Runway at Funafuti Airport, including;
    - Ripping/Scarifying followed by rolling of existing chip seal surface
    - Application of Primer seal

    - Application of asphalt overlay
- Earthwork and top soiling to tie-in the new asphalt overlay to the strip area
- Minor asphalt patch repair works
- Grooving (Only to be included as a provisional sump)
    - Paint markings

3.2.1 MOWP

The Method of Works Plan (MOWP) is a required document for any major construction works within the boundaries of an airport. The MOWP sets out the operational requirements for maintaining a functioning airport throughout the construction process. It includes the concessions and alternative arrangements that may need to be made (e.g., alternative aircraft parking apron) and staging of the construction process while ensuring the safety and security of all personnel, the community and aircraft and continued operation of the airport throughout construction works.

3.2.2 Materials and Equipment

Specialized equipment such as the asphalt plant (including dust scrubber), paver and milling machine will be imported for the TUSRAP project. The Contractor may either import general construction equipment such as excavators and rollers or source these locally. All cargo whether by air or ship will need to be processed in accordance with Tuvalu quarantine and customs laws which require fumigation (proof of) of materials and equipment and declarations by personnel (specifically regarding communicable diseases). The 'List of Equipment to be Used' will be part of the Contractor's Environmental and Social Management Plan (CESMP).

3.2.3 Aggregate Supply

All aggregate materials for the runway asphalt overlay will also need to be imported to complete the works. An option for aggregate source is Fiji (dependent on testing). Material from any excavations within the area of work will be reused in the first instance and supplemented as required by the imported material.

The sources and estimated volumes of the different grades of aggregate and materials required for these works will be stipulated in the relevant CESMPs.

3.2.4 Construction Camp and Lay Down Areas

Land availability on Funafuti is scarce and so there are not many options for positioning of the construction camp(s) (the contractors work site). The construction camp(s) will be utilized by the overlay Contractors and will house an asphalt plant as well as aggregate stockpiles. The construction lay down area is not a residential camp. Foreign contractors and project staff are expected to utilize existing local hotel accommodation.

A rigorous site selection process has been undertaken by the TUSRAP PMU and several sites have been ruled out. There are two sites which have been identified and approved for use by the Contractor (Figure **4**4). **The Contractor may not suggest alternative sites from those presented in this PESMP**. The two sites are identified in Figure **4**4 and are for the asphalt plant and the laydown/stockpile sites. These sites have been approved by the TUSRAP PMU, the Department of Lands, the Civil Aviation Directorate and the World Bank. The sites are within the footprint of existing infrastructure either in or bounding the airfield and all will use existing roads or tracks. The sites have been mapped by the Public Works Department and the Department

of Lands and approval has been obtained from the Lands Management Board for the temporary use of these lands for the purpose of the runway overlay works.

The site allocated for the asphalt plant is a risk for inundation during high tide and will therefore require placement of a raise pavement to secure the asphalt plant. The site formerly housed the Tuvalu Association of Sport and National Olympic Committee (TASNOC) gymnasium which was previously demolished under the GoTs and is now allocated for the asphalt plant site.

The laydown and stockpile site are all within the boundaries of the existing government leased land of the airfield and away from the populated urban center of Funafuti.

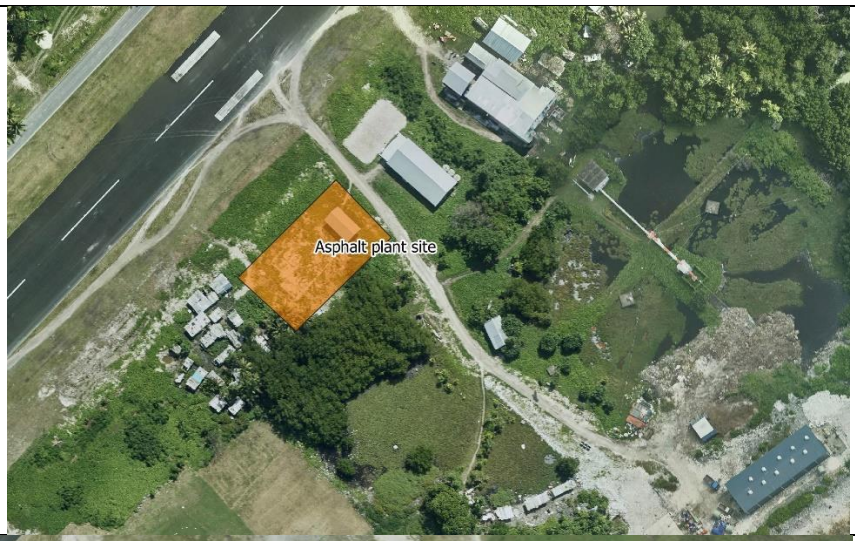
Asphalt Plant Site Notes: The building within the site has already been demolished (not linked to this project). The site is conveniently bordered by a local access road (leading to the EU-funded Tuvalu Waste Transfer Station) which was recently surfaced with a 2-coat chip seal cover as a trial install by McConnell Dowell in late 2019.	
Laydown & Stockpile Sites	

Figure 4: Identified and approved site for Contractors to use as construction camp and stockpile sites

The exact details of the layout and site management (health and safety, solid waste management, water management and wastewater management) will need to be decided by the Contractors in consultation with MTET. Final approval of these details will be required by MTET before the construction camp can be set up and documented in the contractors' environmental and social management plan (CESMP). Contractor will need to ensure minimal disruption to community members accessing facilities to the south of the stockpile and contractor's laydown site.

3.2.5 Haul Routes

Transport to and from the site and the construction camp, particularly of materials and equipment, must occur on the existing road network and measures undertaken to prevent accidents, dust, spillages, noise and vibration nuisance (e.g., wheel wash, covering of loads, servicing of vehicles).

Deviations from the nominated access routes will not be tolerated. Access to work areas can be via the airfield, so long as the route is approved by FUN and identified in the PWD.

Figure 5: Shows the nominated access route for transporting materials and equipment to-and-from the construction site and laydown area.

It is likely that the unpaved gravel track/service 'road' on the east side of the runway will be used most of the time as the aggregate haulage route. No overloaded trucks shall be permitted to depart the stock piling area.

If the transport of material or equipment is likely to impact on normal pedestrian and vehicle traffic or pose an increased safety hazard, consideration should be given to moving these items during off peak times. Measures such as prohibiting the use of engine breaking and use of speed control can be implemented to reduce noise, speed and vibration for residential properties. Once quarries and haul routes have been identified, the CESMP should assess these requirements and any necessary measures will be reflected in the Traffic Management Plan (Section 8.3). The TMP is to include provisions for evaluation of haulage route road condition before during and after haulage to determine whether repairs to the road surface by the Contractor is required prior to demobilization. Should peak time transportation of materials be necessary, it is important to communicate this in a meaningful manner to the sensitive receptors (nearby communities, school and government utility) along the route, particularly those on any unsealed roads where additional traffic management may be necessary.

3.2.6 Hazardous Substances

Potential soil and water pollution from construction run-off with fuel and lubricants are expected to be temporary and minor. Work practices and mitigation measures for spills will be implemented, including spill response plan and bunded areas for storage (during construction and operation phase).

Hard stand areas must be available for storage of hazardous substances and other vehicles, machinery or equipment that poses a potential risk to the environment (e.g., leaking lubricant from machinery). All workshop areas and bunded areas should be roofed. Runoff from hard stand areas used to store machinery will need to be collected and treated (e.g., oil water separator) to prevent contamination of soil or water bodies. Hazardous substances (e.g., fuel, lubricants, oil or paint) must be stored in a bunded area.

3.2.7 Waste

Solid waste in the form of general waste, recyclable and non-recyclable inorganic waste, organic biodegradable waste, hazardous waste, demolition waste, milled asphalt, aggregates and other construction waste will be generated by project activities.

Asphalt millings concrete rubble and surplus materials from excavations (considered clean fill material) can either be used to backfill areas where old equipment or infrastructure has been removed or as a resource (e.g., crushed basecourse material) for general use by PWD and the community.

The Contractor must develop a Solid Waste Management Plan (SWMP) (section 8.8) for all generated waste streams, to be submitted as part of the CESMP for clearance by the Supervision Engineer. At all times, the Contractor is responsible for the safe and sound disposal of all solid waste generated by the Works. All waste that cannot be reused locally must be exported from Tuvalu, for recycling, reuse or disposal to a licensed

landfill. Contractor will secure any export permits for export of waste.[4] There is no reticulated sewer network on the island, septic tanks are utilized. Construction staff will use airport facilities or facilities in their dwelling or office.

3.2.8 Health and Safety

All occupational health and safety requirements as per WB EHS Guidelines and GoT Law must be in place and workers trained in necessary procedures (e.g., spill response plan). The OHS Code of Practice in Appendix G has been designed to reinforce existing GoT health and safety law and must be applied to all aspects of the TUSRAP project

Civil works shall not commence until the PMU's Consulting Engineer has approved the OHS plan, the Safety Officer is mobilized and on site, and staff have undergone induction training. Details of the expected content of the OHS Plan and expected practices of the Contractor with regards to health and safety are stipulated Code of Practice in Appendix G and summarized in section 8.10.

3.2.9 Duration and Timing of Construction Activities

A contractor will be selected to carry out the runway asphalt overlay works program towards the end of 2023. The estimated timeline for the physical portion of the works are as follows in probable order of commencement.

- Asphalt overlay over a part of the existing Runway, including;
    - Ripping/Scarifying followed by rolling of existing chip seal surface
    - Application of Primer seal-
    - Application of asphalt overlay-
- Earthwork and topsoiling to tie-in the new asphalt overlay to the strip area
- Minor asphalt patch repair works
- Grooving (Only to be included as a provisional sump)
    - Paint markings

Normal working hours are Monday to Friday, 7am to 6pm. Works outside of these hours will require permission from MTET and notice to affected parties and the public at least 24 hours prior to work commencing. Working on a Sunday is not recommended and would likely only be approved if urgently required for safety purposes. It is likely the runway pavement repair works will need to work in addition to the normal working hours in order to work around flight schedules to ensure safe operations of the airstrip for incoming and outgoing aircraft. All flight and construction scheduling must be coordinated with air operators and the Civil Aviation Directorate as documented in the MOWP.

[4] Types of wastes that can be exported include recyclables, e-waste, hazardous waste, non-hazardous solid waste, and organic waste.

4 Policy, Legal and Administration Framework

4.1 National Requirements

The Environmental Protection Act (2008 edition) is the national legislation which provides for the protection and management of the environment in Tuvalu. To achieve this Part 5 of the Act allows the Department of Environment to request an environmental impact assessment for projects occurring within Tuvalu jurisdiction, whether land or sea. The Act has been promulgated and the items in the Act regarding environmental assessment have already been implemented. The Department of Environment will be given the opportunity to review the TUSRAP PESMP. Once the Department of Environment approves this document, the PESMP will be updated with the relevant comments, required action and/or dates of approval.

The Environment Protection Act (2008 edition) Part 6 provides details of the responsibility of the Department of Environment in relation to pollution control and waste management in Tuvalu including the management of hazardous waste, control and management of discharges of pollutants and promoting composting, recycling and efficient use of wastes. Part 9 of the Act identifies the Department's role in protecting the biodiversity of Tuvalu including control of weed species.

The Native Lands Leases Regulations (2008) apply to all leases and subleases of native land requiring the approval of the Minister. The Funafuti Airport lease, signed in January 2021 for a period of 50 years (for lands for National Development purposes) has been made under regulation 2(1) of these regulations which sets the minimum conditions for a lease and complies with Part VI (Leases) of the Native Lands Act [Cap. 46.20]. All leases are approved by the Minister once he is satisfied that the terms and conditions are fair to both parties. During the last PESMP update, there was only an MOU bridging agreement with the landowner in place (2017 – 2020). The new lease is now in full effect.

The Marine Pollution Act (2008 Revised Edition) also requires the control and prevention of pollution and dumping and incineration of wastes on the sea.

The Quarantine Act (2008 Revision) allows for measures related to the inspection, exclusion, detention, observation, segregation, isolation, protection, treatment, sanitary regulation and disinfection of vessels, persons, goods and things and having as their object the prevention of the introduction or spread of diseases or pests affecting man. The Quarantine (Marine and Aerial) Regulations (2008 Revision) provides the regulations for the arrival of passengers within Tuvalu either by air or sea and requirements regarding declaration of communicable diseases.

The Civil Aviation Act (2008 Revision) allows for the administration and regulation of civil aviation including safety and economic requirements, establishment of aerodromes, and declaration of land subject to control for airport operational safety and security. The following regulations are also in place:

- Aerodromes (Water Aerodromes) Regulations
- Aerodromes Regulations
- Air Navigation (General) Regulations
- Air Transport (Licensing of Air Services) Regulations
- Civil Aviation (Investigation of Accidents) Regulations

- Funafuti Airport (Departure Tax) Regulations
- Government Aerodromes (Landing and Take Off Fees) Regulations.

4.2 Regional Requirements

The Funafuti Kaupule (Town Council) can implement local regulations for management of the environment. On Fongafale the Funafuti Kaupule coordinates the town rubbish collection and assists the Department of Waste Management (DWM) in waste management and education programmes. The Environment Protection Act allows the Funafuti Kaupule to establish an Environmental Committee which may identify areas of environmental concern, participate in and propose activities to the Department of Environment work program.

4.3 International Obligations

Schedule 1 of the Environmental Protection Act (2008 edition) provides a list of all applicable international conventions and treaties that Tuvalu has signed up to or endorsed. The Act enables the Government to enforce and carry out obligations associated with these international obligations. Applicable obligations include:

- Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Waste and to Control the Transboundary Movement and Management of Hazardous Waste within the South Pacific region. (Adopted at Waigani, PNG on 16 September 1995)
- Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (Adopted at Noumea, New Caledonia on 24 November 1986) and the —
- Protocol concerning Cooperation in Combating Pollution Emergencies in the South Pacific Region
- Protocol for the Prevention of Pollution of the South Pacific Region by Dumping
- Agreement Establishing the South Pacific Regional Environment Program (SPREP Convention)
- Stockholm Convention on Persistent Organic Pollutants (Adopted at Stockholm on 23 May 2001)

There are also a number of international standards and operating procedures that the airport operations must comply with (e.g., ICAO and CAANZ).

Due to the problems regarding solid waste on Tuvalu and the need to export all non-recyclable or reusable waste from the project the Waigani Convention and Basel Convention are particularly relevant and will need to be adhered to in preparing hazardous substances (e.g., waste oil, lubricants, articles containing polychlorinated biphenyls) for shipping and final recycling or disposal at acceptable and licensed waste facilities. The conventions outline the necessary information required for documents (notification and movement) and agreements that need to be in place with the receiving territory.

4.4 World Bank Environmental and Social Standards

World Bank Environmental and Social Risk Management Specialist have screened the TUSRAP for risks and impacts using the Environmental and Social Standards (ESS) within the Environmental and Social Framework (ESF). The project has been deemed to have an environmental and social risk rating of ‘Moderate’ meaning most temporary impacts can be managed through conventional environmental and social risk management approaches.

The purpose of this section is to summarise the key requirements of each ESS identified as relevant, and the extent to which these requirements are matched by provisions in the national legislative framework. For reasons of space and brevity, only the most important points are summarized from the Appraisal-Environmental and Social Risk Screening (ESRS) for the TUSRAP activities:

Standard	Relevance from ESRS
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	The project will present a number of environmental and social risks and/or impacts; however, the area of influence of the project is limited as the proposed works will be undertaken on disturbed land. To manage those risks, the project will assess and manage the risks and impacts associated with the project in a manner that is proportionate to the significance of the potential risks and impacts. The PESMP and LMP for the project were prepared to meet the requirements for the national regulations, the WB ESF ESS and the WB Environmental, Health and Safety Guidelines (ESHG).
ESS 2: Labour and Working Conditions	ESS 2 is considered relevant. Workers involved in the project will include direct and contracted workers. Direct workers will include employees and consultants of the Project Management Unit. Contracted workers will be engaged through key consulting firms or construction contractors. The preparation of a Labour Management Procedure (LMP) will be included in the Environmental and Social Commitment Plan (ESCP) and will be required to be prepared during implementation but prior to contract bid document release. The LMP will include appropriate terms and conditions of employment, non-discrimination and equal opportunity, workers organisations, restrictions on child and forced labour, and OHS in design, construction and operational phases.
ESS 3: Resource Efficiency and Pollution Prevention	ESS 3 is considered relevant. The infrastructure investments associated with runway upgrade may result in design, construction and operation impacts. The design has considered long term climate change risks to select the appropriate pavement thickness to ensure optimal use of materials. Protective measures will include: (i) all aggregates and sand will be imported, (ii) no sand or coral will be taken from any beach in Tuvalu, (iii) size of imported construction equipment should be kept to a workable minimum, (iv) collection, storage and use of rainwater where possible, (v) Settling pond or tank and concrete slurry treatment.
ESS 4: Community Health and Safety	ESS4 is relevant. While the runway rehabilitation and ancillary navigational improvements will improve the safety and efficiency of air transport, the project's construction and operations may pose direct impacts on affected communities around the runway, such as through increased noise, dust, vibration, traffic from the port to

	construction site, and the incorrect disposal of waste materials. Contractor management plans will be developed to mitigate risks to community health and safety during the construction phase and operational management plans will be developed to manage potential health and safety risks during the operation of harbors and ancillary infrastructure.
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	This standard is considered relevant for the TUSRAP project as a whole, however not for the works covered by this PESMP. Land required includes temporary asphalt plant, laydown and stockpile sites. All site options are on existing government long term leased land, as is the runway. There may be minor temporary interruptions to informal recreational activities (casual volleyball and soccer games) that may occur on one or more of these sites. Land acquisition is not anticipated, and all expected sites are on existing government leased land. These are to be managed through stakeholder engagement with affected users in the SEP and fencing and traffic management provisions (including air traffic) in the PESMP and CESMP. ESS5 is not considered relevant for these works. ESS 5 is considered relevant for TUSRAP for separate Project activity (not covered by this ESMP) to provide permanent premises to the Tuvalu National Council of Women.
ESS 10: Stakeholder Engagement and Information Disclosure	This ESS is considered relevant, and A Stakeholder Engagement Plan (SEP) HAS beEN prepared for the TUSRAP works. IT HAS BEEN developed in a manner that is acceptable and culturally appropriate, considering any specific needs of groups that may be disproportionately affected by the project. The SEP outlines a structured approach for community outreach and two-way engagement with stakeholders, in appropriate languages, and adopting measures to include vulnerable and disadvantaged groups and will be based on meaningful consultations with remote island communities, community-based organisations and religious groups.

4.4.1.1 Accompanying ESF Instruments

The following instruments are also being produced for TUSRAP and should be implemented in conjunction with this PESMP.

LABOUR MANAGEMENT PROCEDURE (LMP): The LMP includes terms and conditions of employment, nondiscrimination and equal opportunity (which includes a safe work environment free from violence and sexual harassment), workers' organizations, restrictions on child and forced labor, and OHS in design, construction, and operational phases.

STAKEHOLDER ENGAGEMENT PLAN (SEP): The SEP outlines a structured approach for community outreach and two-way engagement with stakeholders, in appropriate languages, and adopting measures to include

vulnerable and disadvantaged groups (poor, disabled, elderly, isolated communities), and is based upon meaningful consultation and disclosure of appropriate information.

5 Environmental and Social Environment

5.1 Physical Environment

5.1.1 Location and Geography

Tuvalu is a Polynesian island nation that lies in the Central South Pacific, west of the International Dateline and 1,000 km north of Fiji (refer to **Figure 6** for location). The three islands and six atolls that make up Tuvalu stretch for just 579 km (360 miles) and measure approximately 25 km2 in total land area. The capital of Tuvalu is the entire atoll of Funafuti, where the airport is located.

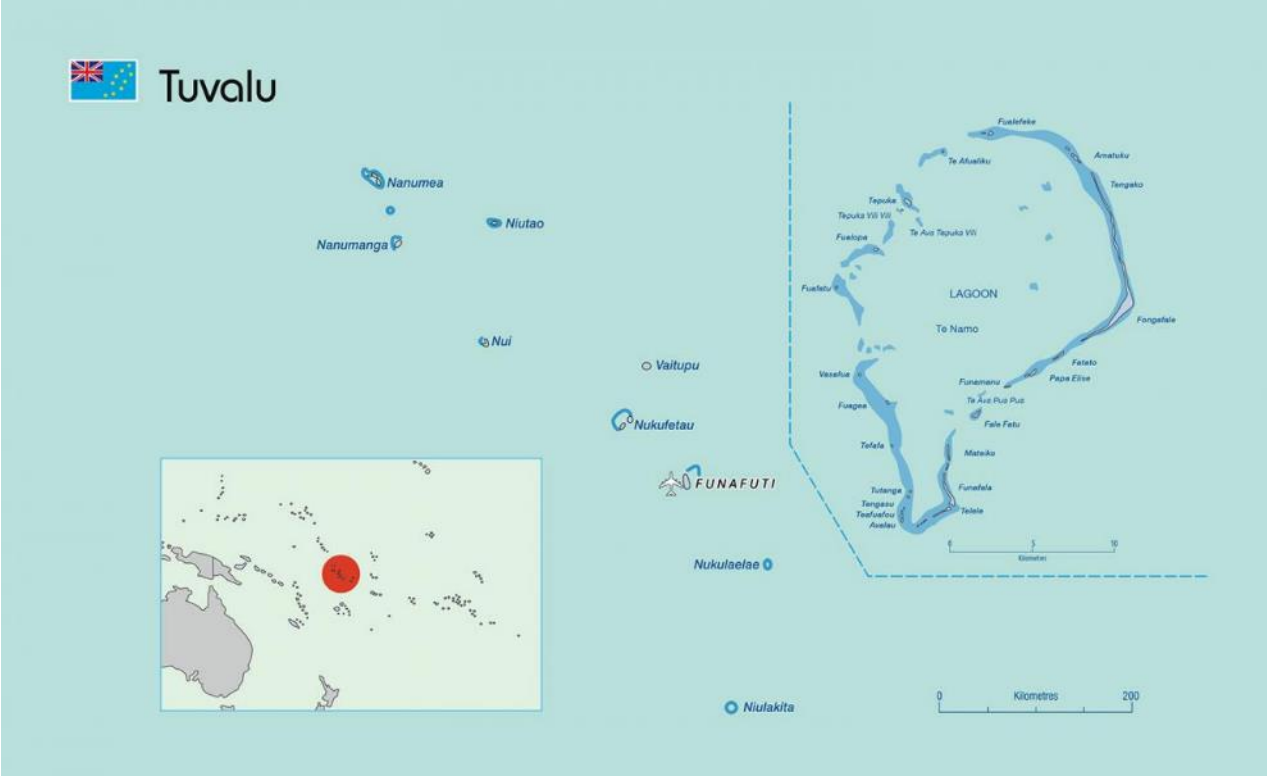


Figure 6: Tuvalu location with Funafuti International Airport shown

Funafuti measures between 20 and 400 metres wide, encircling a large lagoon. The land area of the 33 islets of Funafuti aggregates to 2.4 km². The airport is located on Fongafale islet in the village of Vaiaku on the eastern side of the atoll. The eastern side of the atoll is also where the majority of landmass is, and population reside.

On the western side of the atoll is the Kogatapu Funafuti Conservation Area, approximately 17 km west of the airport site, across the lagoon. The conservation area was established in 1996, and covers 33 km^2 of reef, lagoon, channel, ocean and islands habitats. There are six uninhabited islets with native broadleaf forest (approximately 40% of the remaining broadleaf forest on Funafuti) and coral sand beaches within the protected area and are home to coconut crabs, nesting seabirds and turtles. A variety of colorful fish can easily be seen through the clear blue lagoon.

5.1.2 Funafuti International Airport (FUN)

Funafuti Airport was built by a detachment of the 2nd Naval Construction Battalion (Seabees) of the United States Navy in 1943 during World War II. The airfield became the headquarters of the United States Army Air Forces VII Bomber Command in November 1943, which directed operations against Japanese forces on Tarawa and other bases in the Gilbert Islands. The USAAF stationed two B-24 Liberator heavy bomber groups, the 11th Wing and 30th Bombardment Groups on Funafuti in the implementation of Operation Galvanic, which led to the Battle of Tarawa and the Battle of Makin in November 1943.

By the middle of 1944, as the fighting moved further north toward Japan, the Americans began to withdraw. By the time the Pacific War ended in 1945, nearly all of them, with their equipment, departed. After the war, the military airfield was developed into a commercial airport.

The runway was originally constructed using coral aggregate and has a sub-base layer of 8 cm thick coral gravel, surfaced with a 1–2 cm asphalt chip seal. It was resurfaced in 1992 and the runway was rated at 50 tonnes landing capacity; it was reduced to 20 tonnes landing capacity due to sub-surface water, deterioration of the sub-base and lack of surface maintenance. However, the runway was resurfaced in 2015 so that the pavement would be re-rated.

The original deterioration of the runway's sub-base was a consequence of its low elevation and the hydrologic dynamics in the sub-surface of the atoll. There was extensive swamp reclamation during World War II to create the airfield. About half of Fongafale islet is reclaimed swamp that contains porous, highly permeable coral blocks that allow the tidal forcing of salt water through the sub-base of the runway. This results in saltwater pooling on the runway during spring tides.

The airport is somewhat unusual in that due to limited space on the island, the runway is used as a common area for sporting and social activities when it is not in use. Sirens sound when a plane is about to land, warning residents to stay off the runway.

5.1.3 Land Use

Land availability in Funafuti is limited and infrastructure has encroached into the runway clearance zone (e.g., roads). The south-eastern side of the runway is primarily Government owned land with the meteorological services, Public Works Department (PWD) compound, the prison, the sports field, the power station, demonstration gardens (funded by The Republic of China (Taiwan), and private pig farms on leased land. The north and south-western side of the runway is dominated by residential houses and a small number of commercial properties and is a mix of Government and privately owned land. The north-eastern end of

the runway is the ocean side of the atoll. There is also a brackish pond adjacent to the north-eastern tip of the runway (Tafua Pond) which was partially infilled when the runway was first constructed in 1942.

As stated in the Resettlement Policy Framework "The Funafuti airport land is leased from private owners and there has not been any dispute or anticipated dispute on this arrangement. Improvements are planned within the current airport boundaries. Clarification of the term and conditions of leases, and the ownership, management and eventual disposal of any investments or improvements on the land is not expected to result in any land acquisition or displacement."[5] The GoT had successfully renegotiated a new lease for the airport land from 2020 for the next 50 years.

5.1.4 Climate

Funafuti has a tropical climate with temperatures directly related to the ocean temperature and do not vary greatly from an average high of 31 ºC and an average low of 25 ºC. The wettest months are usually between November and April with the annual rainfall on Funafuti reaching over 3,000 mm, averaging over 200 mm per month.

Wind direction is usually north easterly and average wind speeds are between 24 and 32 kph.

The tropical cyclone season in Tuvalu is from November to April. Occurrences outside this period are rare. On average Tuvalu experiences eight tropical cycles per decade[6]

5.1.5 Soils and Geology

Funafuti is a coral atoll and as such the surface soils are derived from limestone which is the result of coral reef deposits. Soil quality and saltwater contamination of the underlying freshwater lens has meant that intensive horticulture is not possible. Produce tends to be grown in raised garden beds in topsoil. The increase in compositing activities (from coordinated village compost schemes to the household compositing toilets) has meant the use of soil improvers to supply necessary nutrients to the soil.

While generally limestone derived soils tend to be highly porous, in the more densely populated areas of Funafuti compaction of the soil, particularly on road verges and on the heavily trafficked side of the runway, causes localized flooding during heavy rainfall events.

Mangrove replanting programmes are also underway on Funafuti to help with sand retention and buffering the effects of erosion and storm surges. The construction of the runway in 1943 using aggregate dug up from within the Fongafale landmass has left large pits that fill with sea water during king tides (usually in February and March). These pits have become dumping areas for rubbish and other waste posing significant health risks.

5.1.6 Water Resources

The lagoon is the largest in Tuvalu measuring 24.5 km by 17.5 km, with an area of 275 km². Some atolls have freshwater lenses underlying the landmass that sit on top of underground salt water (Figure 7). Funafuti's

[5] Resettlement Policy Framework (RPF), TUSRAP, 2013

[6] Pacific Climate Change Science, 2013. Scientific Assessment and New Research: Volume 2: Country Report, Chapter 15: Tuvalu

freshwater lens is no longer a viable source of freshwater for the community due to pollution and saltwater intrusion. The community rely on rainwater harvesting and three desalination plants.

During the construction phase the Contractor will be responsible for securing a water supply which does not adversely affect the community's freshwater reserves (e.g., their own mobile desalination plant and additional rainwater harvesting). There is no reticulated water supply to households.

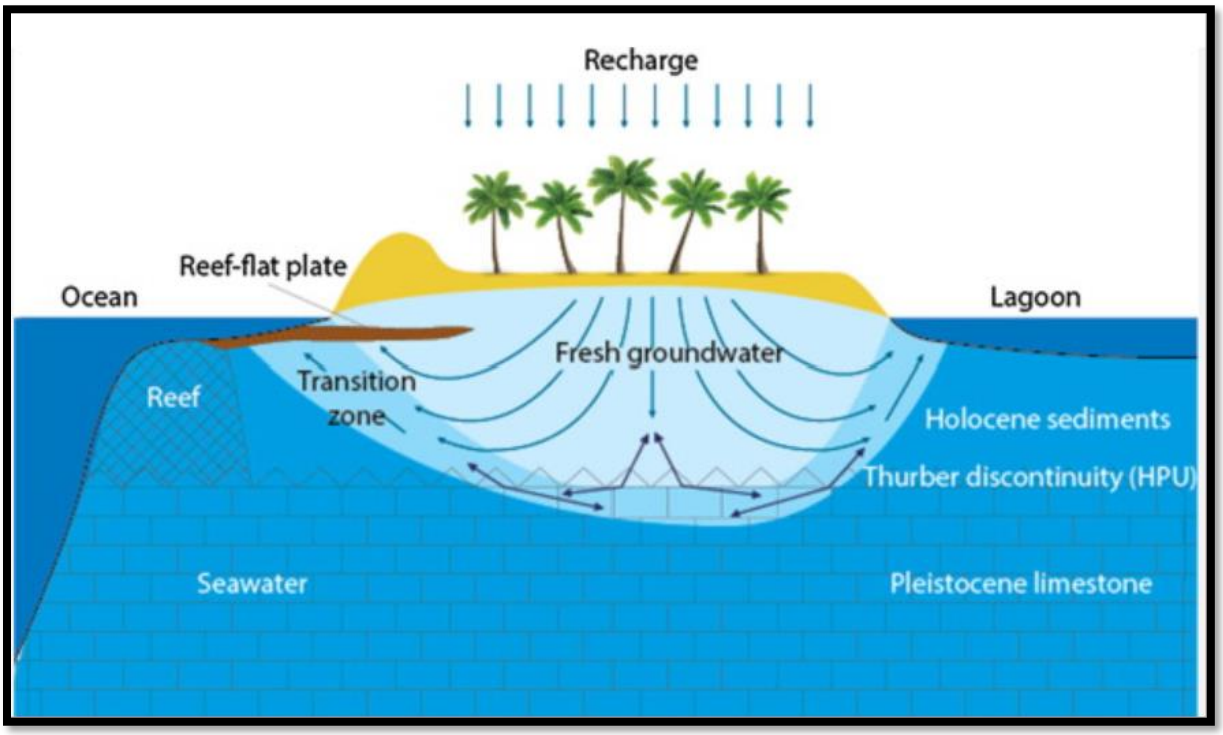


Figure 7: A demonstrated typical island cross section showing the freshwater lens below reef islands.

The sea-level rise increase recorded for Tuvalu is approximately 5mm per year since 1993, which is more than the recorded 2.8-3.6 mm/year estimates on a global level.[7] Current research suggests that there is a correlation between water table levels and the sea tidal fluctuations. This is clearly evident during Spring tides and when "king tides" are prominent anytime of the year based on lunar cycles. As seen in the photos below, the higher tidal levels during these times increase the levels of groundwater permeation and water vapor at ground level, which in turns, exacerbates blistering and depressions on local roads and on the FUN runway (e.g., flooding, Figure 8).

[7] Australian Bureau of Meteorology and CSIRO, 2011 Climate Change in the Pacific: Scientific Assessment and New Research. Volume 1: Regional Overview. Volume 2: Country Reports.

Figure 8: Flooding near FUN runway

5.2 Biological Environment

5.2.1 Marine Biodiversity

The marine environment provides the main local source of protein and the major natural resource base for economic exploitation, both for local use and through foreign licensing agreements with foreign fishing nations. Exploitation at the local level is mainly for subsistence use. A review of the conservation area in 2003 found an abundance of large sized fish of target food species indicating that either the biomass of the conservation area was spilling over to the rest of the lagoon or that the fishing pressures throughout the lagoon are relatively low.

About 75% of the fish landings in Tuvalu are ocean species, predominantly two species of tuna - skipjack and yellowfin. The remainder is made of reef and lagoon species, with smaller amounts of bottom fish from deep slope areas. From census data it has been determined that 74% of households in Tuvalu participate in reef fishing and 63% in ocean fishing (2002 census data).

The 2009 Tuvalu National Biodiversity Strategy and Action Plan identified the crown-of-thorns starfish (*Acanthaster planci*) as an emerging threat which was introduced into Tuvaluan waters through discharge of ballast water and other carrying water cargos. Coral bleaching is also on the rise which is caused by a rise in water temperature (can be less than 1 ºC).

5.2.2 Terrestrial Biodiversity

Funafuti is a narrow, densely populated landmass which has undergone significant anthropogenic changes. Coconut, breadfruit and pandanus dominate the landscape as do pawpaw and other food species. The vegetation has been affected by the contamination of the freshwater lens with salt water and subsidence

crops require careful cultivation and application of compost and nutrients to sustain the crops. In Tuvalu nearly 65% of the flora is not native. The swamp taro is the traditional source of carbohydrate in the Tuvalu diet. As swamp taro is grown in pits so it is particularly susceptible to the effects of saltwater intrusion into the high-water table.

5.2.3 Conservation Areas on Funafuti

There are currently no official conservation areas in the vicinity of the airport however the Tree Care Project has a demonstration plot north of the terminal between the Airport Road and Tuvalu Road, west of the Runway. The plot is a pulaka (swampy taro) pit rehabilitation site to reduce land degradation.

Figure 9: Tree Care Project and Sustainable Land Management demonstration plot near the terminal (between Airport Road and Tuvalu Road).

5.2.4 Rare or Endangered Species

The 2008 International Union for Conservation of Nature (IUCN) Red List identified a total of 84 species in Tuvalu which are threatened. None of the species identified are endemic and no species have been identified as extinct. A total of 461 species were assessed and 1 bird, 2 mammals, 8 fish, 72 invertebrates and 1 reptile species were identified as being threatened. The IUCN regard the threatened status of animals and plants as one of the most useful signs for assessing the condition of an ecosystem and its biodiversity. The IUCN Red List of Threatened Species™ (IUCN Red List) is widely recognized as the most comprehensive, apolitical approach for assessing and monitoring the status of biodiversity. The green sea turtle, hawksbill turtle, bay shark, and the leatherback turtle are endangered.

As stated, the location of the airport is not near any conservation areas and is located within the most developed area of the country. However, there is still potential for activities carried out in relation to this project to encounter a threatened species. Mitigation measures to deal with these encounters have been identified in Section 8 of this PESMP.

5.3 Socio-economic Conditions

5.3.1 Population and Demographics

The Tuvalu Central Statistics Division estimated the 2022 national population at 9,696 with 6,101 people residing in Funafuti. The 2002 census reported the population of Funafuti as 6,691, comprising 3.451 males and 3,160 females.

5.3.2 Education and Health

School attendance is compulsory from age 7 to 15. On Funafuti, there is one government primary school (Nauti Primary School), one Seventh Day Adventist primary school, and one high school run by the Church of Tuvalu (Fetuvalu High School). Nauti Primary School is located approximately 390m northwest of the northern end of the airport runway on Fogaafale Road and in 2007 had an enrolment of 725 (Tuvalu Central Statistics Division) and Fetuvalu High School is located approximately 4.4 km north of the airport on Tuvalu Road (2.5 km north of the port) and in 2017 had an enrolment of 1,141 (Tuvalu Central Statistics Division).

Tuvalu has 18 pre-schools or early childhood learning centers. The Vaiaku Pre-school (early childhood learning centre) is located on Airport Road approximately 35 m from the edge of the runway pavement on the north-western side.

Life expectancy at birth is 63.6 years. Funafuti boasts the only hospital in Tuvalu, the Princess Margaret Hospital on Fogaafale Road approximately 430 m northwest of the northern tip of the airport runway. Tuberculosis appears to be on the rise (WHO Country Profile, 2011) however this could be due to the improved testing facilities and diagnostics. A filariasis (roundworm) mass drug administration and deworming programmes are in place.

Diseases like dengue and typhoid fever occur from time to time. Education programmes are in place for food hygiene, water purification through boiling and nutrition.

5.3.3 Livelihoods and Economic Activities

Tuvalu's economy suffers from problems of geographic isolation, few resources, and a small population. The country has no known mineral resources and few exports. Subsistence farming and fishing are the primary economic activities. The islands are too small and too remote for development of a large-scale tourist industry. Income from fishing license fees, remittances, surpluses from the Tuvalu Trust Fund (an international sovereign wealth fund established in 1987 by the United Kingdom, Australia and New Zealand), and rent of its "dot.tv" internet domain are highly variable. There is a high reliance on imported goods, as there is very little manufacturing on the island due to the lack of resources and water. Some marine resources and coconut products are exported but most people derive income from Seamen and family members working overseas through remittances sent to their families. The 2010 Household Income and Expenditure Survey reported the average monthly household consumption expenditure as AU$1,331 for inhabitants of Funafuti, compared to the average monthly household income of AU$1,364 for Funafuti households. Approximately 90% of Funafuti households reported earning wage and salary income.

5.3.4 Waste Management

Household rubbish is stored in 120-liter domestic waste bins. Households that pay annual waste collection fees are provided with weekly waste collection services by the Funafuti Kaupule, which operates two open-bed collection trucks. In 2012, around 640 out of an estimated 800 households in Funafuti received waste collection services, representing a collection ratio of around 80%.[8] The DWM maintains large, communal waste bins at selected sites around Funafuti, along the main roads, and outside all community meeting halls for people to dispose of wastes. Household and commercial wastes collected by the Funafuti Kaupule and DWM, except for green waste, are transported to Funafuti's one official dumpsite for disposal. The main dump is a borrow pit, located on a strip of land 20 meters wide next to the main road, at the northern end of the island. DWM is responsible for managing the island's dumpsite.

DWM has not been compacting or covering wastes at the dumpsite for some time. As the pit has become full, rubbish is instead piled along a 1-kilometer stretch of the adjacent road. With assistance provided by the EU, the dumpsite is being rehabilitated; and improved management practices are being introduced to extend the life of the disposal facility beyond 2025. A fence has been constructed to contain wastes at the dump; and equipment, including an excavator and loader.

5.3.5 Land Tenure and Rights

The land tenure system is largely based on kaitasi (extended family ownership) making land availability for business development restrictive. On Fongafale, it is prohibited to build a house or extension to an existing building even on private land unless approved by the Funafuti Kaupule in cases of privately-owned lands, and by the Lands Management Committee in cases of lands leased by Government. This helps to control vegetation clearance, beach mining (for construction material) and density.

As mentioned in section 5.1.2, The south-eastern side of the runway is primarily Government owned land and private pig farms on leased land. The north and south-western side of the runway is dominated by residential houses and a small number of commercial properties and is a mix of Government and privately-owned land. We see a number of private lodges and accommodations, daycare center, Fale Kaupule, and government properties such as the Prime Minister and Deputy Prime Minister residences. Any open areas are used for local crops for personal subsistence.

5.4 Projected Climate Changes and Impacts

The Pacific Climate Change Science Program (PCCSP) (part of the International Climate Change Adaptation Initiative) conducts critical climate research and capacity building in Pacific Island countries. Information regarding climate change projections was obtained from the ABoM and CSIRO (2011) Climate Change in the Pacific: Scientific Assessment and New Research (Vol. 2: Country Reports) produced by the Pacific Climate Change Science Program.

Tuvalu, like many other pacific atoll nations are already experiencing the effects of increased temperatures and rising sea level. Sea level (measured by satellite altimeters) has risen by an average of 5 mm per year

[8] Solid Waste Management in the Pacific, ADB, 2013

since 1993. Sea level does fluctuate throughout the year, peaking in February and March, particularly during La Nina years which tend to record warmer ocean temperatures. The annual mean air temperature (since 1950) has increased by approximately 0.24 ºC per decade. Annual and seasonal rainfall trends have not shown any significant trends (1950 to 2009).

Lin and Cheng (2014) suggest that there is an array of issues that TUSRAP will need to consider when it comes to fully understanding the issues with the FUN runway such as:

- Oceanic patterns
- Sea level fluctuations including “king tides”
- Frequency of storms

As climate change impacts such as sea-level rise continue to increase over the years, Tuvalu and FUN Airport must seek to find innovative solutions to mitigate the impacts of ongoing sea-level rise. As suggested by the UniServices report, heavy rainfall when coupled with the high tides, potentially acts as a trigger to the depressions and blistering of the FUN runway

Climate change projections for 2030, 2055 and 2090 (relative to 1990) are provided below. The PCCSP report (as identified above) reviewed a number of climate projection models to determine the most plausible representations of future climate in the pacific under the three emission scenarios developed by the Intergovernmental Panel on Climate Change (IPCC). The three emission scenarios are: low (B1), medium (A1B) and high (A2), for time periods around 2030, 2055 and 2090 (refer to Figure 10).

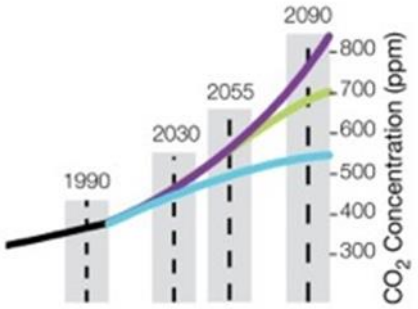


Figure 10: Carbon dioxide (CO2) concentrations (parts per million, ppm) associated with three IPCC emissions scenarios: low emissions (B1 – blue), medium emissions (A1B – green) and high emissions (A2 – purple). The PCCSP has analyzed climate model results for periods centered on 1990, 2030, 2055 and 2090 (shaded). Source: PCCSP, 2011. Current and future climate of Tuvalu Brochure. Tuvalu Meteorological Service, Australian Bureau of Meteorology and CSIRO.

Error! Reference source not found.1 below shows the projected changes in annual average air temperature and sea level for Tuvalu for the three emission scenarios and the three-time horizons. Sea level rise should be considered when establishing the design terminal floor levels, in conjunction with the intended design life and appropriate freeboard requirements.

Table 1: Air temperature and sea level rise projections for the three emission scenarios and three time periods.

Annual Average Air Temperature Projection	Sea Level Rise Projection
Values represent 90% of the range of the models and changes are relative to the average of the period 1980- 1999.	

	2030 (°C)	2055 (°C)	2090 (°C)
Low emissions scenario	0.3–1.1	0.7–1.5	0.9–2.1
Medium emissions scenario	0.4–1.2	1.0–2.0	1.5–3.1
High emissions scenario	0.4–1.0	1.0–1.8	2.1–3.3

	2030 (cm)	2055 (cm)	2090 (cm)
Low emissions scenario	4–14	9–25	16–45
Medium emissions scenario	5–14	10–29	19–56
High emissions scenario	4–14	9–28	19–58

Source: PCCSP, 2011. Current and future climate of Tuvalu Brochure. Tuvalu Meteorological Service, Australian Bureau of Meteorology and CSIRO.

In the short term (2030) the climate models prediction for rainfall do not increase (or decrease) significantly, however by 2090 it is expected that rainfall will increase. There is only moderate confidence in the model's prediction. There is high confidence that the intensity and frequency of extreme rainfall days are projected to increase.

6 Consultation and Stakeholder Engagement

6.1 Background and Approach

As required by WB ESF consultation and disclosure of Moderate risk projects must be undertaken with project affected groups (stakeholders) and non-government organizations (NGO).

The potential environmental and social impacts of the project require discussion and review by project stakeholders during the environmental assessment/ PESMP process to provide key inputs to detailed design and mitigation measures. This PESMP will be updated with details of future consultations and disclosures. Disclosure and consultation will be the responsibility of TUSRAP PMU. The key project stakeholders and outcomes are shown in Table 2.

During construction, the Contractor is required to undertake consultations on the development of the Traffic Management Plan and before commencement of works.

The Contractors scope for undertaking these future consultations for the project is as follows:

- Develop the stakeholder matrix and engagement plan to identify all parties and appropriate consultation mode (e.g., interviews, focus group meetings, public meetings) for the respective stakeholders.
- Consult with institutional stakeholders to ensure a whole of Government approach to the project development. This will ensure that the project plans and communication documents presented to the wider stakeholder group (e.g., local community) take into account and optimize other Government plans and priorities.
- Schedule consultation with stakeholders according to the most suitable communication method and involve members of the project delivery team (e.g., design engineers, E&S risk management specialists) as required and dependent on the level of information required by the stakeholder group.
- Liaise with PMU to schedule training for SAE, GBV and CAE as per the requirements of the GBV Action Plan (section 5 of Appendix F)
- Document all consultation including:
    - Manner in which notification of the consultation was announced: media(s) used, date(s), description or copy of the announcement.
    - Date(s) and location(s) consultation(s) was (were) held.
    - Invitation and attendance lists. (Name, Organization or Occupation, Telephone/Fax/e-mail number/address (home and/or office).
    - Meeting agenda/ program/ schedule including list of presenters and discussion topics.
    - Summary meeting minutes (comments, questions and response by presenters), actions and decisions.
    - Collate and assess all consultation outcomes in a report to feed into subsequent development of the PESMP, CESMPs and detailed designs.

Table 2: Key Project Stakeholders and Outcomes

Stakeholders	When	How	Outcome
MTET	Prior/during/after start of asphalt plant construction.	Face to face meeting Written communication	Agreement on deliverables, timing and process. Reporting process, content and timing.
Airline operator (Fiji Airways, and Air Kiribati)	As above	Face to face meeting Written communication e.g. email, letter, etc.	Clarified needs of only airline operating in Tv to incorporate in work programming. Advance notice of work schedules.
Department of Environment and other relevant agencies	As above	As above	Submission/secure approval of required government permits.
Fale Kaupule	As above	Consultation Project information leaflets/posters	Informed of work program including potential impacts such as noise, dust and traffic management. Information on GRM process and timing.
Communities around the runway	As above	As above	As above
Tuvalu National Council of Women and other CBOs	As above	As above	As above
General public	As above	As above	As above

Key stakeholders have been and will continue to be invited to attend SAE, GBV and CAE training provided by the Fiji Women's Crisis Center. Section 6.2 below summarises trainings already given as part of the project to date.

6.2 Consultation to Date

Under the previous TvAIP here have been four public consultations to date:

- September 2011, Initial PESMP for TvAIP
- October 2013, focus on road rehabilitation
- July 2017, additional funding for runway repairs
- 10 July 2019, asphalt plant and stockpile site selection

A site consultation was held at the TUSRAP (formally TvAIP) office, Funafuti on 10 July 2019. Participants included Government departments to identify options and agreement on preferred option for the asphalt

plant and stockpile site. The PESMP was subsequently amended based on recommendations and suggestions provided by consultation participants.

This consultation guided the project in selecting the preferred laydown site option for the asphalt plant and materials stockpile. Due to land restrictions, the asphalt plant and materials stockpile locations need to be separated. Multiple sites for the construction camp (including asphalt plant) had been identified sites, discussed and rejected for a variety of reasons (technical and/or E&S risk management) and likewise for stockpile sites. Consultations and investigations over many months finally identified the sites in **Figure 4**4 as the only permittable sites that the Contractor is able to use.

As part of the previous TvAIP requirements under the GBV Action Plan (Appendix F), Fiji Women's Crisis Centre (FWCC) provided psychosocial counsellor training to a selection of key stakeholder representatives in Tuvalu over 2 weeks in November 2017[9]. The 24 participants were strategically selected from government departments and civil society organisations where survivors currently go to seek assistance. The aim of the training was to strengthen the capacity to support gender-based violence survivors in Tuvalu by establishing trained counsellors that can provide psychosocial counselling services to women and children survivors of violence. Another objective was to have women in leadership positions such as teachers, church minister's wives and government officials recognize gender inequality as a cause of SAE, GBV and CAE in Tuvalu.

6.2.1 Previous Runway Works (2017)

A project consultation was held at the Pelesepa Maneapa Hall located across the street from the Government of Tuvalu building on 26 July 2017. The Consultations included Government, WB Liaison for Tuvalu, NGOs, Churches, Businesses surrounding the runway, Women Groups, Village Council Leaders, and the TvAIP team. The PESMP was subsequently amended based on recommendations and suggestions provided by consultation participants. Outcomes and suggestions are well documented within the overarching PESMP and have been transferred into this updated PESMP.

The TvAIP Consultation team gave an overview of the PESMP and focused on the additional funding for drainage including options as outlined by the Auckland UniServices report. Also discussed were environmental and social impacts from additional works. During the question-and-answer session the team was able to answer the timeline of the additional funding, availability of the updated PESMP, and confirm the GRM process to file a complaint or grievance as noted in consultations minutes. (Annex E).

To note, the Funafuti Council Leader reminded the TvAIP team at the time that the runway was built on leased land and the lease will expire in September 2017. The Council Leader was referring to the Memorandum of Agreement (MOA) entered into between the Landowners and the Government of Tuvalu as an interim land lease agreement to allow Government to proceed with Runway upgrade work. The MOA will expire in September 2017. An Abbreviated Resettlement Action Plan (ARAP) was completed in April 2015 addressing this very issue. It was advised that the TvAIP and the Government of Tuvalu were working

[9] TUSRAP AF III: Fiji Women's Crisis Centre (FWCC) Gender Based Violence (GBV) and Violence Against Children (VAC) Psychosocial Counsellor Training Outcomes Report, December 2018

with effected landowners to ensure a new lease is completed by September 2017. (Update Note: As of July 2021, this new lease has now been signed by all parties)

6.3 Disclosure

Disclosure does not equate to consultation (and vice versa) as disclosure is about transparency and accountability through release of information about the project. The TUSRAP PESMP will be made available on the WB website, and in hard copy at the TUSRAP PMU office near the airport

6.4 Sensitive Receptors

Fongafale is densely populated with little available landmass for expansion and so homes, schools and the hospital are located very close to the roads and airport runway. Homes, schools (including pre-schools), and hospitals are categorized as sensitive receptors where people can be more susceptible to the adverse effects of exposure, like to traffic (safety), noise, dust and vibrations. Sensitive receptors do not usually include places of business or public open space.

The key sensitive receptors that have been identified for planned activities are:

- Seventh Day Adventist primary school
- Vaiaku Pre-school on Airport Road
- Residential homes along the length of the runway.

7 Environmental and Social Impacts

7.1 Overview of Impacts

The TUSRAP scope is to rehabilitate the existing runway and apron. New land acquisition is not required, and the project is unlikely to cause any major negative environmental or social impacts as the work is improving existing infrastructure. The social outcomes of the TUSRAP are expected to be positive by improving safety, accessibility and mobility of island communities. No land acquisition is required thus no physical resettlement will be necessary.

Possible negative impacts related to the airport and road upgrade are expected to be confined to the construction phase. Public notices and consultation with affected people will continue throughout the project. Where appropriate warning notices and project bulletins will be posted informing the community when particular stages are to be completed and opportunities for involvement, whether through employment, collection and reuse of demolition materials or if there are complaints. With timely and proper implementation of this PESMP and application of appropriate mitigation measures, most if not all the potential negative impacts can be prevented or minimized. These impacts are expected to be limited to the following impacts, however this PESMP is a dynamic document and any changes in design or construction methodology may result in a reduction of impacts or additional impacts that will require mitigation.

7.2 Environmental Impacts

7.2.1 Solid Waste

Scarification, replacement of unsuitable pavement material, clearing of old terminal and control tower buildings would lead to the generation of excess soil, asphalt, basecourse, concrete and building debris waste. Funafuti has recognized waste management as a significant problem which the community and Government are struggling to overcome. Implementing reuse and recycling opportunities are paramount (and to be emphasized in the CESMP) as are the removal off island of any unusable waste (including hazardous waste) at the end of the project. The island cannot manage the potential level of waste generated from the demolition and construction activities.

The Contractor will develop a Solid Waste Management Plan (SWMP) to be submitted as part of the CESMP for clearance by the WB. At all times, the Contractor is responsible for the safe and sound disposal of all solid waste generated by the Works.

The SWMP should, as a minimum make provisions for the following:

- No landfill in Tuvalu will be used for project waste
- Describe the solid waste streams generated by the works along with estimated quantities.
- Develop a plan for safe storage and handling of waste stored on the project site as per the stipulations in this PESMP.
- Identify approved service providers for collection and disposal of waste and stipulate conditions of carriage.
- Detail the approved disposal methods along with appropriate permissions.

- Contractor shall determine an approved site for the disposal of organic biodegradable waste in a suitable facility which is equipped to safely handle this type of waste.
- Recyclable waste may be supplied to a local receiver licensed to process such waste.
- Contractor to identify shipping route and licensed disposal facilities for all exported waste.
- Contractor to identify any export permits or conditions for export of waste.
- Contractor shall determine a Department of Environment- approved site for the disposal of organic biodegradable waste in a suitable facility which is equipped to safely handle this type of waste.
- Identify those persons responsible for implementing and monitoring the SWMP.

All other waste is to be disposed of OFFSHORE in permitted or licensed facilities. It is the Contractor's responsibility to obtain all necessary permissions for transport and safe disposal of hazardous waste from the project site in a legally designated hazardous waste management site within the country or in another country, and to ensure compliance with all relevant laws. Evidence will need to be supplied to the PMU's Consulting Engineer of proper disposal of waste at the final location.

The export of any hazardous waste must be in compliance with the Basel and Waigani Conventions and any relevant laws enacted by source and the recipient countries.

Most of the clean fill material can either be used to backfill areas where old equipment or infrastructure has been removed or as a resource (e.g., crushed asphalt and basecourse material) for general use by MTET or PWD and the community. Clean fill materials which are not able to be reused within the timeframe of the project implementation shall be transported to a location approved by the PWD to be stored for future use by the Department. This location shall also be subject to approval by the. Employer's Engineer. These materials shall be removed from the site area and safely disposed of in compliance with any local requirements at the Employer's nominated disposal site(s) and/or disposed of at the Contractor's quarry site(s), before the start of the defect's liability period.

Allow for re-use of as much material as possible either within the TUSRAP, other projects, or for community use. Funafuti Kaupule and the island recycling business should be consulted to determine if materials or waste can be recycled within the community. The recycling of construction materials will be at the discretion of the PWD.

When planning the construction Camp ensure temporary waste dump areas are allowed for and approved waste disposal sites / methodologies identified for removal of all solid waste.

As early as possible in the pre-construction preparation phase suitable receiving waste facility(ies) should be identified and agreements put in place to transport (trans-boundary) remaining project waste from Tuvalu.

Unless otherwise instructed by the Employer's Engineer, other surplus materials not needed during the defect's liability period shall be removed from the site and the country.

The export of waste to another territory transfers the potential solid waste impacts (e.g., air, land and water pollution), therefore careful due diligence of the receiving waste facility is required to ensure the facility is a licensed operation (under the receiving country's legislation) and that it is managed according to best operational management practices. The trans-boundary movement of waste can also cause pollution at sea if the waste is not properly packaged and prepared for transport.

7.2.2 Water Resources

Freshwater will be required for some construction activities (e.g., dust suppression, and concrete and bitumen production). The impact on current water supply could be major if not properly mitigated through good resource planning. Water efficiency, conservation and reclamation practices will be adopted, for example use of local rainwater collection.

7.2.3 Biological Resources

The TUSRAP will rehabilitate and upgrade the existing infrastructure. The airport is located within an area of Fongafale which is densely populated and developed. Anthropogenic changes have already occurred. It is not anticipated that there will be any further loss of habitat or disturbance that is not short term (e.g., related to the construction phase).

Mitigation measures will include liaison with the Department of Environment should any fauna (reptile, avian, or mammal) are encountered that affect construction activities (e.g., nesting bird).

7.2.4 Hazardous Materials

The use and storage of hazardous substances during construction can impact on physical soil and water resources if they accidentally spill or leak into the environment and if hazardous materials are not properly disposed of. There are several project activities which could generate soil and/or water pollution from hazardous substances or materials.

Bitumen, fuel and lubricants will be needed during construction activities. If not properly stored or handled (taking into account known tidal inundation of asphalt plant area), this could result in run off into the local soil or apron drainage systems which feed directly into the rivers and coastal environment.

Wastewater and slurry from concrete production will have a high pH level making it alkaline and also contains chromium. Highly alkaline water can result in the death of marine organisms should it enter the marine environment. There are also impacts associated with concrete wastewater leaching into the ground water and causing contamination.

Should an emergency event occur there is also potential for a discharge of hazardous substances to the environment or the use of fire retardants during firefighting.

7.2.5 Noise and Vibration

Noise and vibration disturbances are particularly likely during construction related to the transportation of construction materials from the port, operation of equipment (e.g., milling of pavement surface) and asphalt plant. There may be ongoing instances that work may be conducted in the evening hours. If evening work is likely, consultations and meetings with the effected communities should be conducted and options should be addressed.

Impacts will be short-term and affect different people at different times. Impacts include noise during pavement resurfacing and possible effect of vibration caused by operation of heavy machinery and asphalt plant. Due to the land constraints on Funafuti residential houses and businesses are located adjacent to the airport. Therefore, noise and vibration are likely to be an ongoing issue throughout the construction stage.

At the operational phase of the project local residents have expressed concern regarding noise and fumes from aircraft, particularly if the frequency and number of flights were to increase. The scope of work for the TUSRAP is general maintenance and improvement with a view to ensuring the continued operation of the airport and road, not increasing capacity and frequency of flights or vehicle traffic. Thus, there will be no increase in noise or vibration levels during operation and only potentially small decreases due to improved pavement surfaces.

7.2.6 Air Emissions

Air pollution can arise due to improper maintenance of equipment, dust generation and the bitumen smoke / fumes arising from application of the pavement overlay and maintenance work. Impacts are expected to be localized and short term with only minor negative impact on the ambient air quality in the vicinity of the construction areas. No ongoing impact to air quality is expected as this is rehabilitation of existing infrastructure. Fongafale is densely populated, while air quality impacts are likely to be short term they will affect more people, particularly when construction work is near sensitive receptors.

7.2.7 Traffic and Airport Operations

Landside traffic impacts will occur in transporting equipment and materials from the port and for equipment and aggregate delivery. Impacts from project traffic is linked to vehicle and pedestrian safety, public highway condition, and dust generation along the route.

The identified haulage route passes through urban and commercial areas along the road from Funafuti Port to the airport site. There are sensitive receptors along the road in the form of schools and churches.

Any traffic impacts will mostly be short-term and through good mitigation and traffic management the impacts should be low. Upon completion of the construction phase of works, traffic and road safety impacts caused by the works should cease.

7.2.8 Wastewater Discharges

Sanitary facilities for workers will be in the laydown area to prevent the contamination of water bodies or other areas of use. Once the location of the basecamp and other supporting facilities (including the sanitation facilities) are determined, water quality monitoring of nearby water bodies will identify potential wastewater impact. Specification of sanitary facilities will be at the advice of Department of Environment and defined in the CESMP.

Uncontrolled wastewater (e.g., sewage, grey water, wash water, water containing fire retardants used during emergency activities) discharges have the potential to contaminate soil, water and spread disease.

Wash water from equipment can be contaminated with hydrocarbons (e.g., oil and fuel) which have a detrimental effect on aquatic life, water quality and soil quality. There are also human health impacts regarding hydrocarbon exposure which vary in severity depending on type and length of exposure.

Wash water from concrete processing and cutting is highly alkaline and can burn vegetation, result in fish kills and also cause burns to the skin. Sediment loads in wash water if allowed to discharge to either marine or freshwater systems can also adversely impact aquatic life and water quality.

7.2.9 Biosecurity

All aggregate material and equipment will need to be imported as there are very limited natural resources available in Tuvalu. Imported aggregate and equipment can harbor plant and animal species which may pose a threat to Tuvalu's biodiversity and ecosystems. The aggregate can also be a source of contamination from pesticides and other harmful substances which can pose short and long term environmental and public health risks.

7.2.10 Coastal and Marine Environment

A number of activities have the potential to adversely affect the marine and coastal environment, including uncontrolled discharges (e.g., stormwater, wastewater, spills). Impacts range from destruction of habitat and natural protection (e.g., the boulder bank), to reduced or contaminated water quality and loss of aquatic life due to pollution.

7.2.11 Soil erosion

Minimize erosion and design erosion protection measures according to international good practice standards, including incorporation of effective drainage systems (soakage pits) and consideration of surface flow paths. Wherever feasible, schedule excavation works for the dry season months (May to October) Develop Contingency Plan for works to allow for anticipated construction start date during the wet season. Contingency Plan must detail soil erosion prevention measures in event of storm or heavy rain event. Schedule earthworks and construction activities outside of wet season, which is usually between November to April.

7.2.12 Water and Soil Pollution

Soakage pits should not be installed directly into a shallow aquifer. Oil water separators should be included to treat runoff from the apron area of the terminal. Minimize risk to groundwater and surrounding soil by developing a spill response plan and provide training to all contract workers on how to implement the spill response plan. Precautions should be in place to prevent wastewater and hazardous substances or materials entering the environment (e.g., fuel spillage, wastewater containing fire retardant during firefighting), The spill response plan should include factors associated with both the construction and operational phases and should be available at all TUSRAP locations. Ensure bunded areas and hard stands are allocated at construction lay down area for the storage of fuel, lubricants and other potential substances required for the project. Watertight bunds to be able to contain 110% of volumes being stored or 25% if total volume greater than 1,000 L. Ensure wash down areas with respective collection and treatment systems are designated within the construction camp (e.g., settling pond or tank and concrete slurry treatment) prior to works commencing. Sanitation treatment system (e.g., removal of waste to landfill, compost or proprietary treatment system) is approved by the DWM and MTET prior to implementation and oversight by the PMU's Consulting Engineer. If there is bore present, PMU's Consulting Engineer to undertake groundwater monitoring prior to any site establishment or construction activities at bores within 100 m of FUN (to be coordinated with Water Division and bore owner) to determine base line conditions. Measure depth to groundwater and analyses samples for concentrations of pH, electrical conductivity, total petroleum hydrocarbons (for potential petroleum contamination), and total nitrogen (for potential sewage contamination), or as agreed with Division of Water.

7.2.13 Waste Disposal

Ensure all construction waste material is recycled or packed up for transport off island. The municipal landfill on Funafuti is not suitable for disposal of construction waste generated from the TUSRAP. Ensure areas for waste collection, recycling and off-side disposal are clearly marked/sign posted. Segregate waste to avoid cross contamination, such as with contaminated material (hazardous substance). Install waste collection facilities at construction camp to allow for collection and packing of waste. Strictly no dumping of rubbish. Include awareness training in general environmental training. Workers must be provided with a sanitary system to prevent fouling of lagoon or surrounding soils. All other hazardous waste is to be disposed of offshore in permitted or licensed facilities. It is the Contractor's responsibility to obtain all necessary permissions for transport and safe disposal of hazardous waste from the project site in a legally designated hazardous waste management site within the country or in another country, and to ensure compliance with all relevant laws. Evidence will need to be supplied to the Employer's Engineer of proper disposal of waste at the final location. With the approval of the Employer's Engineer, organic biodegradable waste may be deposited in designated dumping areas in reasonable quantities which do not lead to FOD generation or allow for leachate to reach soils or groundwater. Disused Material (millings, excavation materials, concrete rubble) can either be used to backfill areas where old equipment or infrastructure has been removed or as a resource (e.g., crushed asphalt and basecourse material) for general use by MTET or PWD and the community. Clean fill materials which are not able to be reused within the timeframe of the project implementation shall be transported to a location approved by the MTET to be stored for future use by the agency. This location shall also be subject to approval by the Employer's Engineer.

All surplus material from excavations shall be removed from the site area and safely disposed of in compliance with any local requirements at the Employer's nominated disposal site(s) and/or disposed of at the Contractor's quarry site(s), before the start of the defect's liability period. Unless otherwise instructed by the Employer's Engineer, other surplus materials not needed during the defect's liability period shall be removed from the site and the country. There is no reticulated sewer network on the island, septic tanks are utilized. The Contractor is responsible for the collection and treatment of the septic waste. Temporary toilets and disposal or treatment of wastewater will need to be in accordance with the Department of Environment advice (for example construction and training in use of compositing toilet facilities).

7.2.14 Landscape Degradation

Restoration of landscape after completion of rehabilitation works; restore the vegetation cover in accordance with the design and consistency with surrounding land condition (e.g., grass land or shrubs). Use plant species characteristic for the landscape in the course of restoration of the vegetation cover. Should the removal of mature trees be necessary for operational safety, determine whether OP4.12 would be triggered and ensure all appropriate measures and permissions are in place before removal of trees.

7.3 Social Impacts

7.3.1 Occupational Health and Safety

The primary hazards identified are traffic management, construction works involving hot bituminous products (up to 165 °C) and working in extreme ambient temperatures.

During construction and operation health and safety is to be managed through a Site Specific OHS Plan (to be developed by the contractors using the codes of practice attached to this PESMP in Appendix G) and application of international environmental and health and safety (EHS) standards (WB/IFC EHS Guidelines). The Contractors health and safety documentation should incorporate all aspects of the project including the airport site and transport routes.

Civil works shall not commence until the Employer's Engineer has approved the OHS plan, the Safety Officer is mobilized and on site, and staff have undergone induction training.

7.3.2 Community Health and Safety

Project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition to the impacts already identified throughout this section, the impacts of an imported work force must be considered.

7.3.2.1 Influx workforce

While it is not anticipated that there will be a need for a worker's camp to be established for the works, it is probable that there will be a need for additional workers to be brought to the project site for the completion of the works. The PMU estimates of up to 45 civil contractor workers for the project and 10 engineering, however, the staging of the works means the total number of workers at any one time will likely be less than this. In addition, local recruitment and training measures within the LMP, and the high costs of importing labour to Tuvalu will act to minimise the foreign influx of workers. It is expected that the foreign influx of workers will be accommodated within existing commercial hotels in Funafuti. These workers are likely to be from both overseas and from Funafuti, and the Contractor must therefore be aware of the potential impacts that this influx of outside labour can have on the local community and manage these impacts and interactions appropriately. Should the number of foreign workers exceed the available accommodations at a given time in Funafuti, and the contractor decides that dedicated workers' accommodation needs to be established, this PESMP and CESMP will be updated to detail the arrangements for the workers' accommodation in compliance with the ESF and ILO Workers Accommodation Standard "R115 - Workers' Housing Recommendation, 1961 (No. 115)".

In terms of the vulnerability of the airport area communities to external influences, in the context of Tuvalu, these communities can be considered to be low-risk due to their proximity to and integration with Funafuti and the FUN international airport and the ease of access to these communities via the main Vaiaku. This being said, local area communities may still be vulnerable to increased social pressures from any uncontrolled influx of labor.

The exact division of labor force and recruitment strategy has yet to be determined and should be described in the CESMP.

7.3.2.2 Traffic and handling of hazardous materials

The runway is not fenced. There appears to be good management of clearing the runway and alerting residents to incoming and outgoing aircraft however during the construction phase of the project and particularly the resurfacing of the runway access will need to be limited to ensure community safety. The MOWP will provide specific details on how this is to be managed as fences and other security/safety measures have potential to be an obstruction to airport operations. In the late afternoon and evenings, the runway is used for sports games and informal social gatherings. Unfortunately, these activities may be restricted to smaller areas of the runway which are not under construction. This will be a temporary restriction of access.

7.3.2.3 HIV/AIDS, Sexual Exploitation and Abuse/Sexual Harassment, Gender Based Violence, and Child Abuse and Exploitation

During past consultations, the community raised concerns regarding the spread of sexually transmitted diseases (particularly HIV) with incoming contractors and workers related to the project. A number of mitigation measures have been identified including awareness training (offered by the Ministry of Health and the Tuvalu Family Health Association) for foreign workers and employing local laborers.

To address the above community concerns re impacts associated with personnel recruited from outside the local community such as increased instances of HIV/AIDS, all employees (including managers) will be required to attend training prior to commencing work to reinforce the understanding of HIV/AIDS, sexual exploitation and abuse/sexual harassment (SEA/SH), gender-based violence (GBV) and child abuse and exploitation (CAE). Subsequently, employees must attend a mandatory training course at least once a month for the duration of mobilization.

Additionally, the Contractor accepts that gender-based violence might occur as an unintended consequence of economic development. As such the Contractor accepts responsibility for implementing actions to help reduce instances of HIV/AIDS, SEA, GBV and CAE by providing training to staff as above.

Lastly, managers will be required to attend an additional manager training prior to commencing work on site to ensure that they are familiar with their roles and responsibilities in ensuring the HIV/AIDS, GBV and CAE standards are met on the project. This training will provide managers with the necessary understanding and technical support needed to begin to develop a plan for addressing HIV/AIDS, SEA, GBV and CAE throughout the lifetime of the civil works, including monitoring and reporting.

7.3.2.3.1 HIV-AIDS Prevention

While mobilized for work, the Contractor shall produce a conduct an HIV-AIDS Information, Education and Consultation Communication (IEC) campaign via an approved service provider approved by the PMU's Consulting Engineer and shall undertake such other measures as are specified in this Contract to reduce the risk of the transfer of the HIV virus between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals. The Contractor shall not discriminate against people found to have HIV-AIDS as part of the campaign.

The PMU's Consulting Engineer shall provide to the Contractor a list of approved service providers which shall include recognized NGOs and/or recognized local health departments. From the provided list, the Contractor shall enter into agreement with one service provider to undertake the HIV-AIDS IEC campaign.

The cost of the campaign shall be funded by the Contractor from the provisional sum provided in the bill-of-quantity. The contractor shall make staff available for a total of at least 0.5 days per month for formal trainings including HIV/AIDS.

Prior to contractor mobilization, the approved service provider shall prepare an action plan for the IEC campaign based on the 'Road to Good Health Toolkit' (www.theroadtogoodhealth.org) which shall be submitted to the PMU's Consulting Engineer for approval.

The action plan will clearly indicate (i) the types and frequency of education activities to be done; (ii) the target groups (as a minimum to all the Contractor's employees, all Sub-Contractors and Consultants' employees, and all truck drivers and crew making deliveries to Site for construction activities as well as immediate local communities); (iii) whether condoms shall be provided; and (iv) whether STI and HIV/AIDS screening, diagnosis, counselling and referral to a dedicated national STI and HIV/AIDS program, (unless otherwise agreed) of all Site staff and labor shall be provided.

The IEC campaign shall adopt the 'Road to Good Health' Toolkit methodology (www.theroadtogoodhealth.org) and use readily available information for the Project. No specific new information shall be produced unless instructed by the PMU's Consulting Engineer.

The IEC campaign shall be conducted while the Contractor is mobilized in accordance with the approved approach. It shall be addressed to all target groups identified concerning the risks, dangers and impact, and appropriate avoidance behavior with respect to, of Sexually Transmitted Diseases (STD)—or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular.

The Contractor shall include in the program to be submitted for the execution of the Works under Sub-Clause 8.3 the IEC campaign for Site staff and labor and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD and HIV/AIDS alleviation program shall indicate when, how and at what cost the Contractor plans to satisfy the requirements of this Sub-Clause and the related specification. For each component, the program shall detail the resources to be provided or utilized and any related sub- contracting proposed. The program shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for preparation and implementation this program shall not exceed the Provisional Sum dedicated for this purpose.

Sexual Abuse and Exploitation, Gender-Based Violence/CAE: As required in the bid documents, the Contractor will implement the TUSRAP Codes of Conduct and Action Plan to Prevent Sexual Exploitation and Abuse/Sexual Harassment and Exploitation, Gender Based Violence as Well as Child Abuse/Exploitation (Appendix F). The Codes of Conduct aim to prevent and/or mitigate the risks of SEA, GBV and CAE within the context of TUSRAP. These Codes of Conduct are to be adopted by the civil works contractors, as well as supervision consultants.

The PMU's Consulting Engineer shall provide to the Contractor a list of approved service providers which shall include recognized NGOs and others for conducting training on SEA, GBV and CAE. From the provided list, the Contractor shall enter into agreement with one service provider to undertake the SEA, GBV and IEC campaign. The cost of the campaign shall be funded by the Contractor from the provisional sum provided in the bill-of-quantity. The contractor shall make staff available for a total of at least 0.5 days per month for formal trainings including GBV.

Prior to contractor mobilization, the approved service provider shall prepare an action plan for SEA and GBV IEC campaign which shall be submitted to the PMU's Consulting Engineer for approval.

7.3.3 Business Impacts

During the construction phase there is the potential for minor impacts on airport concessionaires and other small businesses in the airport vicinity. These impacts include barriers to access, noise, dust and traffic from construction activities and will be of limited duration. Following the PESMP will mitigate these potential impacts to an acceptable level. All potentially affected businesses will continue to be included in the consultation process.

8 Mitigation Measures

Due to the nature of the rehabilitation activities proposed there are some mitigation measures which are applicable to all aspects of the project, while others that are specific to particular components. Sensitive receptors and environmental values have been identified along the route of the road and around the airport which will require specific mitigation measures for safety and environmental protection. The mitigation measures are outlined in Appendix B. The mitigation tables detail the impact or issue, the mitigation required, where this is to occur, when this mitigation is to be applied, estimated costs, implementation responsibility and supervision responsibility.

This PESMP will be included in all bidding documents and form the basis of the Contractors ESMP (CESMP), which will detail implementation of the mitigation measures identified in this PESMP. The Contractor will be required to prepare the CESMP in accordance with this PESMP and submit to the PMU for approval by the PMU (as supported by the CPMO) and No Objection from the World Bank.

8.1 Aggregate, Materials and Equipment Importation

All materials and equipment must be fumigated, and official certificates issued prior to arrival on Fongafale to ensure no plant or animal pests are accidently introduced. The aggregate and any other fill type material will need to be completely inert and free of contaminants. Verification of source and or results from laboratory testing must be provided for importation. Importation permits and Quarantine certification shall be obtained from the Department of Public Works and Quarantine Department before applying for export permits from the source country of materials. Natural resources of important biodiversity value such as coral reefs shall not be used as construction materials (either locally or imported).

8.2 Chance finds of archeological artifacts

It is unlikely that there will be any chance finds of items of cultural significance during works in this area, however, should new items of cultural importance or archaeological artifacts (fossils, coins, articles of value or antiquity, and structures and other remains or fossil items of geological or archeological interest) be revealed, the finding must be registered and the information shall be handed over to GoT who will advise on how they shall monitor the construction works.

For any discoveries, the Contractor will stop works and report the find to the PMU's Consulting Engineer. The contractor will receive instructions from the PMU's Consulting Engineer acting for the PMU, under advice of the GoT, on the course of action in case of chance finds. The Contractor will be obligated to strictly follow those instructions. Should an item of cultural importance, archaeological artifact or site be encountered, Contractor must hold works and promptly notify the PMU's Consulting Engineer and follow their further guidance. Works should resume only after receiving a formal clearance from the PMU's Consulting Engineer.

8.3 Hazardous Substance Use, Storage and Disposal

Hazardous liquids (e.g., fuel and lubricants) must be managed by the selected contractor within hardstand and bunded areas/drums and tanks, in accordance with the specification, to prevent runoff to surrounding permeable ground. Bunded areas (secondary containment) must contain the larger of 110 percent of the largest tank or 25 percent of the combined volumes in areas with a total storage volume equal or greater than 1,000 liters. Bunded areas are to be impervious (watertight), constructed from chemically resistant

material, and be sheltered from the rain as rainwater allowed to collect within the bund could be contaminated if there is any hazardous substance residue on storage containers or spilt product within the bund.

A spill response plan must be in place and all workers trained in correct implementation of the spill response plan. Spill kits should be available in close proximity to where hazardous substances are used and stored e.g. on the work truck or beside the fuel store. Workers should be trained in the use of spill kits.

The bitumen and asphalt plant (including dust scrubber) will be located at the identified construction camp with a site plan included in the C-ESMP to identify its exact location within the construction camp.

To protect the ground water resources and to better manage any spills, the key production and material delivery areas of the asphalt plant will be over hardstand.

There is potential that hydrocarbon product or contamination may be encountered during construction work. A photoionization detector (PID) should be available to monitor the worker breathing zone. Parts per million (ppm) concentrations of volatile organic compounds (VOCs) should be used to quantify the potential risk to workers. If the breathing zone concentration exceeds 5 ppm, workers should move to an upwind location until vapors clear.

Hazard specific personnel protective equipment should be provided to workers directly involved in handling hazardous substances (e.g., chemical or heat resistant clothing, gloves).

If any soil staining is observed or odor experienced a sample of the affected soil material should be collected and measured using the PID. If the PID returns readings greater than 10 ppm the material should be treated as contaminated fill.

Depending on the volume of material it may be appropriate to excavate the affected soils and prepare for transport to a facility licensed to accept hazardous waste. Material should be secured in airtight containers for transport (as per Waigani Convention requirements for the trans-boundary movement of hazardous waste material).

8.4 Safety and Traffic Management

Construction camps and stockpile sites will be protected by a fence. Security clearance will be required for all airside construction workers. Airside construction works will be managed through the MOWP and MTET will be responsible for ensuring the safe operation of the airport at all times. The MOWP will detail the specific safety and security requirements for the airport operations, including safe operating distances and responsibility of key project roles. If any off-site locations are approved for use, then these management requirements, including a secure perimeter fence, shall be implemented for these locations. Each investment within an operational airport is to have a MOWP, which is to be included in all bid/contract documents and CESMP. The Contractor is to develop a Safety Management Plan

The transport of materials has the potential to impact communities through noise, dust and road safety. The Contractors are responsible for developing a TMP to be submitted with the CESMP which will specify how traffic (vehicle and pedestrian) will be managed, including transport times (outside peak hours), maximum

speed and loads of trucks, use of flag controls at site entrances (construction lay down area), use of unsealed roads through sensitive communities, and around specific work areas.

The TMP shall include details of key routes, site entry and exit layout, use of signage and flag operators (including night-time safety), and personnel protective equipment to be worn by workers (e.g., high visibility vests). The TMP should consider that the transport of material or equipment may likely impact normal pedestrian and vehicle traffic or pose an increased safety hazard, consideration should be given to moving these items during off peak times. The TMP will also detail specific safety and traffic management measures required around sensitive receptors. These measures should be developed in consultation with MTET, PWD individual landowners and property managers (e.g., school principals, hospital management, and church leaders) as required. Mitigation measures may include restricted construction times (e.g., time of day and or scheduling for school holidays) outside schools or the hospital, reduced speeds and use of cones or barriers to guide traffic and pedestrians through the worksite. As there is only one road with few feeders and alternative routes, staging and methodology will need to consider access to property along the road. These details will need to be clearly detailed in the TMP.

The MOWP will detail the specific safety and security requirements for the airport operations, including safe operating distances and responsibility of key project roles.

8.5 Stormwater and Water Management

8.5.1 Stormwater Management

Water required for construction activities such as dust suppression and asphalt production will need to be managed carefully as there is to be no impact on the island's freshwater supply as a result of the TUSRAP construction or operational stages. Water for use during construction should be carefully planned for at the pre- construction mobilization stage by the contractor. If required, rainwater should be collected in advance and a project specific mobile desalination plant imported (or other mobile water treatment unit). Possible non-potable water sources (e.g., seawater) and uses should be identified (e.g., dust suppression, machinery washing), provided there will be no risk of contamination of groundwater. Water saving measures include sweeping of work areas and vehicles tires instead of washing to prevent dust.

Runoff from disturbed areas is not to be discharged directly to the marine or coastal environment. Sediment laden runoff is to be treated (via settling pond or tank) and discharged to land or reused.

Designs for the storage, treatment and disposal of stormwater and drainage from the runway upgrades is yet to be designed. Detailed mitigation measures will be adopted at the time of detailed design and the PESMP will be updated. Some key principles for designing and managing stormwater and drainage for runway construction include:

a) Comprehensive drainage plan - develop a comprehensive drainage plan that considers the entire airport area, including runways, taxiways, aprons, and surrounding areas. Ensure proper integration of the runway drainage system with the overall airport drainage infrastructure.
b) Regulatory compliance - comply with all relevant regulations and Good International Industry Practice (GIIP) and standards related to stormwater management, environmental protection, and aviation safety.

c) Runoff management - calculate and manage stormwater runoff from the runway and associated surfaces. Ensure that the drainage system can handle the peak runoff during storms or extreme climatic events (e.g., 100-year rainfall) without causing flooding or erosion.
d) Surface grading - ensure proper grading of the runway to promote positive drainage, directing water away from the runway and toward designated drainage channels or retention ponds.
e) Slope and cross-slope - design the runway with appropriate slope and cross-slope to facilitate water flow and prevent ponding. Adequate cross-slope helps in shedding water from the runway's surface.
f) Runway grooving - consider grooving the runway surface to improve drainage and enhance friction, especially in wet conditions. Properly designed grooves help reduce hydroplaning.
g) Perimeter and subsurface drainage - install perimeter drains and subsurface drainage systems to intercept and manage groundwater and stormwater beneath the runway. These systems can prevent the weakening of the runway's foundation.
h) Erosion control - Implement erosion control measures, such as silt fences, erosion control blankets, and sediment basins, to prevent sediment from entering stormwater runoff and impacting adjacent water bodies.
i) Water quality management - implement water quality best practices to treat stormwater before it is discharged. This may involve the use of sediment basins, vegetated swales, or filtration systems.
j) Monitoring and maintenance - regularly monitor and maintain the stormwater and drainage infrastructure to ensure its proper functioning and prevent clogging or damage. Routine inspections are crucial for runway safety.
k) Emergency response plan - develop an emergency response plan to address extreme weather events, such as heavy rainfall or storms, which could impact the runway's drainage system and operations.
l) Climate adaptive and sustainable mitigation measures - minimize impacts by using climate adaptive and appropriate materials, erosion control practices, and sustainable construction methods, taking into consideration potential impacts on nearby water bodies and habitats.
m) Coordination with Air Traffic Control - coordinate closely with air traffic control to ensure that drainage systems do not interfere with runway lighting, navigation aids, or other essential equipment.

8.5.2 Water Management

Water required for construction activities such as dust suppression and concrete production will need to be managed carefully so as not to impact on the island’s freshwater supply or the airport’s needs for fire suppression. Where possible rainwater will be collected or non-potable water will be used, provided there will be no risk of contamination of groundwater.

If there are any bores within 100m of the asphalt plant the Contractor is required to establish water quality baseline study and carry out water quality monitoring prior to commencement of construction works, during construction works, and at completion of all construction works to confirm no contamination of groundwater as a result of the works. Different bores may be selected to provide information on groundwater quality at any given time in that area. Bores may also be identified by Water Division as requiring monitoring to determine effects from construction and or operational activities.

Parameters that should be monitored include pH, electrical conductivity, total nitrogen and total petroleum hydrocarbons (TPH) or as agreed with Department of Environment.

8.6 Bitumen and Asphalt Plant

Bitumen and asphalt production requires very high temperatures which pose a significant risk to workers and the general public. Therefore, the bitumen and asphalt plant should be located within a secure compound at the construction camp to ensure security and reduce risk of unauthorized access. The plant also requires use of hazardous materials which must be stored on hard stand areas or within bunded areas (both should be available at the laydown site). The plant itself must also be on hardstand and elevated above any risks of inundation from high or king tides.

The Contractor shall detail the construction camp site plan in their CESMP, and the location of plant and equipment within this site shall be subject to approval by the Employer's Engineer and compliant with this PESMP. Although the use of this machinery will be short-term, it can create nuisances such as noise and a mercaptan odor.

The asphalt plant should be equipped with either bag house or wet scrubber particulate removing system to reduce dust and odor emissions.

The Contractor shall include a bitumen and asphalt plant rehabilitation plan in their CESMP documentation.

Hard stands with covered, bunded areas shall be available at the plant for the storage of other hazardous materials (including hazardous waste), such as those used in the preparation of the seal coats for the pavement.

8.7 Construction Lay Down Area

The construction camp and stockpile sites will be those sites identified in Section 3.3.4. The locations avoid aircraft operations and are subject to the mitigations described in this PESMP as well additional safety constraints as described by the Engineer.

The construction lay down area will be used to store equipment and materials for all components of the project, and the production of asphalt and as such there are a number of potential hazards associated with the equipment and materials Additional fencing may be required around specific stores (e.g. hazardous substances) to prevent unauthorized access.

Areas within the compound must be clearly marked for solid waste collection, machinery maintenance, ,hazardous waste, plant operations (concrete, bitumen, asphalt) and toilet facilities for workers. Each of these areas must be constructed in such a way to prevent any potential adverse impacts on the surrounding environment particular the marine environments and the ground water resources.

Where necessary and as described in this chapter, the laydown areas will include hard stand areas, protection from wind and rain, bunding (hazardous substances), stormwater diversion drains, and collection and treatment of wastewater from site operations (e.g., machinery maintenance). The ground of the construction lay down area will likely be compacted by the end of its use and so restoration will require scarification of the soil, application of topsoil and re-vegetation.

The construction lay down area is not a residential camp. Foreign contract and project staff are expected to utilize existing local hotel accommodation. While it is not anticipated that there will be a need for a residential workers camp to be established for the works at the FUN international airport, it is prudent to be aware of the necessary steps required to install or upgrade an existing workers camps should this become necessary for any reason. The IFC has published guidelines and standards for workers accommodations and these guidelines must be adhered to and updates made to the PESMP and CESMP as appropriate.

Transport to and from the construction camp, particularly of materials and equipment, must occur on the existing road network and measures undertaken to prevent dust, noise and vibration nuisance (e.g., wheel wash, covering of loads, servicing of vehicles). If the transport of material or equipment is likely to impact on normal pedestrian and vehicle traffic or pose an increased safety hazard, consideration should be given to moving these items during off peak times and be included in the Traffic Management Plan.

Runoff from hard stand areas used to store machinery will need to be collected and treated (e.g., oil water separator) to prevent contamination of soil or water bodies. Hazardous substances (e.g., fuel, lubricants or oil) must be stored in a bunded area. Solid waste and wastewater must be managed in such a way to prevent the spread of vector-borne diseases and contamination of soil and water bodies. There is one official landfill on Funafuti at the northern tip of the road which is managed by the Solid Waste Agency of Tuvalu (DWM) and the Funafuti Kaupule. However, there is pressure on the landfill and so all solid waste not able to be re-used either by the project or community must be removed from island at completion of the project works. There is no sewer network on the island.

Therefore, temporary toilets and disposal or treatment of wastewater will need to be in accordance with the PWD and DWM's advice (for example construction and training in use of compositing toilet facilities).

All occupational health and safety requirements must be in place and workers trained in necessary procedures (e.g., spill response plan). Personal protection equipment (PPE) needs to be available to workers as required (e.g., high visibility vest, safety boots) and processes in place for obtaining relevant PPE.

All stockpiles must be kept within the identified stockpile site and must be small (no higher than 2m) and bunded to prevent dust and sediment laden runoff being generated. If need be, the stockpiles should be wetted or covered to prevent dust.

Runoff from stockpiles and excavations is prohibited from discharging directly to the marine or coastal environment.

8.8 Wastewater Management

There are a number of activities during construction and operation phases of the project which will generate wastewater.

Wastewater from wash down areas is to be collected either in a settlement pond or tank to allow sediment and particulate matter to drop out before the water can be reused as wash water, dust suppression or in other processes. A separate wash down area is required for machinery or material with oil or fuel residue as this wash water is required to be treated through a mobile oil water separator. Wash water from concrete production, cutting, washing of equipment used and areas where concrete is produced must be collected and treated to lower the pH (closer to neutral) and to allow settlement of suspended solids. All wash down

areas and wastewater treatment areas, where practical should be located within the construction camp or PWD compound.

Treated wash water where possible should be reused for dust suppression or within other processes. Direct discharge to the marine or coastal environment is prohibited. Discharges of treated wash water are to occur to land only. Sufficient measures to avoid direct discharges are required when working adjacent to the marine and coastal environment, which may include bunding (e.g., sandbags), demarcation of exclusion zones, and limited use of large machinery.

8.9 Solid Waste Management

The Contractor will develop a Solid Waste Management Plan (SWMP) to be submitted as part of the CESMP for clearance by the PMU Supervision Engineer. At all times, the Contractor is responsible for the safe and sound disposal of all solid waste generated by the Works.

The SWMP should adhere to the Tuvalu Integrated and Waste Management Policy and Action Plan and follow the guidelines provided in Appendix H. As a minimum the SWMP will make provisions for the following:

- Describe the solid waste streams generated by the works along with estimated quantities.
- Develop a plan for safe storage and handling of waste stored on the project site as per the stipulations in this PESMP.
- No Tuvalu landfills are to be used for any waste. All waste is to be recycled or disposed of offshore at a permitted facility.
- No dumping or storage of any waste in Tuvalu or in any other location except as provided in this ESMP.
- Compliance with Waigani Convention and any other relevant international conventions for export of hazardous and non-hazardous waste.
- Identify and utilize suitable local recycling and reuse options.
- Detail the approved disposal methods along with appropriate permissions.
- Contractor shall determine a Department of Environment -approved site for the disposal of organic biodegradable waste in a suitable facility which is equipped to safely handle this type of waste.
- identify the type of waste that can be reused/recycled and how it will be used, and transport recyclable waste/material to the Department of Waste Management for processing/disposal.
- Contractor to identify shipping route and licensed disposal facilities for all exported waste.
- Contractor to identify any export permits or conditions for export of waste.
- Identify those persons responsible for implementing and monitoring the SWMP.

Waste generated by the project that cannot be recycled or reused (to be determined in consultation with the PWD, DWM and Funafuti Kaupule) is to be removed from Tuvalu at the completion of the contractors' work. The contractor is responsible for ensuring the waste is packed in shipping containers or other suitable impermeable containment to ensure waste (solid and liquid) is not inadvertently discharged at sea. Details of the receiving waste facility (including transport documentation and agreements to receive the waste) must be provided to MTET to ensure the facility is licensed or permitted.

8.10 Occupational Health and Safety

Civil works shall not commence until the PMU's Consulting Engineer has approved the OHS plan, the Safety Officer is mobilized and on site, and staff have undergone induction training. Some essential elements typically included in an OHS Plan for airport runway construction include:

a) An overview of the airport runway construction project, purpose and scope of the OHS Plan, identification of the airport and relevant stakeholders,
b) Objectives and Goals - clear and measurable safety objectives and goals for the construction project.
c) Legal and Regulatory Requirements - a summary of local, state, and federal regulations, as well as aviation safety standards that apply to the construction. Commitment to full compliance with all relevant legal requirements.
d) Organizational Structure - identification of key personnel responsible for health and safety, including the Health and Safety Officer or Manager. Reporting lines, roles, and responsibilities within the project team.
e) Hazard and Risk Assessment - a description of the process for identifying, assessing, and managing safety hazards and risks specific to airport runway construction. Control measures and mitigation strategies for identified hazards.
f) Safety Procedures and Work Practices - detailed procedures for safe construction activities, including excavation, grading, paving, and equipment operation. Emergency response procedures and protocols for dealing with accidents or incidents.
g) Aviation Safety - specialized procedures and safety measures related to aviation, including runway lighting, air traffic control coordination, and navigational aid protection.
h) Equipment and Vehicle Safety - requirements for the safe operation and maintenance of construction equipment, machinery, and vehicles. Protocols for equipment inspection and maintenance.
i) Personal Protective Equipment (PPE) - requirements for providing and using personal protective equipment, including high-visibility clothing, hard hats, and ear protection.
j) Safety Training and Education - details of training requirements for employees, contractors, and subcontractors. Methods for delivering safety training and documentation of training records.
k) Health and Safety Monitoring - methods for monitoring and evaluating health and safety performance on the construction site. Procedures for reporting incidents, accidents, and occupational illnesses.
l) Communication and Coordination - plans for communicating health and safety information to construction personnel, airport management, and aviation authorities. Protocols for coordinating with air traffic control and other airport operations.
m) Emergency Response and Evacuation - comprehensive emergency response plans for dealing with aviation-related and construction-related emergencies. Evacuation procedures and assembly points.
n) Construction mitigation measures - for minimizing impacts, such as controlling dust, erosion, and stormwater runoff. Compliance with environmental regulations and standards.
o) Auditing and Review - processes for conducting regular audits, reviews, and safety inspections. Procedures for making necessary revisions and improvements.

p) Commitment to Continuous Improvement - a commitment to continuously improving health and safety performance throughout the construction project. Mechanisms for collecting and acting on suggestions for improvement.
q) Signatures - signatures of senior management, the Health and Safety Officer, and other relevant parties to indicate commitment and responsibility.

Given the complexity of airport runway construction, it's important to tailor the OHS Plan to any unique risks identify by the project during implementation. The plan should also be regularly reviewed and updated to reflect changes in the work environment, project progress, and evolving safety best practices in airport construction. Additionally, close coordination with airport authorities and air traffic control is essential to ensure aviation safety during construction activities.

The following are the contractual requirements for OHS as stipulated in the bidding documents:

Comply with the requirements of the Project Labour Management Procedures.

Health and Safety: Funding for Occupational Health and Safety (OHS) training and activities is provided in the bill-of-quantity as a provisional sum. The Contractor's costs shall be financed from this on proof of record (e.g., time sheets, material invoices etc.) for the following:

- Recruitment of provider for delivery of HIV/AIDS education training.
- Recruitment of provider for delivery of sexual exploitation and abuse / sexual harassment (SEA/SH), gender-based violence (GBV) and child abuse and exploitation (CAE) training.
- Expenses related to HIV/AIDS, SEA/SH, GBV and CAE training
- Provision of Safety Officer when acting in the role of Safety Officer
- Personal Protective Equipment (PPE) for all workers on the site, and visitors as appropriate
- Safety signage, safety literature, HIV/AIDS literature, condoms, voluntary counselling and testing, SEA/SH, GBV literature, CAE, literature etc.
- Alcohol testing of staff to enforce a zero-alcohol tolerance policy
- Labor costs for attending: (i) dedicated safety training such as working at heights, confined space training, first aid training etc.; (ii) HIV/AIDS education training; (iii) SEA/SH, and gender-based violence (GBV) training; and (iv) CAE training. The contractor shall make staff available for initial training of 1.5 days, and a total of at least 0.5 days per month for other such formal trainings.

For the purposes of the project, in addition to the national OHS standards the employer is adopting a Code of Practice for occupational health and safety based on good international industry practice. To be qualified for bidding contractors will be required to have in place an occupational health and safety management system which is compliant with, or equivalent to, OHSAS 18000 (http://certificationeurope.com/ohsas-18000-health-safety-managment-standards/) and is acceptable to the TuSRAPPMU. The contractor shall specify which occupational health and safety standards are to be applicable to the project and provide evidence of application of such standards on a project of similar size and complexity during the past 5 years. The standards to be adopted may include those of Australia, Canada, New Zealand, the EU and the US, which are referred to in the World Bank Group EHS Guidelines.'

Civil works shall not commence until the PMU's Consulting Engineer has approved the OHS plan, the Safety Officer is mobilized and on site, and staff have undergone induction training.

The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that first aid facilities and sick bays are available at all times at the Site, including having a site vehicle available at all times that can be used to transport Contractor's and Employer's Personnel to medical facilities. The Contractor shall ensure that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

The Contractor shall appoint a certified Safety Officer at the Site, with qualifications acceptable to the PMU's Consulting Engineer, responsible for maintaining safety and protection against accidents. This person shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

The Contractor shall post in clearly accessible places information on how to transport injured Contractor's and Employer's Personnel to medical facilities, including the precise location and contact details of such medical facilities, name and contract details of the site designated Safety Officer.

The Contractor shall ensure that all workers on the site have appropriate PPE of an appropriate standard including: (i) impact resistant safety eyewear; (ii) safety footwear with steel toe, sole and heel; (iii) high visibility clothing; (iv) long sleeves and long pants suitable for operating environment; safety helmet with provision of sun protection as necessary; (vi) gloves (carried and worn when manual handling); (vii) hearing protection when working in close proximity to noisy equipment and in all underground environments. For site visitors, the above equipment will be supplied as appropriate based on assessed risks and depending on number of visitors and where they will be on site. See http://tinyurl.com/nzta-ppe-requirements for additional information.

The Contractor shall send, to the PMU's Consulting Engineer, details of any accident as soon as practicable after its occurrence (within 48 hours as per the ESCP). Within 5 working days of the end of the calendar month, the Contractor will be required to report to the PMU's Consulting Engineer on their performance with the following OHS indicators:

- Number of fatal injuries (resulting is loss of life of someone associated with the project or the public)
- Number of notifiable injuries (an incident which requires notification of a statutory authority under health and safety legislation or the contractor's health and safety management system)
- Number of lost time injuries (an injury or illness certified by a medical practitioner that results in absence of work for at least one scheduled day or shift, following the day or shift when the accident occurred)
- Number of medical treatment injuries (the management and care of a patient to effect medical treatment or combat disease and disorder excluding: (i) visits solely for the purposes of observation or counseling; (ii) diagnostic procedures (e.g., x-rays, blood tests); or (iii) first aid treatments as described below)
- Number of first aid injuries (minor treatments administered by a nurse or a trained first aid attendant)

- Number of recordable strikes of services (contact with an above ground or below ground service resulting in damage or potential damage to the service)
- Lost Time Injury Frequency Rate (the number of allowed lost time injury and illness claims per 100 full-time equivalent workers for the injury year specified)
- Total Recorded Frequency Rate (the number of recordable injuries [recordable/lost time/fatal] per 100 full-time equivalent workers for the injury year specified)

The monthly reports shall also include:

- Number of alcohol tests
- Proportion of positive alcohol tests
- Number of site health and safety audits conducted by contractor
- Number of safety briefings
- Number of near misses
- Number of traffic management inspections
- Number of sub-contractor reviews
- Number of stop work actions
- Number of positive reinforcements
- For each fatality, injury or near miss incident, the Contractor shall provide a corrective action report within the monthly report detailing steps taken to ensure risks of a repeat incident are minimized.

8.11 Community Health and Safety

The C-ESMP must integrate an assessment of risks identified in 7.3.2 and suitable management measures including traffic management, handling of hazardous materials and management of influx worker issues (to the extent required), including but not limited to sexually transmitted diseases, SEA/SH and GBV.

This should be prepared in consultation with key affected stakeholders identified in the project Stakeholder Engagement Plan.

9 PESMP Implementation

9.1 Roles and Responsibilities

The following are the roles and responsibilities:

- **MTET PMU**: The MTET PMU (with support from CPMO) manages the project on behalf of the GoT. The PMU:
    - Acts on behalf of the Government and works closely with MTET and all contracted parties to ensure that TUSRAP objectives are delivered in a compliant manner consistent with PMU and MTET requirements.
    - Conducting quarterly E&S risk management audits with the PMU's Consulting Engineer's environmental specialist and other staff
    - Responsible for working with MTET and PMU's Consulting Engineer (and contractors where appropriate for CESMP) to implement consultation plans for the TUSRAP upgrade works.
    - Monitors and manages of complaints/incidents logged via the GRM mechanism.
    - Establish the SEA, GBV and CAE Compliance Team (GCCT) to create an action plan to coordinate and monitor the Contractor or Consultants response to impacts of SAE, GBV and CAE (see Appendix F section 8 for full details of GCCT role).
    - During the construction phase, PSMU receives reporting from the PMU's Consulting Engineer and shares these reports with the MTET, PWD, (to comply with permit monitoring requirements) and CPMO.
    - PMU is responsible for managing recurring instances of non-compliance by the contractor as they are reported by the PMU's Consulting Engineer and all instances of non-compliance by the PMU's Consulting Engineer. PMU will conduct their own quarterly on-site audit of construction works, to supervise CESMP and PESMP implementation.
    - Implementation of all non-construction related E&S risk management activities.
    - PMU E&S risk management specialist monitors PMU reports for consistency and compliance. also receives all new and updated PESMP or CESMP for review and provides these reviewed instruments to WB for approval.
    - PMU E&S risk management specialist provides periodical in- country inspection of project site for PESMP compliance, update the ESMP, prepare E&S risk management clauses for bid documents, review the CESMP and support the PMU and Consultant Engineer with resolving any significant incidents or issues.

- **PMU's Consulting Engineer**: is responsible for the day-to-day oversight of the construction works for the project, including E&S risk management compliance. The PMU's Consulting Engineer is the only party who is contractually able to provide instruction to the Contractor. The PMU's Consulting Engineer will work closely with the Contractor on a daily basis to ensure that FUN works are implemented in a compliant manner consistent with the detailed designs provided and the PESMP. They are responsible for:
    - Daily monitoring the Contractors work for compliance with the CESMP and PESMP as per the measures detailed in Appendix B, C and D and providing E&S risk management

monitoring results in their monthly reporting to PMU. As part of their CESMP monitoring responsibilities, the PMU's Consulting Engineer will ensure that a suitably qualified and experience E&S risk management specialist is resourced to provide at least monthly site inspections to FUN and available for support at other times to respond to incidents, non-compliances, review of CESMP, update of the PESMP and other tasks.
    - Managing the review process of CESMPs for approval. The PMU's Consulting Engineer must ensure that all current E&S risk management instruments have been reviewed internally as well as by PMU, TFSU, WB and final clearance from WB has been secured before disclosure and implementation.
    - Working with PMU to provide meaningful input and direction into community consultations.
    - Managing instances of non-compliance by the Contractor and reporting all instances to PMU. They are also responsible for escalating recurring instances of non-compliance by the Contractor to PMU for action.
    - Managing and responding to all direct complaints/incidents received by their representatives as per the GRM process and reporting all instances to PMU for inclusion into statistical database.

- **Contractor**: It is the Contractors responsibility to:
    - Prepare and have cleared by the PMU's Consulting Engineer the CESMP in accordance with this PESMP.
    - Carry out the FUN upgrade works in accordance with the CESMP.
    - Prepare the MOWP detailing the civil works.
    - Conduct daily and weekly E&S risk management inspections of the works to ensure compliance and reporting the results of these inspections to the PMU's Consulting Engineer.
    - Proactively update the CESMP as construction methodology or other features change.
    - Provide meaningful input and direction into community consultations on the draft CESMP.
    - Advise the PMU's Consulting Engineer of any changes to works or methods that are outside the scope of the PESMP for updating.
    - Post all notifications specified in this PESMP at the site entrance.
    - Report all environmental and OHS incidents to the PMU's Consulting Engineer for any action.
    - Ensure all staff attend SAE, GBV and CAE training as required under the GBV Action Plan (Appendix F).
    - Ensure all staff understand and sign the Codes of Conduct in the GBV Action Plan (Appendix F).
    - Nominate a trained SAE, GBV and CAE Focal Point to represent the Contractor on the GCCT and to create a working relationship with the local service provider. (See Appendix F Section 8 for details on the Focal Point and GCCT roles).

Design Engineers for pavement works: responsible for complying with the PESMP for all monitoring and trial activities on the runway pavement.

MTET: As the lease holder and airport operator, MTET has a role in ensuring stipulated OHS measures are being implemented as they relate to airport operations, such as the location and timing of works, signing off

on the MWOP etc. They also have a role in approving uses of areas of their site for particular uses as they may relate or impact on airport operations. They will be involved in consultations and any publication of information relating to the works. There will also be ongoing airport operational monitoring requirements of MTET.

Figure 1111 below shows the E&S risk management reporting responsibilities for FUN as described in this PESMP.

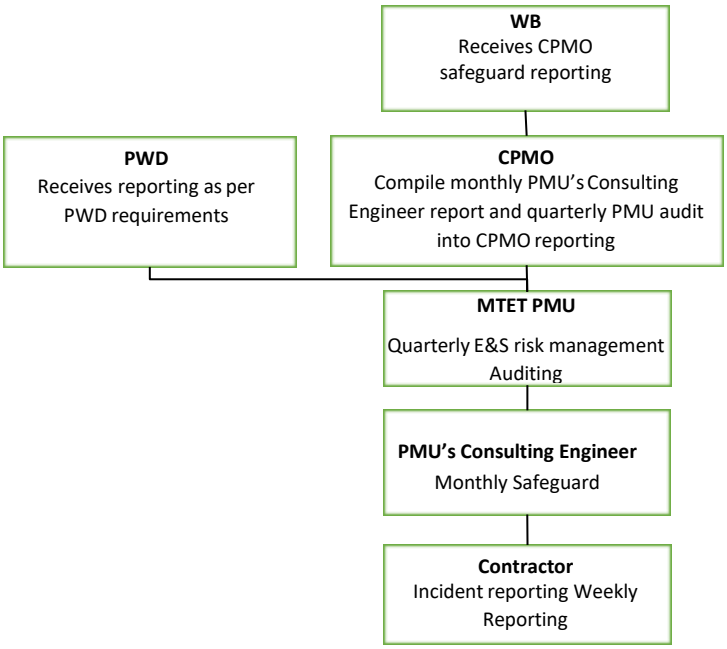


Figure 11: E&S Risk Management Reporting Arrangements for TUSRAP

9.2 Institutional Capacity

MTET/ CAD will require continuous environmental awareness training for monitoring the Contractors and Supervising Consultant's Environmental Representative.

Personnel from the PWD will work alongside the Contractor and Supervision Consultant to capacity build and gain a better understanding of the type of runway surface seal being used and ongoing maintenance requirements. A training budget must be put aside to enable this capacity building with the Government departments. There may also be an opportunity for an Officer from the Department of Environment to work with the Contractor and Supervision Consultant's environmental officer.

9.3 Grievance Redress Mechanism

All complaints and incidents should be referred to the Supervision Consultant's Officer (or designated staff) for undertaking complaint/incident investigation procedures. All complaints must be acknowledged with the complainant within 24hours. In general, the following procedure should be followed:

- The PMU will establish a hotline for the project work publicised to raise awareness among stakeholders including communities in the project impact zone.
- Log complaint/incident, date of receipt and acknowledge complaint receipt
- Investigate the complaint/incident to determine its validity and to assess the source of the problem
- Identify and undertake any action required, communicate response action to complainant (if requested by complainant)
- Log the date of resolution
- Report the complaint in monthly monitoring report including actions, resolution status and any outstanding actions required.
- Complaints or feedback that can be resolved by contractors or Supervising Engineer during normal working operations will be undertaken immediately.
- Other project-related complaints that cannot be resolved immediately, will in the first instance be notified to the PMU for resolution within a specified short time, preferably not more than ten working days. The PMU may defer to other agencies for resolution, depending on the type of complaint or grievance (land grievance, personal grievance etc.).
- If relevant, the MTET will endeavor to arrange mediation hearings in open forum close to the place of residence of the affected person(s) or affected group. The complainant will be entitled to independent representation by a mediator of their choice and will be encouraged to be accompanied by supporters during the process. MTET will ensure that such negotiations are transparent.
- If mediation is unsuccessful, or if the matter is substantive, affected parties can file written or verbal grievances at the High Court. The availability of redress, and information about how to access it, will be publicly disclosed in the Project Information Bulletins for the media, and during consultations with the public.
- Signage at site will be displayed by the contractor and outline the complaints procedure and contact details for making complaints. The RPF describes the grievance redress mechanism, particularly as it applies to land-based grievances.

Figure 12 12 outlines the process of the TUSRAP GRM.

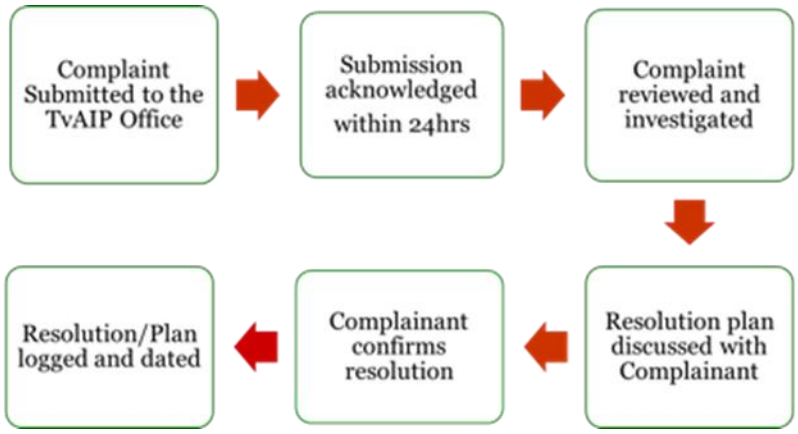


Figure 12: TUSRAP GRM Process

9.3.1 Workers GRM

The Labour Management Procedure includes a worker-specific GRM (WGRM). The Contractor will be required to integrate the principles and procedures of that into the CESMP.

9.3.2 GCCT

As part of the GBV Action Plan (Appendix F), if a complaint on GBV or CAE is made through the GRM, it will be referred to the SEA, GBV and CAE Compliance Team (GCCT) who will investigate the complaint and provide the GRM operator with a resolution to the complaint according to the Action Plan. The GRM operator will, upon resolution, advise the complainant of the outcome, unless it was made anonymously. Complaints made to managers, or the local service provider will refer to the GRM process for further action.

The PMU will contract a local service provider who is available at all times to provide support however, grievance resolution involving Contractor's staff will be the responsibility of the **Contractor's SEA, GBV and CAE Focal Point**[10]. The GCCT will refer the grievance to the focal points for resolution and will advise on potential resolutions.

The Focal Point must be trained and empowered to resolve minor SEA, GBV and CAE issues. In major cases of SEA, GBV and CAE, the SEA, GBV and CAE Focal Point must appropriately refer the complaint to: (i) a local service provider; (ii) the authorities; and/or, (iii) management for further action. For PMU staff, the MTET E&S risk management appointee to the GCCT (or their delegate) will be responsible for resolving grievances.

It is essential that all staff of the GRM, GCCT and Focal Points understand the guiding principles and ethical requirement of dealing with survivors of SEA, GBV and CAE. All reports should be kept confidential and

[10] The Contractor's GBV and CAE Focal Point will be identified by the Contractor and will typically be the contractor's occupational health and safety manager.

referred immediately to local service providers[11]. See the Action Plan in Appendix F for more detailed information.

10 Compliance and Monitoring Plan

10.1 Monitoring Plan

Appendix B of this PESMP identifies the environmental and social monitoring requirements to ensure that all the mitigation measures identified in this PESMP are implemented effectively. Environmental and social monitoring methodology for this project includes:

- Audit of detailed designs
- Audit and approval of site environmental planning documents
- Consultations with communities and other stakeholders as required
- Routine site inspection of construction works to confirm or otherwise the implementation and effectiveness of required environmental mitigation measures

Non-compliance to environmental mitigation measures identified in the PESMP will be advised to the Contractor(s) in writing by the PMU's Consulting Engineer in the first instance. The non- compliance notification will identify the problem, including the actions the Contractor needs to take and a time frame for implementing the corrective action. Recurring instances of non-compliance will be referred to MTET PMU for follow up action.

10.2 Monitoring Plan Reporting

Throughout the construction period, the PMU's Consulting Engineer will include results of their weekly PESMP monitoring, along with the details of any incidents report by the Contractor, in a monthly report for submission to the MTET PMU who is responsible for submitting these monthly progress reports to the World Bank through the PAIP TFSU. The format of the monthly report shall include the following aspects:

- Description and results of environmental and social monitoring activities undertaken during the month;
- Status of implementation of relevant environmental mitigation measures pertaining to the works;
- Key environmental problems encountered, and actions taken to rectify problems;
- Summary of non-compliance notifications issued to the Contractor during the month, actions taken, and non-compliances closed out;
- Summary of complaints received, actions taken, and complaints closed out (including monitoring of complaints resolved through the GCCT GRM (Section 8.1.4 in Appendix F);
- Key environmental and social issues to be addressed in the coming month;
- Training records;

[11] Survivors of GBV and CAE may need access to police, justice, health, psychosocial, safe shelter and livelihood services to begin on a path of healing from their experience of violence.

- Health and Safety Indicators;
- Summary of consultation / stakeholder engagement undertaken;
- Copies of environmental inspection reports; and
- Summary of reported incidents, actions taken and recommendations for follow up.

A day-to-day contract diary is to be maintained pertaining to administration of the contract, request forms and orders given to the Contractors, and any other information which may at a later date be of assistance in resolving queries which may arise concerning execution of works. This day-to-day contract diary is to include any environmental events that may arise in the course of the day, including incidents and response, complaints and inspections completed.

There are monitoring requirements associated with this PESMP that are applicable once TUSRAP has concluded and normal airport operations have resumed. At this stage, there is no vehicle for continuing with E&S risk management monitoring during operations and it is recommended that this be incorporated into existing or new MTET processes. This PESMP should be updated to reflect the MTET environmental and social monitoring and reporting processes before the completion of the project.

An inspection checklist to be used by the Supervision Engineer's E&S risk management specialist during joint inspection with the Contractor's OHS and E&S risk management officer(s) is attached in Appendix D.

The Contractor is also required to develop own weekly checklist based on their CESMP and included in the CESMP submission for approval.

MTET PMU are responsible for quarterly progress reports to the WB. This quarterly progress report will include a section on E&S risk management compliance and issues. This section will cover (as a minimum):

- The overall compliance with implementation of the PESMP.
- Any environmental issues arising as a result of project works and how these issues will be remedied or mitigated;
- OHS performance;
- Community consultation updates;
- Public notification and communications;
- Schedule for completion of project works; and
- Summary of any complaints received, actions taken, and complaints closed out.
- Implementation of GBV Action Plan and GCCT complaints handling (see Section 8.1.4 of Appendix F)

11 Contingency Planning

As part of their CESMP, the Contractors are required to prepare a Contingency Plan encompassing cyclone and storm events. The purpose of the plan is to ensure all staff are fully aware of their responsibilities in respect to human safety and environmental risk reduction. Procedures should clearly delineate the roles and responsibilities of staff; define the functions to be performed by them, the process to be followed in the performance of these functions including tools and equipment to be kept in readiness, and an emergency medical plan. All of the Contractor's staff should undergo training/induction to the plan. The Contractors (and Design Engineers, in respect of the pavement remediation and drainage pilot tests) shall prepare a Contingency Plan encompassing tsunami, cyclone and storm events. The purpose of the Plan is to ensure all staff are fully aware of their responsibilities in respect to human safety and environmental risk reduction. Procedures should clearly delineate the roles and responsibilities of staff, define the functions to be performed by them, the process to be followed in the performance of these functions including tools and equipment to be kept in readiness, and an emergency medical plan. All of the Contractor's staff should undergo training/induction to the Plan.

The wet season in Tuvalu is usually November to April which coincides with the cyclone season. King tides tend to occur in February and March. Construction activities should be limited to the dry season (May to October) however storm and rain events can still occur during this period causing flooding and bringing high winds.

The Contractors are responsible for monitoring weather forecasts, inspecting all erosion and sediment control measures and undertaking any remedial works required prior to the forecast rain or storm event.

In general, the Contractors will:

- Inspect daily weather patterns to anticipate periods of risk and be prepared to undertake remedial works on erosion and sediment control measures to suit the climatic conditions.
- Monitor the effectiveness of such measures after storms and incorporate improvements where possible in accordance with best management practice.
- Ensure appropriate resources are available to deal with the installation of additional controls as and when needed.
- Inform PMU's Consulting Engineer if there are any concerns associated with the measures in place.

Appendix A: Plan and Design Details

PLAN
SCALE 1:1000 @A1

FINAL DETAILED DESIGN

No.	Revision	Notes: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
0	FINAL DETAILED DESIGN		JL	CJ	BM	26/06/19

GHD
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Drawn	J LESTER	Designer	J LARSEN
Drafting Check	J CZASTKA	Design Check	C JORDAN
Approved (Project Director)	B McKELVEY		
Date	JUNE 2019		
Scale	1:1000 (@A1)		

This Drawing must not be used for Construction unless signed as Approved

Client: MINISTRY OF COMMUNICATIONS AND TRANSPORT (MCT) GOVERNMENT OF TUVALU (GoTv)
Project: FUNAFUTI INT. AIRPORT RUNWAY IMPROVEMENTS
Title: GENERAL ARRANGEMENT PLAN
Original Size: A1
Drawing No: 12506660-C001
Rev: 0

Plot Date: 27 June 2019 - 8:59 AM Plotted by: Dario Odendal Cad File No: \\ghdnet\ghd\NZ\Auckland\Projects\51\12506660\CAD\Stage 5\r12506660-C001.dwg

Appendix B: Mitigation Measures

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
DETAILED DESIGN/ PRE-CONSTRUCTION MOBILISATION STAGE					
No permit in place	The Contractor will work with the Engineer to ensure that all necessary development consents are in place prior to commencement of construction works. MTET PMU will assist Contractor where appropriate, however Contractor will be responsible for securing permit and will be responsible for complying with consent conditions through the C-ESMP	FUN	Minimal	Contractor	Engineer and MTET PMU
Road traffic safety	The bid documents will require a Traffic Management Plan (TMP) to be developed by Contractor, to include signage, flag operators, personnel protective equipment (e.g., high visibility vest), and specific actions (e.g., regulating working hours for haul trucks, installation of speed bumps and prohibition of engine braking) to be implemented around sensitive receptors (e.g., residential dwellings, schools, hospital). TMP to include vehicle and pedestrian traffic. Include transport of materials and equipment to construction camp and stockpile site in the TMP e.g., covering of loads, maximum speed, designated travel times and notification of police and other required departments (e.g. hospital and schools).	From port to airport (delivery of equipment/ materials) To and from the construction lay down area and the quarries	Minimal (requirement of bidding documents)	Contractor	Engineer
Aviation traffic safety	Each investment within an operational airport is to have a Methods of Works Plan (MOWP) which is to be included in all bid and contract documents. The Contractor is to develop a Safety Management Plan as an addendum to the MOWP. The MOWP will include details of site works scheduling around known flight timetables and procedures for emergency response for all workers.	Operational airports	Minimal (requirement of bidding documents and standard construction practices)	Contractor	Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
Soil erosion	Minimize erosion and design erosion protection measures according to international good practice standards, including incorporation of effective drainage systems (soakage pits) and consideration of surface flow paths. Wherever feasible, schedule excavation works for the dry season months (May to October) Develop Contingency Plan for works to allow for anticipated construction start date during the wet season. Contingency Plan must detail soil erosion prevention measures in event of storm or heavy rain event. Schedule earthworks and construction activities outside of wet season, which is usually between November to April.	All locations	Minimal (part of standard design practices).	Design Consultants (all contracts) Contractor	MTET PMU MTET PMU MTET PMU/MoNEE
Dust / Odors / Air Pollution	Dust control – by water spraying; dust suppressants, soil stabilization; windbreaks; roadway dust control; enclosure and barriers; equipment vacuums or dust collection system; site layout to minimize the distances that trucks and equipment need to travel on unpaved surfaces, reducing the potential for dust emissions; schedule construction activities that generate a significant amount of dust during periods of lower wind speeds or during less windy times of the day to reduce dispersion; personal protective equipment (PPE); public notifications to nearby residents/businesses about dust generation activities and information about measures being taken to control dust emissions; regular site cleaning; and air/dust level monitoring (also see Generation of Dust below) Identify and locate waste disposal sites, stockpile sites and equipment (e.g., asphalt plant) in approved locations Ensure all equipment is serviced and issued with warrant of fitness (as required). Any machinery deemed to be polluting the air must be replaced (or fixed) on instruction by the PMU's Consulting Engineer and/or MTET.	Construction camp Work sites	Minimal (part of standard design practices).	Contractor	PMU's Consulting Engineer / MTET

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
Water and soil pollution	Soakage pits should not be installed directly into a shallow aquifer. Oil water separators should be included to treat runoff from the apron area of the terminal Minimize risk to groundwater and surrounding soil by developing a spill response plan and provide training to all contract workers on how to implement the spill response plan. Precautions should be in place to prevent wastewater and hazardous substances or materials entering the environment (e.g., fuel spillage, wastewater containing fire retardant during firefighting), The spill response plan should include factors associated with both the construction and operational phases and should be available at all TUSRAP locations. Ensure bunded areas and hard stands are allocated at construction lay down area for the storage of fuel, lubricants and other potential substances required for the project. Watertight bunds to be able to contain 110% of volumes being stored or 25% if total volume greater than 1,000 L. Ensure wash down areas with respective collection and treatment systems are designated within the construction camp (e.g. settling pond or tank and concrete slurry treatment) prior to works commencing. Sanitation treatment system (e.g. removal of waste to landfill, compost or proprietary treatment system) is approved by the DWM and MTET prior to implementation and oversight by the PMU's Consulting Engineer. If there is bore present, PMU's Consulting Engineer to undertake groundwater monitoring prior to any site establishment or construction activities at bores within 100 m of FUN (to be coordinated with Water Division and bore owner) to determine base line conditions. Measure depth to groundwater and analyses samples for concentrations of pH, electrical conductivity, total petroleum hydrocarbons (for potential petroleum contamination), and total nitrogen (for potential sewage contamination), or as agreed with Division of Water.	All components	Minimal (part of standard design and construction practices).	Design Consultant	MTET PMU PMU's Consulting Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
Water supply	The Contractors will also need to ensure adequate supply of water for construction and personnel which does not adversely affect the community's water supply (e.g., mobile desalination plant or organizing a reservoir supply specifically for construction). Contractors should include maximum rainwater reclamation and water conservation/ efficiency in all components.	All components	Minimal (part of standard design practices).	Design Consultant and Contractors	PMU's Consulting Engineer/MTET
Importation of aggregate material	No aggregates will be sourced from within Tuvalu unless it is utilizing an existing PWD stockpile. Obtain import permit and Quarantine certification prior to export from country of origin. Certificate of fumigation and verification of source (or proof that material is free of contamination) to be submitted to Department of Public Works and Quarantine Department.	All components	Minimal (part of standard design and construction practices).	Contractor	Engineer
Solid waste generation	The Contractor will develop a Solid Waste Management Plan (SWMP) to be submitted as part of the CESMP for clearance by the WB. At all times, the Contractor is responsible for the safe and sound disposal of all solid waste generated by the Works. The SWMP should, as a minimum make provisions for the following: No landfill in Tuvalu will be used for project waste Describe the solid waste streams generated by the works along with estimated quantities. Develop a plan for safe storage and handling of waste stored on the project site as per the stipulations in this PESMP. Identify approved service providers for collection and disposal of waste and stipulate conditions of carriage. Detail the approved disposal methods along with appropriate permissions.	All locations	Minimal (part of standard design and construction practices).	Contractor	PMU's Consulting Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	Contractor shall determine an approved site for the disposal of organic biodegradable waste in a suitable facility which is equipped to safely handle this type of waste. Recyclable waste may be supplied to a local receiver licensed to process such waste. Contractor to identify shipping route and licensed disposal facilities for all exported waste. Contractor to identify any export permits or conditions for export of waste. Contractor shall determine a Department of Environment- approved site for the disposal of organic biodegradable waste in a suitable facility which is equipped to safely handle this type of waste. Identify those persons responsible for implementing and monitoring the SWMP. All other waste is to be disposed of OFFSHORE in permitted or licensed facilities. It is the Contractor's responsibility to obtain all necessary permissions for transport and safe disposal of hazardous waste from the project site in a legally designated hazardous waste management site within the country or in another country, and to ensure compliance with all relevant laws. Evidence will need to be supplied to the PMU's Consulting Engineer of proper disposal of waste at the final location. The export of any hazardous waste must be in compliance with the Basel and Waigani Conventions and any relevant laws enacted by source and the recipient countries. Most of the clean fill material can either be used to backfill areas where old equipment or infrastructure has been removed or as a resource (e.g. crushed asphalt and basecourse material) for general use by MTET or PWD and the community. Clean fill materials which are not able to be reused within the timeframe of the project implementation shall be transported to a location approved by the PWD to be stored for future use by the Department. This				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	location shall also be subject to approval by the. Employer's Engineer. These materials shall be removed from the site area and safely disposed of in compliance with any local requirements at the Employer's nominated disposal site(s) and/or disposed of at the Contractor's quarry site(s), before the start of the defect's liability period. Allow for re-use of as much material as possible either within the TUSRAP, other projects, or for community use. Funafuti Kaupule and the island recycling business should be consulted to determine if materials or waste can be recycled within the community. The recycling of construction materials will be at the discretion of the PWD. When planning the construction Camp ensure temporary waste dump areas are allowed for and approved waste disposal sites / methodologies identified for removal of all solid waste. As early as possible in the pre-construction preparation phase suitable receiving waste facility(ies) should be identified and agreements put in place to transport (trans-boundary) remaining project waste from Tuvalu. Unless otherwise instructed by the Employer's Engineer, other surplus materials not needed during the defect's liability period shall be removed from the site and the country.				
Hazardous substances	Fuel shall be obtained from local commercially available sources. Prior arrangement regarding quantity and type will need to be organized (MTET to provide details of providers). All fuel to be stored in self-bunded containers. Fuel shall not be stored in the construction camp unless permission given by MTET and the Department of Energy. In all TUSRAP project locations, fuel should only be stored in designated areas that are designed to store and facilitate operations associated with it (e.g. re-fueling).	All locations	Minimal (part of mobilization and construction planning).	Contractor	Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	Ensure containment facilities are set up for the transport of hazardous waste substances that are to be disposed of at licensed waste facility (trans-boundary). Spill Response Plan to be developed by Contractor. The response plan should include details on the use of spill kits and absorbent items to prevent spills entering the receiving sensitive environment (ground, surface water). This spill response plan should be applicable to all TUSRAP project works areas (airport, quarries, and transport routes). A spill response plan should be in place for both the construction phase and operational phase. Identify suitable area for hardstand and bunded storage areas within the construction camp All empty asphalt or bitumen drums will be removed offshore and either returned to supplier or disposed of in a legally approved facility outside Tuvalu				
Gender Based Violence (GBV) and Violence Against Children (VAC)	Undertake training on, and sign Codes of Conduct for Consultants, Contractor, Managers and other personnel. Refer to Appendix F for draft Codes of Conduct Identify a Focal Point to represent on the GCCT (Refer Appendix F Section 8 for roles)	All locations	Minimal	Design Consultants (all contracts) Contractor	SIRAP PMU
Importation of equipment and materials	The Contractor is to arrange for their vehicles and machinery to be thoroughly cleaned of all contamination prior to shipping (e.g. soil, rocks, plant material, seeds, etc.). Items shipped inside containers must also have the inside of the container thoroughly cleaned of all previous cargo residues, including dunnage. Obtain import permits and quarantine certification prior to export from country of origin. Certificate of fumigation and verification of source (or proof that material is free of contamination) to be submitted to Quarantine Inspectors and approved by the Employer's Engineer prior to delivery to site.	All components	Minimal (part of mobilization and construction. planning)	Contractor	Employer's Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
Community grievances	Ensure that public consultation and disclosure communication is completed at regular intervals to ensure that the public are fully aware of the TUSRAP works. Consultation should include all aspects of the project including the airport site, quarries and transport routes. Consultation should include all aspects of the project including the airport site, quarries and transport routes. Consultation shall include raising awareness of the project GRM, how to complain and how complaints will be managed.	All components	Minimal (part of mobilization and construction. planning)	Employer's Engineer MTET PMU	MTET PMU
Airport concessionaires /local business grievances	Ensure that local businesses and airport commissionaires are included in the public consultation and disclosure communication process. Regular communication should be made with affected parties to ensure that they are fully aware of the proposed program of works and how to complain and how complaints will be managed.	Airport	Minimal (part of mobilization and construction. planning)	Employer's Engineer	MTET PMU
CONSTRUCTION STAGE					
Traffic (vehicle and pedestrian) and construction safety	Implement the traffic management plan to ensure smooth traffic flow and safety for workers, passing vehicles and pedestrian traffic. Where appropriate, employ flag operators on the road to prevent traffic accidents. The workers shall have relevant safety equipment. Special care must be taken when construction works reach the schools and hospital. Coordination with school and hospital representatives must occur for safe passage of students and parents, and hospital visitors/ patients through a construction area. May include restricted work hours, reduced speeds and detours. The TMP should prohibit the use of engine breaking close to and through communities and inhabited areas, it should also regulate the working hours	Length of road rehabilitation	Safety equipment included in construction cost.	Construction Contractor	PMU's Consulting Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
Soil erosion	Minimize time and size of ground disturbing activities to workable size at any one time. Vegetation to be removed manually, strictly no use of herbicides/ pesticides. Division bunding or other similar methods to be used for large areas of vegetation clearance and around excavations. Keep construction vehicles on defined tracks and off the beach. Revegetate disturbed areas that are not being paved as soon as practicable (loosen ground; apply topsoil; seed or plant as necessary). No land disturbance should occur directly adjacent or in the receiving marine environment.	All locations	Minimal (part of standard construction practice).	Construction Contractor	PMU's Consulting Engineer
Waste disposal	Ensure all construction waste material is recycled or packed up for transport off island. The municipal landfill on Funafuti is not suitable for disposal of construction waste generated from the TUSRAP. Ensure areas for waste collection, recycling and off-side disposal are clearly marked/sign posted. Segregate waste to avoid cross contamination, such as with contaminated material (hazardous substance). Install waste collection facilities at construction camp to allow for collection and packing of waste. Strictly no dumping of rubbish. Include awareness training in general environmental training. Workers must be provided with a sanitary system to prevent fouling of lagoon or surrounding soils. All other hazardous waste is to be disposed of offshore in permitted or licensed facilities. It is the Contractor's responsibility to obtain all necessary permissions for transport and safe disposal of hazardous waste from the project site in a legally designated hazardous waste management site within the country or in another country, and to ensure compliance with all relevant	All locations	Minimal (part of standard construction practice).	Construction Contractor	PMU's Consulting Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	laws. Evidence will need to be supplied to the Employer's Engineer of proper disposal of waste at the final location. With the approval of the Employer's Engineer, organic biodegradable waste may be deposited in designated dumping areas in reasonable quantities which do not lead to FOD generation or allow for leachate to reach soils or groundwater. Disused Material (millings, excavation materials, concrete rubble) can either be used to backfill areas where old equipment or infrastructure has been removed or as a resource (e.g. crushed asphalt and basecourse material) for general use by MTET or PWD and the community. Clean fill materials which are not able to be reused within the timeframe of the project implementation shall be transported to a location approved by the MTET to be stored for future use by the agency. This location shall also be subject to approval by the Employer's Engineer. All surplus material from excavations shall be removed from the site area and safely disposed of in compliance with any local requirements at the Employer's nominated disposal site(s) and/or disposed of at the Contractor's quarry site(s), before the start of the defect's liability period. Unless otherwise instructed by the Employer's Engineer, other surplus materials not needed during the defect's liability period shall be removed from the site and the country. There is no reticulated sewer network on the island, septic tanks are utilized. The Contractor is responsible for the collection and treatment of the septic waste. Temporary toilets and disposal or treatment of wastewater will need				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	to be in accordance with the Department of Environment advice (for example construction and training in use of compositing toilet facilities).				
Water and soil pollution	Lubricants shall be collected and recycled if suitable. All waste lubricants shall be removed from island as hazardous waste. Spill response kits available at all locations where fuel is stored. Spill response plan training completed for all construction workers. Zones for preliminary accumulation of wastes are designated in areas that will cause no damage to the vegetation cover or leach into groundwater or the marine environment (e.g. within construction camp on hard surface). Precautions[12] should be in place to prevent wastewater and hazardous substances / materials entering the environment (e.g., fuel spillage, wastewater containing fire retardant during firefighting), however should an incident occur, the Contractor must have a spill response plan in place. The	All locations	Minimal (part of standard construction practice).	Construction Contractor	PMU's Consulting Engineer/MTET

[12] For example, wastewater management plan, spill prevention and response, best management practices, and monitoring and inspection.

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	response plan should include details on the use of spill kits and absorbent items to prevent spills entering the receiving sensitive environment (ground, surface water). This spill response plan should be applicable to all TUSRAP project works areas (airport, quarries, and transport routes). A spill response plan should be in place for both the construction phase and operational phase. Zones for preliminary accumulation of waste should be designated in areas that will cause no damage to the vegetation cover or leach into groundwater or surface water (e.g., within construction lay down area on hard surface). Excavations are bunded to prevent ingress of water runoff Sediment laden runoff from excavations or stockpiles must be directed to a settling area (not the sea or beach) or collected for dust suppression provided the runoff is not contaminated with any chemicals (e.g., fuel). Hydrocarbon impacted soil may be identified. Any material excavated which has a PID reading of 10 ppm shall be treated as contaminated fill and, should the soil be unsuitable for incineration at the landfill, it must be disposed of internationally at an approved facility able to handle contaminated fill. Any course of action must be approved of by the Employer's Engineer and the MTET, if appropriate. Rehabilitation of the construction camp area shall include scarification to loosen compacted ground as a result of stockpiles and construction of hard stand areas (including bunded areas). Any soil found to be impacted by	Funafuti Port		Vessel Captain and Construction Contractor	MTET and Harbour Master

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	hydrocarbons shall be excavated, treated as hazardous waste and removed from island for disposal at an approved facility. Minimize areas cleared of vegetation and stabilize slopes to prevent erosion. Cleared areas will be promptly revegetated. Regular cleaning of access points to prevent dirt build-up on roads. Control overland drainage to prevent channeling and sediment transport by diverting flows away from exposed areas. Sediment laden runoff from excavations or stockpiles must be directed to a settling area or collected for dust suppression provided the runoff is not contaminated with any chemicals (e.g., fuel). Discharges of treated wash water are to occur to land only, at least 500m from any bore used, if present, for potable water at a rate not exceeding 20mm/day or the infiltration rate of the ground (i.e. no ponding or runoff). If required by Department of Environment and bore owner during construction activities, sample groundwater at potable bores within 100 m of FUN (to be coordinated with Department of Environment and Water Division) to indicate whether construction activities have adversely affected groundwater quality. Measure depth to groundwater and analyses samples for concentrations of pH, electrical conductivity, TPH (for potential petroleum contamination), and total nitrogen (for potential sewage contamination), or as agreed with both agencies. Ships transporting materials and equipment are not permitted to discharge wastewater (bilge, ballast, sewage etc.) while in harbor and will be subject to				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	fines if this occurs (in accordance with the Harbours Act and Harbours Regulations).				
Generation of dust	Use closed/covered trucks for transportation of construction materials. Any vehicle which is overloaded (exceed designed load limit) or is not covered properly shall be refused entry to the construction camp or material shall be refused delivery (if not to the construction camp). Cover stockpiles containing fine material (e.g., sand and topsoil) when not actively being used. Any vehicle which is overloaded (exceed designed load limit) or is not covered properly shall be refused entry to the construction lay down area or material shall be refused delivery (if not to the construction lay down area). Cover or wet down stockpiles containing fine material (e.g., sand and topsoil) when not actively being used. Wetting of stockpiles is allowed but due to freshwater constraints should be kept to a minimum. All surfaces should be constructed to their final design solution as quickly as practicable. Keep work areas clean with regular sweeping. Due to freshwater supply constraints large scale water sprinkling should be kept to a minimum and only used near sensitive receptors (e.g., hospitals or schools). Only small areas should be cleared of vegetation at any one time and revegetation should occur as soon as practicable. Dust masks and personnel protective equipment must be available for workers during dust generating activities (e.g., pavement milling). In the vicinity of sensitive receptors particular care should be taken to ensure dust generating activities are kept to a minimum (may include different construction methodology or restricted operations). Manage speed of transportation trucks on unsealed roads, particularly	All locations	Minimal (part of standard construction practice).	Construction Contractor	PMU's Consulting Engineer/MTET

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	when passing through settlements. When unloading cargo (particularly aggregate) ensure the material is wetted to prevent dust generation and do not unload in high winds. Ideally material should be loaded directly into the delivery trucks for transport to the construction camp and correct management of stockpiles. The wetting should be done so as not to generate sediment laden runoff which has the potential to enter the lagoon and cause water pollution.				
Noise and vibration disturbances	Minimize nuisance from noise, especially closer to residential areas, through establishment and communication to affected parties of standard working hours (07:00 to 18:00, Monday to Friday) and avoid increase of noise and number of work equipment at peak hours. In consultation adjust working hours nearby schools, hospitals and other similar institutions to avoid disturbing their routine operations. If possible, use noise barriers / screens or mounds to shield sensitive receptors if required. It's likely that work at FUN will be completed at night, this will require approval by the MTET PMU and early notice to affected peoples provided and then again at least one week prior to schedule works starting. Work on Sunday is restricted. The contractor is to determine what time Saturday night works are required to end and what time early hour Monday morning works can commence. Working during the day on Sunday is likely to only be approved in emergency situations. For works outside normal hours, approval must be obtained from MTET and residents within 100 m of FUN must be notified 5 days before works take place.	All locations Funafuti Port	Minimal (part of standard construction practice).	Construction Contractor	PMU's Consulting Engineer/MTET Harbour Master and MTET

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	Any work outside prescribed hours of operation requires approval by the MTET and notice to affected peoples provided at least 24 hours prior to out of schedule works starting (work on Sunday is unlikely to be approved unless required due to safety reasons). Regularly check and maintain machinery, equipment and vehicle conditions to ensure appropriate use of mufflers, etc. Workers in the vicinity of sources of high noise shall wear necessary protection gear rated for the situation they are being used. Signage to outline complaints procedure and contact details of recipient of complaints (e.g. phone number, physical address and email). Signage to outline complaints procedure (GRM) and contact details of recipient of complaints (e.g. phone number, physical address and email). The WB/IFC EHS Guidelines9 Section 1.7 – Noise Management shall be applied. Noise impacts should not exceed the levels at the closest residential or other sensitive social receptors for one-hour LAeq of 55 dBA between the hours of 0700-2200 or 45 dBA outside of these hours for night works or result in a maximum increase in background noise levels of 3dB at the nearest receptor location off site. The nearest sensitive receptors are expected to change as the work moves along the pavements and will be				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	determined the closest residences to the active works and to the construction camps and/or asphalt plant. Activity at the Port in relation to the unloading and loading of materials and equipment which has the potential to generate noise and vibrations should be restricted to standard working hours (7am to 6pm, Monday to Friday) unless approval is provided by the Harbour Master, MTET and communicated to affected parties.				
Accident risks/Impacts on traffic safety	Arrange necessary measures for pedestrian and passer-by safety and all means of transportation safety (e.g., establish protection zones, by- pass these areas during transportation of materials, etc.) Relevant safety elements such as guardrails, road signs and delineators, pavement markings, barricades and beams, warning lights shall be installed. In some cases a flag operator or traffic control supervisor could be engaged around the specific work site.	All locations	Safety equipment included in construction cost. Minimal (part of standard construction practice).	Construction Contractor	PMU's Consulting Engineer/ MTET
Loss of archaeological artefacts or sites	Chance Find procedure to be followed as per Section 8.1.1 Work to stop in specific location of unearthed artefacts or site and MTET notified immediately for instruction to proceed.	All locations	No marginal cost	Construction Contractor	MTET

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
Landscape degradation	Restoration of landscape after completion of rehabilitation works; restore the vegetation cover in accordance with the design and consistency with surrounding land condition (e.g. grass land or shrubs). Use plant species characteristic for the landscape in the course of restoration of the vegetation cover. Should the removal of mature trees be necessary for operational safety, determine whether OP4.12 would be triggered and ensure all appropriate measures and permissions are in place before removal of trees.	All locations	Minimal (part of standard construction practice).	Construction Contractor	PMU's Consulting Engineer/ MTET

Hazardous substances and safety and pollution	Store and handle hazardous substances in bunded, hard stand or designated areas only. Bunded areas should be covered to stop rainwater entering or constructed to drain to an oil water separator which will need to be constructed or a mobile proprietary unit imported specifically for use on the TUSRAP. Bunds (secondary containment) to contain 110% of the largest container/tank required to be stored or 25% of total volume if total volume is over 1,000L. Provide hazard specific personnel protective equipment to workers directly involved in handling hazardous substances (e.g., chemical or heat resistant clothing, gloves). Complete list, including MSDS for each chemical stored or used shall be accessible at all times. Signage to be posted in storage areas identifying all chemicals present. Precautions should be in place to prevent wastewater and hazardous substances / materials entering the environment (e.g. fuel spillage, wastewater containing fire retardant during firefighting), however should an incident occur, the Contractors spill response plan must be in place. The response plan should include details on the use of spill kits and absorbent items to prevent spills entering the receiving sensitive environment (ground, surface water). This spill response plan should be applicable to all TUSRAP project works areas (airport, quarries, and transport routes). A spill response plan should be in place for both the construction phase and operational phase. Spill kits and training of use to be provided to all workers during toolbox meetings. Spill kits to contain PPE gear for the spill clean-up (e.g. gloves and overalls), material to contain the spill and absorbent pads, and a heavy-duty rubbish bag to collect absorbent pads or material. Used oil to be collected and taken off island (for disposal or cleaning at approved facility) at completion of works if no on island disposal or recycling facility available.	All locations	Safety equipment included in construction cost. Minimal (part of standard construction practice).	Construction Contractor	PMU's Consulting Engineer/ MTET

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
Loss of biodiversity	If during course of construction work, particularly vegetation clearance and excavations any bird, reptile or mammal species is identified as being potentially impacted (e.g. nesting bird in area of proposed vegetation clearance) work is to stop in the specific location of the find and the Department of Environment and MTET notified immediately for instruction to proceed.	All locations	No marginal cost	Contractor	PMU's Consulting Engineer/ MTET
Health and safety	Fully implement OHS requirements in PESMP Code of Practice. Construction camp to be fenced to prevent access by unauthorized personnel. Have safety officer with suitable qualifications available at all times during construction. Ensure all workers have undergone suitable induction training on OHS with regular training over course of project. Prepare site specific safety plans specifying responsibilities and authorities. Health and safety documentation to include all areas of the project (e.g. airport, quarries and transport routes). Ensure all occupational health and safety requirements are in place on construction sites and in work camps. Construction lay down area to be fenced to prevent access by unauthorized personnel. First aid training to be provided as required to site workers with basic first aid services to be provided by Contractor e.g. stretcher, vehicle transport to hospital. Provide education on basic hygiene practices to minimize spread of diseases. All contractors and workers to be given awareness training regarding prevention of communicable and sexually transmitted diseases (particularly HIV/AIDS). Contractor to coordinate with Ministry of Health regarding training.	All locations	Security included in construction cost. Ministry of Health (US$ Ministry of Health (US$ Included in construction costs	Contractor	PMU's Consulting Engineer/ MTET

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	Prohibit usage of drugs and alcohol on construction sites and undertake regular alcohol testing. Install lights and cautionary signs in hazardous areas. Enhance safety and inspection procedures Full PPE to be used when handling the material ready for transport.				
Damage to assets and infrastructure	Maintain high standard of site supervision and vehicle and plant operation to reduce risks of damage to water, power and telecommunication lines. Prepare procedures for rapid notification to the responsible authority (MTET. and service providers). As a result of TUSRAP construction activities any damage to assets or infrastructure must be reported to the MTET and rectified at the expense of the Contractors. Provide assistance with reinstatement, in the event of any disruption.	All locations	Dependent on asset/ infrastructure and level of damage	Contractor	PMU's Consulting Engineer/ MTET
Community grievances	Maintain the grievance response mechanism. Ensure that public consultation and disclosure communication is completed at regular intervals to ensure that the public are fully aware of the TUSRAP project program of activities and the GRM process. Consultation should include all aspects of the project including the airport site, quarries and transport routes. Signage should be used in public areas around the TUSRAP project sites advising the complaints procedure and contact details of key project individuals responsible for responding to issues raised.	All components	Minimal (part of standard construction practice)	CAD PMU Employer's Engineer Contractor	TFSU PMU's Consulting Engineer/ MTET Employer's Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
Airport concessionaires / local business grievances	Ensure that local businesses and airport commissionaires are included in the public consultation and disclosure communication process throughout the construction phase. Regular communication should be made with affected parties to ensure that they are fully aware of the proposed program of works and the GRM. Signage should be used in public areas around the vicinity of FUN advising the complaints procedure and contact details of key project individuals responsible for responding to issues raised.	All components	Minimal (part of standard construction practice)	Employer's Engineer Contractor	CAD PMU Employer's Engineer

OPERATION STAGE					
Hazardous substance management	Strictly apply and enforce manufacturer's recommendations for handling and storage. These measures include sealing of drums and avoiding extreme heat. Compliance with international good practice. Security of storage areas to facilitate transport, handling and placement to be maintained (e.g. fences and locks fixed immediately if broken or vandalized). Complete list, including MSDS for each chemical stored or used shall be accessible at all times. Signage to be posted in storage areas identifying all chemicals present. Staff to wear manufacturers recommended personnel protective equipment (e.g. gloves and overalls) when handling or mixing hazardous substances. Emergency vehicles are to be serviced and maintained at existing workshop areas.	All airport compounds	No marginal cost (standard operating procedure).	PWD (roading investment) CAD (airports)	PMU's Consulting Engineer/ MTET
Airport waste management	Development of Funafuti Airport Waste Management Plan is recommended to allow for recycling or re-using of as much waste as possible. Department of Environment should be consulted for approval to receive material that cannot be recycled, reused or returned to the supplier.	All airport compounds	No marginal cost (Standard operating procedure)	CAD Management	CAD
Use of fire retardant in ARFF	Spill response plan training to be completed for MTET workers. Precautions should be in place to prevent potentially hazardous substances entering the environment (e.g. wastewater containing fire retardant during firefighting), however should an incident occur, SAA must have a spill response plan must be in place.	All airport compounds	No marginal cost (Standard operating procedure)	CAD Management	CAD

Water or soil pollution	Workshops or maintenance areas to be fitted with bunded areas for storage of oil and fuel drums (and any other hazardous substances). Used oil drums should be returned to the suppliers or, after being cleaned, sold in secondary local market if there is demand for this. Used oils may be used for emergency drills/preparedness exercises as appropriate by ARFF.	All locations	No marginal cost (standard operating procedure).	PWD (roading investment) CAD (airports)	PMU's Consulting Engineer/ MTET
Maintenance of drainage and soakage systems	Drainage systems shall be periodically cleared of sediment and organic matter build up to ensure appropriate flows and soakage. Material to be disposed at approved site (e.g. landfill or used as clean fill) or composted if organic. Drainage systems should also be periodically visually inspected for signs of contamination (e.g. hydrocarbons from airstrip runway) to ensure that the designed system is operating appropriately. Vegetation to be cleared from drainage channels and soakage pits and composted through Transfer Station. Grass in drainage swales to be maintained at a height slightly higher than the surrounding grass on the shoulders.	All locations	No marginal cost (standard operating procedure).	PWD (roading investment) CAD (airports)	PMU's Consulting Engineer/ MTET
Wastewater management	Septic systems of the terminal and tower to be cleaned regularly and sludge disposed or treated in accordance with requirements of PWD, Department of Environment and Solid Waste Agency of Tuvalu.	Terminal and Tower	No marginal cost for current practice of disposal.	PWD (roading investment) CAD (airports)	MTET

Note: "All locations" refers to all areas in Tuvalu which will be impacted by TUSRAP activities, namely the airport (runway, terminal, control tower), the road corridor (approximately 15.5km and including the port), the port (for delivery of equipment and material), and the construction camp.

Appendix C: Monitoring Plan

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	RESPONSIBILITY
DETAILED DESIGN/ PRE-CONSTRUCTION PHASE				
Traffic safety	Design documents	Ensure TMP	Prior to sign off of final designs	PMU's Consulting Engineer
Aviation safety	Design documents	MOWP complete with details of flight schedules and emergency procedures.	Prior to sign off of final designs	PMU's Consulting Engineer
SAE, GBV and CAE	CESMP Documents	Code of Conduct training and acknowledgements have been completed as per GBV Action Plan in Appendix F.	Prior to commencing civil works	PMU's Consulting Engineer
Soil erosion	Design documents	Construction scheduled for between May and December. Designs include erosion protection measures.	Prior to sign off of final designs	PMU's Consulting Engineer
Importation of materials and equipment	Importation permits	Ensure inclusion in design and material specifications that material and equipment to be fumigated and free of contamination. Approval to import material and equipment is given prior to material and equipment leaving country of origin.	Contractor to organize prior to export from country of origin.	Contractors
CONSTRUCTION				

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	RESPONSIBILITY
Agreement for waste disposal	Construction Contractor's records	Permits and/or agreements with local waste disposal providers (e.g., Funafuti Kaupule and recycling contractor). Inspection of temporary disposal sites, if needed, as no waste will be disposed to the landfill/in the island. All waste will either be recycled or will be sent overseas. Permit and /or agreements with international waste facilities are in place (documented evidence) and correct transport containment methods are available.	Documentation viewed prior to construction works starting Weekly as applicable to schedule of works.	MTET
Soil erosion	Areas of exposed soil and earth moving	Inspections at sites to ensure silt fences, diversion drains etc. are constructed as needed. Inspection to ensure replanting and restoration work completed.	Weekly inspection as applicable to schedule of works and after site restoration.	PMU's Consulting Engineer/ MTET
Waste and hazardous waste disposal	At construction sites	Inspection to ensure waste is not accumulating and evidence waste has been stockpiled for removal from island. At the end of the project ensure there is no remaining non-recyclable or reusable material remaining.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	PMU's Consulting Engineer/ MTET

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	RESPONSIBILITY
Water and soil pollution	At construction sites Port	Inspection of sites to ensure waste collection in defined area; spill response plan in place and workers trained. Complete spill kits available where hazardous substances sorted and handled. Settling pond/control pond from washdown/ contaminated runoff and nearby water body(ies) monitoring (e.g., TPH/pH). Inspect and check with Harbour Master to determine if any ships in port have unlawfully discharged wastewater (e.g., bilge, ballast, sewage).	Weekly inspection and monitoring as associated with the schedule of works and on receipt of any complaints	PMU's Consulting Engineer/ MTET
Water Quality Testing	Ocean water adjacent to Runway Lagoon water adjacent to runway	Parameters that should be monitored include pH, electrical conductivity, total nitrogen and total petroleum hydrocarbons (TPH) or as agreed with Department of Environment	Monthly monitoring as applicable to schedule of works	Department of Environment
Dust	At construction sites and adjacent sensitive areas.	Site inspections. Regular visual inspections to ensure stockpiles are covered when not in use and trucks transporting material are covered.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	MTET

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	RESPONSIBILITY
	Port	Inspect and check with Harbour Master to ensure ship cargo unloading does not occur in high winds and loose material is wetted to prevent dust when being unloaded.		
Noise	At work sites (including Port) and sensitive locations	Site inspections to ensure workers wearing protective equipment when required. Measurement of noise level with hand-held noise meter not to exceed 80dB. Public signage detailing complaints procedure and contact people/person on display.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	MTET
Storage of fuel, oil, bitumen, etc.	At work sites and construction camp. Contractor's training log.	Regular site inspections to ensure material is stored within bunded area and spill response training for workers completed. Visual inspection of spill kit for completeness and accessibility.	Weekly as applicable to schedule of works and on receipt of any complaints.	MTET
Vehicle and pedestrian safety	At and near work sites	Regular inspections to check that TMP is implemented correctly (e.g. flags and diversions in place) and workers wearing appropriate personnel protective gear.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	MTET

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	RESPONSIBILITY
Construction workers and staff safety (personal protective equipment)	At work sites	Inspections to ensure workers have access to and are wearing (when required) appropriate personnel protective equipment (e.g. for handling hazardous materials).	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	MTET
Community safety and grievances	At work sites	Inspections to ensure signs and fences restricting access are in place and pedestrian diversion routes clearly marked (whether for access to a building or home or particular route). Monitor the GRM (including GCCT) database for the number and type of grievances and the average number of days to resolve a grievance. Contractors staff are available for training as and when required under the GBV Action Plan.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	MTET
OPERATION				
Accidents with hazardous materials or wastes	Airport sites	Accident report	Immediately after accident	Department of Environment
Traffic safety	On the road during operation	Observation of obedience of speed and other traffic regulations	Randomly by decision of the Traffic Police	PWD

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	RESPONSIBILITY
Maintenance of drainage system	On site	Inspection	When needed, particularly after storm events and during rainy season	PWD
Wastewater management	Terminal and control tower	Proper maintenance of septic system	Quarterly inspection (observation) at connection to septic system.	CAD and PWD
Solid waste collection and disposal (non-hazardous)	Terminal and control tower	Solid waste being collected and taken to approved disposal site (e.g. landfill)	To be arranged with Funafuti Kaupule and Solid Waste Agency of Tuvalu as required	CAD

Appendix D: SAMPLE CESMP Inspection Checklist

Location:	
Auditor:	
Audit Date/Time (Start):	
Audit Date/Time (Finish):	

Environmental Issue:	Inspection areas:	Requirements met?
1.0 Construction Phase		
1.1 Soil Erosion	- Silt fences and diversion drains in place - Replanting and restoration work completed	Yes ☐ No ☐ If No, details:
1.2 Waste accumulation and Disposal Agreements	- Good housekeeping around the work sites - Waste collected in defined area on impermeable ground or containers - Separation of waste into (i) Recyclable waste (i.e. certain plastics, metals, rubber etc. that can be recycled); (ii) Organic biodegradable waste (i.e. waste that will decay / break down in a reasonable amount of time, such as green waste, food waste; (iii) Inorganic non-recyclable waste (i.e. waste that cannot decompose / break down and which cannot be recycled) and, (iv) Hazardous waste (i.e. asbestos, waste oil etc.) - Hazardous waste stored in safe and appropriate manner. - Waste management plan in place and operating for proper disposal	Yes ☐ No ☐ If No, details:

Environmental Issue:	Inspection areas:	Requirements met?
1.3 Soil and Water Pollution	- Appropriate spill response plan/kit in place for waste area - No visible spills on soil or uncovered ground - Drainage and soakage systems clear and fit for purpose -	Yes ☐ No ☐ If No, details:
1.4 Dust and Materials Transport	- Stockpiles covered or kept wet when not in use - Visual inspection of ambient dust conditions on site and at nearby sensitive locations - Truck transports are covered - No evidence of aggregate spills on haulage route	Yes ☐ No ☐ If No, details:
1.5 Noise	- Workers wearing ear protection as required - Noise level maximum of 45dB between 2200-0700 - Noise monitoring results by Employer's Engineer confirm acceptable noise levels	Yes ☐ No ☐ If No, details:
1.6 Air Pollution	- Equipment operating without excessive emissions - Bitumen and asphalt plant emissions move away from nearby communities	Yes ☐ No ☐ If No, details:
1.7 Fuel, Oil and Bitumen Storage	- Substances stored in self-bunded vessels or within bund on impermeable surface - Spill kit complete and accessible - Spill training completed - No evidence of spills on the ground	Yes ☐ No ☐ If No, details:
1.8 Traffic Management Plan Implementation	- Traffic Management Plan (TMP) under effective implementation	Yes ☐ No ☐ If No, details:
1.9 Occupational Health and Safety	- Workers have access to, and using appropriate, PPE for the task. - All workers have undergone appropriate OHS training - Proper briefing of staff before undertaking work activities -	Yes ☐ No ☐ If No, details:

Environmental Issue:	Inspection areas:	Requirements met?
1.10 Community / Airport Concessionaires / Local Business Safety	- Public signage of complaints procedure - Signs and fences restrict or direct pedestrians and public where appropriate. - Staff attending SAE, GBV and CAE training as required - New employees training in and sign Code of Conduct	Yes ☐ No ☐ If No, details:
1.11 Materials Supply	- Quarry establishment and operations in fully compliance with Code of Practice - All quarries licensed to supply materials - All imported materials with appropriate biosecurity clearances	Yes ☐ No ☐ If No, details:
1.12 Asphalt Plant	- Asphalt plant established on pre-approved sites - Asphalt plant noise levels managed efficiently - Secure fencing correctly installed at asphalt plant - Asphalt plant not causing excessive odours at nearby communities - Notification of asphalt plan noise generating operation times publically displayed - Asphalt plant in clean and orderly condition	Yes ☐ No ☐ If No, details:
1.13 Lay Down Area	- Laydown areas established on pre-approved sites - Laydown areas dust levels managed efficiently - Traffic management plan correctly implemented at laydown site - Water run off management systems operating correctly - Dust management effectively implemented - PPE present and correctly used -	Yes ☐ No ☐ If No, details:

Environmental Issue:	Inspection areas:	Requirements met?
1.14 Workers Camp (if applicable)	- Camp established in accordance with Code of Practice in PESMP Annex G. - Septic system cleaned and fully operational. - Waste stored in an appropriate location in a clean and tidy manner, segregated by waste type. - Workers living and recreational areas clean and properly equipped. - OHS, HIV/AIDS, GBV and other information available	Yes ☐ No ☐ If No, details:

Actions Required:

Issue No.	Action Required? By Whom?	Date Action Required?

Signoff

Signature: ..... Date: .....

Appendix E: Consultation Report, July 2017 + July 2019

Consultation Report

Additional Funding - TUSRAP Stakeholders Consultation Minutes

10 July 2019

GOVERNMENT OF TUVALU

MINISTRY OF COMMUNICATION & TRANSPORT

TUVALU AVIATION INVESTMENT PROJECT (TvAIP)

Address: Private Mail Bag, Funafuti, TUVALU. Telephone: 20499. E-mail: faaoga@gmail.com

Date: 10th July, 2019

MINUTES

Consultation with Stakeholders - Plant Site

Venue:	TvAIP Office, Funafuti, Tuvalu		
Time:	0300pm to 0400pm		
Participants:	Dr Tapugao Falefou	-	CEO Ministry of Communication and Transport
	Ms Palipa Lauti	-	Senior Secretary - Ministry of Finance
	Mr Soseala Tinilau	-	Director of Environment
	Mr Tekita Neemia	-	Rep from PWD
	Ms Dolores Leneuoti	-	Senior Officer - Department of Lands
	Mr Uigaese Paelate	-	Director of Civil Aviation
	Mr Telaulini Niuatui	-	Airport Manager
	Mr Walter Kaua	-	Ag Director for SWAT (Water Department)
	Ms Aiga Ampelosa	-	Rep from TASNOC (Tuvalu Sport Association)
	Mr Vitoli F Iosefa	-	TvAIP Project Manager
Apologies:	Government Accountant		
	CEO for Ministry of Education and Sports		
	Sport Officer		

1. The NSC Chairman, Dr Falefou thanked all participants for their attendance and handed over to the project team to lead the consultation.

2. The Project Manager provided a brief intro on the consultation and pointed out that the reason for the meeting is to gather feedbacks from various stakeholders on the preferred site option, which will be determine during the meeting. The Project Manager together with the Rep from PWD both presented the various sites that were consider as potential sites for the plant and for stock piling of materials for the remedial works. The options are attached.

   Option 1 - Old Flight Service Tower
   - It was pointed out that there will be demolition works needed to be done on the site as well as the removal of old telecom dishes.
   - Furthermore, the participant noted that the path way for piggeries owners toward the ocean side will be block, and the further consultation with the owners, as well as the Department of Agriculture and the TANGO (Business Association) whose building are on both sides of the old flight service tower building, will be required.

   Option 2 - Far end of the Playing Field
   - This is not favorable since as it is too closed to the playing field and access paths for vehicles will be required. This may further encroach onto the playing field.

Option 3 - Near the Weight Lifting Shed

- There are piggeries near the site which may need removal, as well as vegetation.
- The site is quite small in dimension for the plant.

Option 4 - Further End of the Runway

- There will be a need for EIA to carry out as there are quite a lot of trees that may need to remove and the area is a wet land.
- Furthermore, there are a number of piggeries on the site.
- This is the least favorable site.

Option 5 - Near the New Flight Service Tower

- Participants opted for this site, since it is the most viable site for the plant only, whilst the stock pile to be somewhere else.
- It was pointed out that the project will need to get the official confirmation from the Lands Board and to note that the participants including the NSC do support this option on the basis that there will be minor implication on the environment and existing buildings.
- PWD rep indicated that temporary shed on the site can easily relocate to another site until the works have completed.
- It was noted that since the Ministry of Education was not present in the consultation, that they be informed of the project's intention.
- The project team was reminded that the contractor will need to reinstate the site to its original stage when the work has completed.
- In addition, the contractor will require to carry out any measures to ensure that pollutions, noise and etc from the plant are control properly.
- The location need to be well secure or fence, as it is near the playing ground.

Option 1 for Stock Pile - TCS Site

- This is quite far from the runway, which is toward the wharf area.
- It is a private land, which proper consultation and lease agreement with the land owners will required.

Option 2 for Stock Pile - At the end of Runway 03

- The site was previously use by the government, which is ideal to be use for the remedial work of the runway.
- The area need to be well secure since it is near residential houses.
- It is on government lease land.
- The Director of Civil Aviation did advised that the location does not have any implication to flight operations, which has been noted in GNSS Approaches for flight. They will be publishing a NOTAM during the duration the site is being use.
- The contractor is to ensure that the height of stock piles are restricted to 1.6m at all times.
- Further stock pile areas to be alongside the runway and as long as it is 50m from the centerline of the runway and height restrictions should be at the maximum height of 1.6m. These can be determine when the need arise and should be at the approval of the Director of Civil Aviation.

3. The consultation concluded with remarks from the Project Manager, thanking the participants for their attendance and reminded that project team will be liaising with the Ministry of Education and Sports and the Lands Management Board as have discussed.

Meeting ended at 0410pm.

Tuvalu Aviation Investment Project (TvAIP)

Date: 26 July 2017

A. Introduction

In 2013 and in 2016 additional IDA grants in an amount of US$6.06 million equivalent and US$2.88 million equivalent were provided. The objective of the first Additional Finance (AF1) was to scale up the ongoing TUSRAP to support the resurfacing of roads on Fongafale Island which provide access to Funafuti airport and the building of a water cistern under the terminal. The second (AF2) was to address a funding gap under the project and extend the closing date.

The additional financing (AF3) currently sought will cover a drainage system for the newly refurbished runway to alleviate blistering and depressions caused by venting of air pressure and exacerbated by major tidal rises. Also covered under AF3 is a budget shortfall of USD$0.5 million, gender-based violence, child protection, occupational health & safety and environmental monitoring tools and training. AF3 will also finance the piloting of a number of tools to improve Environmental and Social Management Plan (ESMP) monitoring in projects.

The GoT prepared an Abbreviated Resettlement Action Plan (ARAP) to address expired leases covering the airport land and all landowners have agreed to renew their leases. During community consultations, the Funafuti Village Council Leader reminded TUSRAP that the land leases will expire in September 2017. The TUSRAP Office is working together with the GoT to ensure leases are paid and completed.

The GoT did not follow the provisions of the Resettlement Policy Framework with regard to compensating project affected people prior to cutting down trees but has moved expeditiously to address this and all payments to identified owners have been made, with only a small number of outstanding claims unpaid, awaiting clarification of ownership.

A Mission from the PAIP TFSU office visited the Tuvalu Aviation Investment Project from 22-27 July to confirm and scope out the issues pertaining to drainage problems with the current runway.

B. Community Consultations

The community consultations were conducted on 26 July and included Government, WB Liaison for Tuvalu, NGOs, Churches, Businesses surrounding the runway, Women Groups, Village Council Leaders, and the TUSRAP team. In attendance was approximately 50 stakeholders.

Vitoli Iosefa, Project Manager TUSRAP, gave an overview of TUSRAP activities including a question-and-answer session that was interactive and lively. Vitoli did an excellent job in answering questions and clarifying project misconceptions

Jeevan George, Resident Engineer, also gave an update on the Terminal Building including timelines for expected completion and some general details of the building.

Malakai Kaufusi, Safeguards Specialist, gave an overview of the ESMP and focused on the additional funding for drainage, runway issues, and options as outlined by the Auckland University report, also discussed was environmental and social impacts from additional works. During the question-and-answer session we were able to answer the timeline of the additional funding, availability of the updated ESMP, and confirm the GRM process to file a complaint.

To note, the Funafuti Council Leader reminded the Team that the runway is built on leased land and the lease will expire in September 2017. The Council Leader was referring to the Memorandum of Agreement (MOA) entered into between the Landowners and the Government of Tuvalu as an interim land lease agreement to allow Government to proceed with Runway upgrade work. The MOA will expire in September 2017.

C. Conclusion

The Community Consultation will be used to complete the updated ESMP and will be reviewed with the Bank and TUSRAP team. The issue with the leased land and the expiration date of September 2017 will be addressed urgently with the GoT.

Community Engagement and Consultation Program
Venue TBD

Wednesday, 26 July 2017
Funafuti, Tuvalu

Agenda

OPENING/WELCOME	
9:30	Opening prayer
9:35	Welcome, review agenda, and introductions
9:40	Speech: Ministry of Communication and Transport
9:50	***Coffee/Tea Break***
SESSION 1. INTRODUCTION AND OVERVIEW OF TVAIP ACTIVITIES	
10:10	Project Manager Overview of Consultation
10:30	Reeves Overview and Timelines of Works
11:00	Safeguards and ESMP Overview
11:30	Q&A and open dialogue
12:30	***LUNCH (to be provided at meeting venue)***
1:00	END

Tuvalu Aviation Investment Project

Environment and Social Management Program (ESMP) Public Consultation Minutes

Wednesday, July 26, 2017

0930 am – 1300 pm

Chairman: MR Tuafafa Latasi

Opening Remarks

Opening Prayer by REV Tafue Lusama (EKT)

Introduction by MR Latasi and confirming of agenda. Apologies on behalf of the Acting Permanent Secretary for MCT, MR Falasese Tupau, as other urgent matters have caused his absence.

The original ESMP was prepared in 2011 as a requirement for TUSRAP. An additional finance is currently being sought from WB to finance amongst other activities the planned remedial work on the runway. WB requires that the current ESMP be updated before the Appraisal Mission arrive in Aug 2017 to carry out consultation with the Government of Tuvalu. For this purpose Mr. Malakai Kaufusi the Safeguard Specialist has been brought in to assist and support TUSRAP with this public consultation.

Mr. Vitoli Iosefa's Presentation on the Tuvalu Aviation Investment Project (TUSRAP). He provided a brief background and objectives of TUSRAP. He also provided an overview of the completed, ongoing and future activities funded by WB through TUSRAP. This Public consultation is held to update the current ESMP which is a requirement for the additional finance consultation.

The open dialogue and Q & A follows:

Questions

Customs

Q1: Is there World Bank assistance in regard to scanning machines for passengers and luggage?

A1: There has been security screening equipment that has been procured under the project. Though, so far, no luggage scanning machine has been procured.

Q2: Is it possible for World Bank to provide such an equipment?

A2: Yes, your request will be noted.

World Bank Liaison Officer

Q3: Is $21 million the budget or total amount of money spent to date?

A4: $21M is the budget So far $18 million has been spent.

Q4: How many additional finances have been requested by TUSRAP?

A4: There have been 2 previous additional finances.

Q5: How much for each additional finance?

A5: The first was approximately USD$6 million and the second was USD$2.8 million

Q6: How much is for the proposed additional finance?

A7: This additional finance is approximately USD$7 million.

Q8: Will this additional finance be for repairs or additional activities?

A8: It will be for ongoing and new activities, though priority will be from the Government.

Q9: It seems that the original plans were to improve airport operations, but are there any plans for increasing the size of the runway or relocating it to another island/area?

A9: It has been raised before, and feasibility studies can be conducted on the relocation or increasing of runway size, but the focus now is improving aviation operations.

Q10: The big picture from this project is so that Tuvalu can benefit as a whole, such as increasing tourism to lead to a better economy. Are there any plans by MCT on how to proceed with this?

A10: This is a matter for government to decide.

Gender Department

Q11: How were the locations of the new streetlights chosen?

A11: The locations were indicated by the Tuvalu Electric Company (TEC).

World Bank Liaison

Q12: In regard to the missing equipment, what further steps are to be taken with this matter?

A12: In previous World Bank missions, there have been requests to the Government to compensate/replace the equipment, specifically those that are missing. Though the TUSRAP team are conducting ongoing inspections, which have found most of this missing equipment, which were misplaced. PWD still has no maintenance or logging system yet.

EKT (Tuvalu Church)

Q13: There are instances in which planes have to take off again due to dogs or other animals on the runway. Are there any methods to reduce this, such as a fence?

A13a: Currently, there is a Wildlife Implementation Program that is still in the works, which will focus not only on dogs, but pigs and vegetation.

A13b: World Bank Liaison: A reason why a fence is not practical, is because of the usage of the runway by locals, and building a fence can affect the local society.

DWM

Q14: How are the equipment procured by the project maintained?

A14a: The equipment that is procured by the project, especially the bigger ones, calibration and training of operation and maintenance are provided so that when it is handed over, the ministry or organization is fully equipped to take care of the equipment.

A14b: WB has earlier flagged the idea of establishing a pool of funds to which the Government of Tuvalu contribute by way of committing a certain % of its IDA allocation over (say) a five-year period. The purpose of the fund is for meet long term maintenance and sustainability costs of assets.

TuFHA

Q15: In regard to additional roads, is the road on the opposite side of the runway included? (Near TuFHA, TEC, MET, etc.)

A15: Feasibility studies were conducted before with the budget in mind, concluding that constructing a road on that side will be over the budget for which was taken out.

Police

Q16: Will there be actions to separate the fire department, currently under the police department, to be on its own or to be with civil aviation?

A16: That will be up to the Government, though while having a current minimum of 3 flights a week, it would seem difficult/unnecessary.

Q17: Can roads be constructed near runway to create easier access for the public to cross? And the current aviation department uses police communication devices, would they be able to purchase their own?

A17a: This would be up to the Government and their priorities.

A17b: Request is noted MCT and WB to consider.

MET

Q18: Are there any plans in repairing and maintaining of the MET equipment purchased under TUSRAP?

A18: The current equipment is under the Defects Liability Period, in which the contractor is obligated to repair. It will be noted that an official handing over letter should have been made from the MCT to your department regarding the equipment, since MCT is the IA of TUSRAP.

Gender

Q19: I've noted that there not a lot of female workers in the current contracts you have ongoing. Would it be possible to increase the number of women?

A19a: When registration was announced for workers on these new contracts, there are a lot of females who signed up and their skills are noted.

A19b: Local contractor are encouraged to recruit women.

TEC

Q20: In regard to the usage of roads near the runway, would it be possible to have a better visible way of indicating that the roads are closed off? Such as sign boards.

A20: Yes, your request will be noted to assist the public, in which MCT will have to act on.

DWM

Q21: There has been work under TUSRAP regarding the cutting down of trees, in which DWM collects, which creates a huge workload for our workers. Can World Bank assist in purchasing a wood chip cutting machine to help chop up these bigger trees/vegetation?

A21: TUSRAP will raise this with the MCT and WB.

TuFHA

Q22: Will the Passenger Disability Ramp be ready by the opening of the new terminal?

A22: The ramp has been tendered out with one bidder received, though it does not meet most of the specifications. If the bidder cannot meet this specification, then it will be tendered out again. Hence, it will be impossible at that time, but it will certainly eventuate in a near future.

World Bank Liaison.

Q23: With regards to the new roads, it seems it would be better if a new road can be built on the other side of the runway, as most of the public uses it to feed their pigs, and access to PWD, MET, TEC, and other organizations.

Q24: Personally, the road to be built near the Tausoalima area, is better off left unpaved, and to use the additional finance for the road on the other side of the runway.

A24: Remarks is noted for MCT and WB to consider.

Health

Q25: There have been instances in the past in which the boarding of sick/disabled passengers on to the plane have caused flight delays. How fast can the disabled passenger ramp arrive to minimize these types of incidents?

A25: As stated before, the procurement process for this equipment is still ongoing.

Q26: With the current terminal building, there are times when passengers skip over the health department check on arrival or when caskets arrive and are not properly checked. Is there a room allocate in the new building for these health checks?

A26: All authorities have an allocated room in the new terminal.

Police

Q27: To add on to the previous question, is there a room for police? And can police enter at any time in the terminal?

A27a: Security of the airport is being done by a private firm, which they have a room. As for Police, unfortunately they don't have any.

A27b: Under Civil Aviation laws, only authorized personnel are permitted to enter, unless there is an emergency or a warrant, then police can intervene. However, under normal operations, airport security will enforce security.

Tuvalu Travel

Q28: Can World Bank procure a trolley with wheels to assist with baggage handling by airport staff?

A28: The request will be noted.

World Bank Coordinator

Q29: Since the sports ground is near the runway, can the resurfacing or paving running lanes be included in this additional finance?

A29: Noted for WB and MCT to consider.

TEA BREAK

Jeevan George's (the Resident Construction Engineer) presentation on his work with the terminal and other aspects of the project.

Malakai's presentation introducing the ESMP and the activities under the additional finance, especially with focus on the environment and social side.

Questions

Environment

Q30: Is the ESMP still in the consultation or final stage?

A30: Still in the reviewing consultation stage, where it is in the process of updating the previous ESMP to include new activities and additional finance.

Q31: Will there be a consultation to involve communities?

A31: In addition to this consultation, there will be an additional consultation for individual communities to take place around August. Input will be taken from them to update the original ESMP in 2011 which is in review and to be updated.

Q32: Is the original ESMP available to the public?

A32: Yes, it is available to the public through the website: www.TUSRAP.com or if requested to the TUSRAP. Also, it is available in the Dept of Environment and the Local Library.

Funafuti Kaupule

Q33: Thank you for including the local council in this consultation as it provides an opportunity to air one of the critical issues that will affect future development under TUSRAP. The Runway is built on leased lands, but the leases will expire in September 2017, what are the plans to address this

A33: V: The [Funafuti Kaupule rep] is referring to the Memorandum of Agreement (MOA) entered into between the Landowners and the Government of Tuvalu as an interim land lease agreement to allow the former to proceed with Runway upgrade work. The MOA will expire in September 2017. This is an issue beyond the scope of TUSRAP and for the government of Tuvalu to address.

Gender

Q34: In regard to the terminal, is there an area for access of the public to say farewell to departing passengers/welcome arriving passengers?

A34: MR George: There is an external veranda in which the public has access to.

Funafuti Kaupule

Q35: Please take note that it is no longer allowed to collect aggregate from ocean side but can be purchased from the Funafuti Kaupule imported aggregate.

A35: Normal practice will take place, but contractor will be informed.

EKT

Q36: Was someone from the Environment department included in the initial ESMP?

A36: Yes, they were included and are a part of the National Steering Committee. They reviewed and translated it.

Q37: In regard to drainage on the runway, and Tuvalu's shortage of water, would it be possible to collect and store the water for other purposes?

A37: Engineers will come in and provide a design for which consultation will take place again. However, that remark is noted for WB and MCT consideration.

Education

Q38: Can the Vaiaku preschool teachers and parents be involved in future consultations as planes tend to arrive and depart during school hours?

A38a: TUSRAP is providing consultation relating to the project

A38b: In regard to flight operation, DCA should be responsible for providing that, which is quite important.

Police

Q39: Can there be funds for awareness programs for police as well?

A39: There is a draft emergency plan for Funafuti aerodrome, in which DCA will need to do awareness program on it. Your request will be noted for MCT and DCA to work on.

EKT

Q40: To add on to previous comments, can there be a way for the public to know when the roads are closed? For example, flags could be raised on the ends of the runway.

A40: Your request will be noted for DCA to consider.

Funafuti Kaupule

Q41: We recently heard that there were damages to the PAPI lights? How will they be fixed/What are the further steps?

A41: The airport manager has filed a report with police and have found that though damaged, nothing is missing. Further actions will be taken to ensure its operations.

Q42: Is there public awareness for dog control?

A42: Airport manager has had meetings with the dog control unit under the Kaupule on further actions to be taken. This is also included in the ongoing Wildlife Implementation plan.

Health

Q43: There is a mention of water waste in one of the slides. Can the World Bank assist in terms of acquiring an equipment to assist with the sanitation department regarding issues they have with the septic tank drainage pump?

A43a: PWD REP: A new tractor with drainage pump for septic tanks is currently going through the procurement process.

A43b: However, this is noted for WB consideration.

TuFHA

Q44 Can visible signs for the public be made so that they are aware of when it is prohibited to use the road near the runway?

A44: Your request will be noted by TUSRAP for WB and MCT to consider.

Police

Q45: Would it be possible to use/employ people who do not attend school, to assist with runway operations, especially given the lack of employees in the police and civil aviation department?

A45: Request is noted for further consideration by MCT and WB.

Tuvalu Travel

Q46: If the amount is not finished in IDA allocation, what will happen to the funds?

A46: It will usually roll over to another consecutive period of the IDA.

Fusialofa

Q47: Would it be possible for Civil aviation to use sign language or be taught on sign language to assist those with disability?

A47: Yes, your request will be noted and brought up with MCT & WB for their consideration.

LUNCH

END: 1200 pm

Mr. Vitoli presenting on ESMP (far left table), with Mr. Tuafafa Latasi.

Mr. Malakai Kaufusi presenting on the ESMP (Standing), with Mr. Jeevan George.

Appendix F: SEA/SH, GBV and CAE Action Plan and Codes of Conduct

TUVALU AVIATION INVESTMENT PROJECT (TUSRAP) ACTION PLAN TO PREVENT SEXUAL EXPLOITATION AND ABUSE/SEXUAL HARRASSMENT, GENDER BASED VIOLENCE AS WELL AS CHILD ABUSE/EXPLOITATION

A. Background

The purpose of this Tuvalu Aviation Investment Project (TUSRAP) Action Plan to Prevent Sexual Exploitation and Abuse/Sexual Harrassment (SEA/SH), Gender-based Violence (GBV) and Child Abuse/Exploitation (CAE) is to introduce a set of key definitions and guidelines that establish mechanisms for reporting, addressing, monitoring and sanctioning SEA, GBV and CAE within the work site and in its immediate surrounding communities.

Mutual respect and fair treatment by all parties, that include an understanding of the impact their presence has on the communities living in the areas targeted by the project, are deemed of utmost importance to create a respectful, pleasant and productive work environment. This will help prevent issues of SEA, GBV and CAE, thereby guaranteeing a safe environment to work in and around. The Action Plan also present clear guidelines for sanctions of staff should they be warranted. By ensuring that the project's staff respect the project environment and its communities, a successful attainment of the project objectives will be achieved.

1. Definitions

The following definitions apply:

- **Sexual Exploitation and Abuse/Sexual Harrassment (SEA/SH**) – any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. In Bank financed operations/projects, sexual exploitation occurs when access to or benefit from a Bank financed Goods, Works, Non-consulting Services or Consulting Services is used to extract sexual gain.
- **Gender-Based Violence (GBV)** – is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed (i.e., gender) differences between males and females. It includes acts that inflict physical, sexual[13] or mental harm or suffering, threats of such acts, coercion, and other deprivations of liberty. These acts can occur in public or in private.
- **Child Abuse and Exploitation (CAE)** – is defined as physical, sexual or psychological harm of minor children (i.e., under the age of 18) including using for profit, labor, sexual gratification, or some other personal or financial advantage. This also includes other activities such as using computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children or to access child pornography through any mediums.

[13] Sexual favors or other forms of humiliating, degrading or exploitative behavior is prohibited.

- **Child Protection (CP)** - An activity or initiative designed to protect children from any form of harm, particularly arising from CAE.
- **Child** – is used interchangeably with the term 'minor' and refers to a person under the age of 18. This is in accordance with Article 1 of the United Nations Convention on the Rights of the Child.
- **Grooming** – is defined as behaviors that make it easier for a perpetrator to procure a child for sexual activity. For example, an offender might build a relationship of trust with the child, and then seek to sexualize that relationship (for example by encouraging romantic feelings or exposing the child to sexual concepts through pornography).
- **Online Grooming** – is the act of sending an electronic message with indecent content to a recipient who the sender believes to be a minor, with the intention of procuring the recipient to engage in or submit to sexual activity with another person, including but not necessarily the sender. For further details, refer to the Criminal Code Act 1995, Division 474 (telecommunications offences, subdivision C).
- **Survivor/Survivors** – is defined as the person(s) adversely affected by GBV or CAE. Women, men and children can be survivors of GBV; children can be survivors of CAE.
- **Perpetrator** – is defined as the person(s) who commit(s) or threaten(s) to commit an act or acts of GBV or CAE.
- **Work site** – is defined as the area in which infrastructure development works are being conducted, as part of interventions planned under the World-Bank funded Tuvalu Aviation Investment Project (TUSRAP).
- **Work site surroundings** – are defined as the 'Project Area of Influence' which are any area, urban or rural, directly affected by the project, including all human settlements found on it.
- **Consent** – is defined as the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained through the use of threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even in the event that national legislation of the country into which the code of conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.
- **Contractor** – is defined as any firm, company, organization or other institution that has been awarded a contract to conduct infrastructure development works in the context of the TUSRAP and has hired managers and/or employees to conduct this work.
- **Consultant** – is defined as any firm, company, organization or other institution that has been awarded a contract to provide consulting services in the context of the TUSRAP and has hired managers and/or employees to conduct this work.
- **Manager** – is defined as any individual offering labor to the contractor or consultant, on or off the work site, under a formal employment contract and in exchange for a salary, with responsibility to control or direct the activities of a contractor's or consultant's team, unit, division or similar, and to supervise and manage a pre-defined number of employees.
- **Employee** – is defined as any individual offering labor to the contractor or consultant within country on or off the work site, under a formal or informal employment contract or arrangement,

typically but not necessarily in exchange for a salary (e.g., including unpaid interns and volunteers), with no responsibility to manage or supervise other employees.

- **Grievance Response Mechanism (GRM)** – the process established by the TUSRAP project to receive and address complaints (see www.TUSRAP.com)
- **SEA, GBV and CAE Allegation Procedure** – is defined as the prescribed procedure to be followed when reporting incidents of SEA, GBV or CAE.
- **Accountability Measures** – is defined as the measures put in place to ensure the confidentiality of survivors and to hold contractors, consultants and the PMU responsible for instituting a fair system of addressing cases of SEA, GBV and CAE.
- **Response Protocol** – is defined as the mechanisms set in place to respond to cases of SEA, GBV and CAE.
- **SEA, GBV and CAE Compliance Team:** A team established by the contractor and/or consultant to address SEA, GBV and CAE issues with the work force.

2. Codes of Conduct

This chapter presents a Code of Conduct for use:

- **Company Code of Conduct**: Commits the company to addressing SEA, GBV and CAE issues.

The company is obliged to create and maintain an environment which prevents sexual exploitation and abuse/sexual harrassment (SEA/SH), gender-based violence (GBV) and child abuse/exploitation (CAE) issues, and where the unacceptability of SEA/SH, GBV and actions against children are clearly communicated to all those engaged on the project. In order to prevent SEA/SH, GBV and CAE, the following core principles and minimum standards of behavior will apply to all employees without exception:

a. SEA/SH, GBV or CAE constitutes acts of gross misconduct and are therefore grounds for sanctions, penalties and/or termination of employment. All forms of SEA/SH, GBV and CAE including grooming are unacceptable be it on the work site, the work site surroundings, or at worker's camps. Prosecution of those who commit SEA/SH, GBV or CAE will be pursued if appropriate.
b. Treat women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
c. Do not use language or behavior towards women, children and men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
d. Sexual activity with children under 18—including through digital media—is prohibited. Mistaken belief regarding the age of a child and consent from the child is not a defense.
e. Sexual favors or other forms of humiliating, degrading or exploitative behavior is prohibited.
f. Sexual interactions between the company's employees at any level and member of the communities surrounding the workplaces that are not agreed to with full consent[14] by all parties

[14] Consent is defined as the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained through the use of threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers

involved in the sexual act are prohibited. This includes relationships involving the withholding/promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex – such sexual activity is considered "non-consensual" within the scope of this plan.

g. All employees, including volunteers and sub-contractors are highly encouraged to report suspected or actual SEA/SH, GBV and/or CAE by a fellow worker, whether in the same company or not. Reports must be made in accordance with SEA/SH, GBV and CAE Allegation Procedures.
h. All employees are required to attend an induction training course prior to commencing work on site to ensure they are familiar with the Code of Conduct provided in the bid package.
i. All employees must attend a mandatory training course once a month for the duration of the contract starting from the first induction training prior to commencement of work to reinforce the understanding of the institutional SEA/SH, GBV and CAE Code of Conduct.
j. All employees will be required to sign an individual Code of Conduct confirming their agreement to support SEA/SH, GBV and CAE activities.

The company has responsibilities to create and maintain an environment that prevents SEA/SH, GBV and CAE. They need to support and promote the implementation of the Company Code of Conduct. This commits them to support and develop systems that facilitate the implementation of this action plan and maintain a SEA/SH and GBV-free and child-safe work environment. These responsibilities include but are not limited to:

3. Compliance Team and Development of Action Plan

i. Appoint the Contractor's SEA/SH, GBV and CAE Focal Point. This will typically be the contractor's occupational health and safety manager. This person will:
    a. Represent the Contractor on the SEA/SH, GBV and CAE Compliance Team (GCCT) which is comprised of representatives from MTET, contractor(s), the supervision consultant, and local service provider.
    b. Participate in training of staff to sensitize them to their responsibilities the Code of Conduct; and,
    c. Be trained and empowered to undertake any investigations of staff members alleged to have minor violations of the Code of Conduct and ensure sanctions are applied as appropriate. For major violations the Focal Point must appropriately refer the complaint to: (i) a local service provider; (ii) the authorities; and/or, (iii) management for further action.

Work on SEA/SH, GBV and CAE will be recognized in employee's scope of work and performance evaluations.

ii. The GCCT will prepare an **Action Plan** for implementation by the contractor, based on the outline plan in Section 4 below. The Action Plan will be included in the C-ESMP and shall, as a minimum, include:

that consent cannot be given by children under the age of 18, even in the event that national legislation of the country into which the code of conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.

a. **SEA/SH, GBV and CAE Allegation Procedure** to report SEA/SH, GBV and CAE issues through the project Grievance Response Mechanism (GRM);
b. **Accountability Measures** to protect confidentiality of all involved; and,
c. **Response Protocol** applicable to SEA/SH and GBV survivors/survivors and perpetrators.

4. Implementation

i. Ensure that all staff receive a clear written statement of the company's requirements with regards to preventing SEA/SH, GBV and CAE in addition to the training.
ii. To ensure maximum effectiveness of the Company and Individual Codes of Conduct
    a. Prominently display the Codes of Conduct in clear view in public areas of the workspace. Examples of areas include waiting, rest and lobby areas of sites, canteen areas, health clinics.
    b. All posted and distributed copies of the Company and Individual Codes of Conduct should be translated into the appropriate language of use in the work site areas (ex. Tuvaluan, English).
iii. Verbally and in writing explain the Company Codes of Conduct to all staff.
iv. Promote internal sensitization initiatives (e.g. workshops, campaigns, on-site demonstrations etc.) throughout the entire duration of their appointment in collaboration with the GCCT and in accordance to the Action Plan.
v. Ensure that:
    a. All managers and employees sign the 'Code of Conduct', including acknowledgment that they have read and agree with the code of conduct;
    b. Staff lists and signed copies of the Code of Conduct are provided to the GCCT and MTET;
    c. Participate in training as outlined below;
    d. Staff are familiar with the TUSRAP GRM and that they can use it to anonymously report concerns over SEA/SH, GBV and CAE (See Section 4.2 in the Action Plan).
    e. Staff are encouraged to report suspected or actual SEA/SH, GBV and/or CAE through the GRM.
vi. In compliance with applicable laws and to the best of your abilities, prevent perpetrators of sexual exploitation and abuse from being hired, re-hired or deployed. Use background and criminal reference checks for all employees.
vii. Ensure that when engaging in partnership, sub-grant or sub-recipient agreements, these agreements:
    a. incorporate the TUSRAP Codes of Conduct as an attachment;
    b. include the appropriate language requiring such contracting entities and individuals, and their employees and volunteers, to comply with the TUSRAP Codes of Conduct; and,
    c. expressly state that the failure of those entities or individuals, as appropriate, to take preventive measures against SEA/SH, GBV and CAE, to investigate allegations thereof, or to take corrective actions when GBV and/or CAE has occurred, shall

constitute grounds for sanctions and penalties in accordance with the TUSRAP Codes of Conduct.

viii. Provide support and resources to the GCCT to create and disseminate the internal sensitization initiatives through the Awareness-raising strategy under the Action Plan.

ix. Any major issue with regard to SEA/SH, GBV or CAE warranting police action shall be reported to MTET and the World Bank immediately.

5. Training

i. All managers are required to attend an induction manager training course prior to commencing work on site to ensure that they are familiar with their roles and responsibilities in upholding the SEA/SH, GBV and CAE Codes of Conduct. This training will be separate from the induction training course required of all employees and will provide managers with the necessary understanding and technical support needed to begin to develop the Action Plan for addressing SEA/SH, GBV and CAE issues.

ii. Ensure that time is provided during work hours and that staff attend the mandatory TUSRAP facilitated induction SEA/SH, GBV and CAE training required of all employees prior to commencing work on site.

iii. Ensure that staff attend the monthly mandatory refresher training course required of all employees to combat increased risk of SEA/SH, GBV and CAE during civil works.

iv. Managers are required to attend and assist with the TUSRAP facilitated monthly training courses for all employees. Managers will be required to introduce the trainings and announce the self-evaluations.

v. Collect satisfaction surveys to evaluate training experiences and provide advice on improving the effectiveness of training.

6. Company Manager Response

i. Managers will be required to provide input, final decisions and formal adoption of the SEA/SH, GBV and CAE Allegation Procedures and Response Protocol developed by the GCCT as part of the final cleared Action Plan.

ii. Once adopted, managers will uphold the Accountability Measures set forth in the Action Plan to maintain the confidentiality of all employees who report or (allegedly) perpetrate incidences of SEA/SH, GBV and CAE (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law).

iii. If a manager develops concerns or suspicions regarding any form of SEA/SH, GBV or CAE by one of his/her direct reports, or by an employee working for another contractor on the same work site, s/he is highly encouraged to report the case using the identified reporting mechanism.

iv. Once a sanction has been determined, the relevant manager(s) is/are expected to be personally responsible for ensuring that the measure is effectively enforced, within a maximum timeframe of 14 days from the date on which the decision was made.

v. Managers failing to comply with such provision can be in turn subject to disciplinary measures, to be determined and enacted by the company's CEO, Managing Director or equivalent highest-ranking manager. Those measures may include:

a. Informal warning
b. Formal warning
c. Additional Training
d. Loss of up to one week's salary.
e. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
f. Termination of employment.

vi. Ultimately, failure to effectively respond to SEA/SH, GBV and CAE cases on the work site by the contractor's managers or CEO may provide grounds for legal actions by authorities.

7. Sanctions

The project has established a 'GBV and CAE Compliance Team' (GCCT) which is comprised of representatives from MTET, contractor and supervision consultant. The GCCT and/or the local service provider will oversee any investigation of grievances against the employee with regard to GBV and CAE, according the accused procedural fairness and within the local laws. If an employee has breached the Code of Conduct, the employer will take disciplinary action which could include:

- Informal warning;
- Formal warning;
- Additional Training;
- Loss of up to one week's salary;
- Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months; or,
- Termination of employment.

In addition to the above, if warranted, report the employee to the Police as per local legal paradigms.

I do hereby acknowledge that I have read the foregoing Code of Conduct, and on behalf of the company agree to comply with the standards contained therein. I understand my role and responsibilities to prevent and respond to GBV and CAE. I understand that any action inconsistent with this Code of Conduct or failure to take action mandated by this Code of Conduct may result in disciplinary action.

Company name: Title:

Signed by: Date:

8. Action Plan

Implementation Roles & Responsibilities

8.1 Prevention

8.1.1 SEA/SH, GBV and CAE Compliance Team & Code of Conduct Action Plan

The project shall establish a 'SEA/SH, GBV and CAE Compliance Team' (GCCT) to create an Action Plan to coordinate and monitor the contractor's and consultant's response to impacts of SEA/SH, GBV and CAE in the workplace. The GCCT will include, as appropriate to the business, at least four representatives from the following:

a. A E&S risk management specialist representing MTET or another representative of the GoT;
b. The occupational health and safety manager from the contractor[15];
c. The supervision consultant's Resident Engineer; and,
d. A representative from a local service provider with experience in SEA/SH, GBV and CAE.

The terms of reference for the GCCT shall, among others, clearly indicate roles and responsibilities for the GCCT members. It will be the duty of the GCCT with support from the management to inform employees about the activities and responsibilities of the GCCT. GCCT members must undergo training by the local service provider prior to the commencement of their assignment.

The GCCT will be required to:

a. Finalize the draft SEA/SH, GBV and CAE Codes of Conduct contained in this document.
b. Prepare the Action Plan which includes:
    i. SEA/SH, GBV and CAE Allegation Procedures (See 4.3)
    ii. Accountability Measures (See 4.4)
    iii. An Awareness raising Strategy (See 4.5)
    iv. A Response Protocol (See 4.6)
c. Obtain approval of the Action Plan by company management;
d. Obtain MTET and World Bank clearances for the final Codes of Conduct and Action Plan prior to full mobilization;
e. Receive and monitor resolution and sanctions with regard to complaints received related to SEA/SH, GBV and CAE associated with the TUSRAP Project; and,
f. Ensure that SEA/SH, GBV and CAE statistics are updated and included in the regular project reports.

[15] Where there are multiple contractors working on the project, each shall nominate a representative as appropriate

The GCCT shall hold quarterly update meetings to discuss ways to strengthen resources and SEA/SH, GBV and CAE support for employees and community members.

8.1.2 Grievance Response Mechanism (GRM) GRM SEA/SH, GBV and CAE Focal Point

TUSRAP operates a grievance response mechanism (GRM) with an online portal at www.TUSRAP.com. Reports of GBV, complaints, or other concerns may be submitted online, via telephone or mail, or in person.

The GRM operator will refer grievances to the appropriate party to resolve them. If a complaint on GBV or CAE is made through the GRM, it will be referred to the GCCT who will investigate the complaint and provide the GRM operator with a resolution to the complaint according to the Action Plan. The GRM operator will, upon resolution, advise the complainant of the outcome, unless it was made anonymously. Complaints made to managers, or the local service provider will refer to the GRM process for further action.

While the local service provider is available at all times to provide support, grievance resolution involving Contractor's staff will be the responsibility of the **Contractor's SEA/SH, GBV and CAE Focal Point**[16]. The GCCT will refer the grievance to the focal points for resolution and will advise on potential resolutions.

The Focal Point must be trained and empowered to resolve minor SEA/SH, GBV and CAE issues. In major cases of SEA/SH, GBV and CAE, the SEA/SH, GBV and CAE Focal Point must appropriately refer the complaint to: (i) a local service provider; (ii) the authorities; and/or, (iii) management for further action. For PMU staff, the MTET E&S risk management appointee to the GCCT (or their delegate) will be responsible for resolving grievances.

It is essential that all staff of the GRM, GCCT and Focal Points understand the guiding principles and ethical requirement of dealing with survivors of SEA/SH, GBV and CAE. All reports should be kept confidential and referred immediately to local service providers[17].

8.1.3 Local Service Provider

The PMU, the Contractor and Consultant must establish a working relationship with a local service provider, so that SEA/SH, GBV and CAE cases can safely be referred to them, and for support to their Focal

[16] The Contractor's GBV and CAE Focal Point will be identified by the Contractor and will typically be the contractor's occupational health and safety manager.

[17] Survivors of GBV and CAE may need access to police, justice, health, psychosocial, safe shelter and livelihood services to begin on a path of healing from their experience of violence.

Points. The local service provider will be invited to nominate one representative who will also form part of the GCCT established by the project.

The GRM will automatically record information on grievances as part of the project GRM reporting framework. The GRM operator and local service provider will collect reports/complaints made/lodged by community members on potential SEA/SH, GBV and CAE cases experienced in the work site surroundings, and submit them through the GCCT for further action, or the police if necessary.

SEA/SH, GBV and CAE Allegation Procedures: All staff, volunteers, consultants and sub-contractors are highly encouraged to report suspected or actual SEA/SH, GBV and/or CAE cases. The company will provide information to employees and the community on how to report cases of SEA/SH, GBV and CAE code of conduct breaches through the GRM. The GCCT will follow up on cases of SEA/SH, GBV, CAE and code of conduct breaches reported through the GRM. Reporting outcomes must be included in the Supervision Engineer's Weekly, Monthly and Quarterly progress reports which are supplied to the World Bank. Any major issue with regards to SEA/SH, GBV or CAE warranting police action shall be reported to TUSRAP and the World Bank immediately.

Accountability Measures: All reports of sexual exploitation and sexual abuse shall be handled in a confidential manner in order to protect the rights of all involved. To ensure that survivors feel confident to disclose their experience of SEA/SH, GBV or CAE, the PMU, Contractor and Consultant must maintain the confidentiality of employees who notify any acts or threats of violence, and of any employees accused of engaging in any acts or threats of violence (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law). Contractor/Consultants must prohibit discrimination or adverse action against an employee on the basis of survivor's disclosure, experience or perceived experience of SEA/SH, GBV or CAE. (See Annex 1 for examples of actions to maintain accountability).

8.1.4 Monitoring & Evaluation Strategy

The GCCT must monitor the follow up of cases that have been reported and maintain all reported cases in a confidential and secure location. Monitoring must collect the number of cases that have been reported and the share of them that are being managed by police, NGOs etc.

These statistics shall be reported to the GRM and the Supervision Engineer for inclusion in their reporting.

Awareness-raising Strategy: Create an Awareness-raising Strategy with activities aimed to sensitize employees on SEA/SH, GBV and CAE on the work site and its related risks, provisions of the Codes of Conduct, SEA/SH, GBV and CAE Allegation Procedures, Accountability Measures and Response Protocol. The strategy will be accompanied by a timeline, indicating the various sensitization activities through which the strategy will be implemented and also the related (expected) delivery dates. Awareness-raising activities may be linked with trainings provided by local service providers.

8.1.5 Response

Response Protocol: The GCCT will be responsible for developing a written response[18] protocol in accordance with national laws and protocols. The response protocol must include mechanisms to notify and respond to perpetrators in the workplace (See 4.8 for Perpetrator Policy and Response). The response protocol will include the GRM process to ensure competent and confidential response to disclosures of SEA/SH, GBV and CAE. An employee who discloses a case of SEA/SH, GBV or CAE in the workplace shall be referred to the GRM for further action.

Survivor Support Measures: Appropriately respond to the survivor's disclosure by respecting the survivor's choices to minimize the potential for re-traumatization and further violence against the survivor. Refer the survivor to the local service provider to obtain appropriate support services in the community – including medical and psychosocial support, emergency accommodation, security including police protection and livelihood support – by facilitating contact and coordination with these services. The PMU, Contractor or Consultant may, where feasible, provide financial and other supports to survivors of SEA/SH, GBV or CAE for these services. (See Annex 1 for examples of financial support)

If the survivor is an employee, in order to ensure the safety of the survivor and the workplace in general, the PMU, Contractor or Consultant, in consultation with the survivor, will assess the risk of ongoing abuse, to the survivor and to the workplace, and make reasonable adjustments to the work schedule and work environment as deemed necessary. (See Annex 1 for examples of safety measures). The Contractor/Consultant will provide adequate leave to survivors seeking services after experiencing violence. (See Annex I for details).

Perpetrator Policy and Response: Encourage and accept notification through the GRM from employees and community members about perpetrators in the workplace. Through the GCCT and/or the local service provider, oversee the investigation of these grievances, according to the accused procedural fairness and within the local laws. If an employee has breached the Code of Conduct, the employer will take action which could include:

i. Undertake disciplinary action up in accordance with sanctions developed by Contractor/Consultant.
ii. Report the perpetrator to the Police as per local legal paradigms.
iii. If feasible, provide or facilitate counselling for the perpetrator.

Sanctions: In accordance with the Code of Conduct, any employee identified as a potential SEA/SH, GBV and/or CAE perpetrator shall be considered for disciplinary measures in line with sanctions and practices

[18] Develop appropriate protocol for written recording of GBV issues and CAE raised in case the notes are subpoenaed. Develop processes for record keeping including activities undertaken by the GCCT.

as agreed in the Code of Conduct. (See Annex 1 for examples of sanctions). It is important to note that, for each case, disciplinary sanctions are intended to be part of a process that is entirely internal to the employer, is placed under the full control and responsibility of its managers and is conducted in accordance with the applicable national labor legislation.

Such process is expected to be fully independent from any official investigation that competent authorities (e.g., Police) may decide to conduct in relationship to the same case, and in accordance with the applicable national law. Similarly, internal disciplinary measures that the employer's managers may decide to enact are meant to be separate from any charges or sanctions that the official investigation may result into (e.g., monetary fines, detention etc.).

Annex I - Potential Procedures

Taking into consideration the employer's policies and protocols, *this annex provides draft ideas for the PMU**, Contractor and Consultant** to select and finalize*.

1. Accountability Measures to maintain confidentiality can be achieved through the following actions:
    a. Inform all employees that confidentiality of SEA/SH/GBV/CAE survivors' personal information is of utmost importance.
    b. Provide the GCCT with training on empathetic and non-judgmental listening.
    c. Take disciplinary action, including and up to dismissal, against those who breach survivor's confidentiality (this is unless a breach of confidentiality is necessary to protect the survivor or another person from serious harm, or where required by law).

2. SEA/SH, GBV and CAE Allegation Procedures should specify:
    a. Who survivors can seek information and assistance from.
    b. The process for community members and employees to lodge a complaint through the GRM should the code of conduct be violated.
    c. The mechanism for how community members and employees can escalate a request for support or notification of violence if the process for reporting is ineffective due to unavailability or non- responsiveness, or if the employee's concern in not resolved.

3. Financial and Other Supports to survivors can include:
    a. No/low interest loans.
    b. Salary advances.
    c. Direct payment of medical costs.
    d. Upfront payments for medical costs to be recouped from the employee's health insurance.
    e. Providing or facilitating access to childcare.
    f. Providing security upgrades to the employee's home.
    g. Providing safe transportation to access support services or to and from accommodation.

4. Survivor Support measures to ensure the safety of the survivor can include:
    a. Changing the employee's span of hours or pattern of hours and/or shift patterns.
    b. Redesigning or changing the employee's duties.
    c. Changing the employee's telephone number or email address to avoid harassing contact.
    d. Relocating the employee to another work site/ alternative premises.
    e. Providing safe transportation to and from work for a specified period.

f. Supporting the employee to apply for an Interim Protection Order or referring them to appropriate support.
g. Taking any other appropriate measures including those available under existing provisions for family friendly and flexible work arrangements.

5. Leave options for survivors that are employees can include:
    a. An employee experiencing SEA/SH or GBV should be able to request paid special leave to attend medical or psychosocial appointments, legal proceedings, relocation to safe accommodation and other activities related to SEA/SH or GBV.
    b. An employee who supports a person experiencing SEA/SH, GBV or CAE may take carer's leave, including but not limited to accompanying them to court or hospital, or to mind children.
    c. Employees who are employed in a casual capacity may request unpaid special leave or unpaid carer's leave to undertake the activities described above.
    d. The amount of leave provided will be determine by the individual's situation through consultations with the employee, the management and the GCCT where appropriate.

6. Potential Sanctions to employees who are perpetrators of SEA/SH, GBV and CAE include:
    a. Informal warning
    b. Formal warning
    c. Additional Training
    d. Loss of up to one week's salary.
    e. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
    f. Termination of employment.

Referral to the Police or other authorities as warranted.

Appendix G: PESMP Implementation Plan Guideline

WASTE MANAGEMENT IMPLEMENTION PLAN GUIDELINE

Objective

The objective of this Sub-plan is to prescribe the requirements for the development of waste management sub-plans.

Planning and Design

As part of the Contractors ESMP (CESMP) prepared by the contractor waste management measures will be included in a solid waste management plan (SWMP) to cover all matters related to solid and liquid waste disposal arising from construction related activities (including storage, disposal and accidental spills).

The Contractors will prepare a SWMP based on national legislation and detailed prescriptions of the PESMP which will cover the following:

i. Assign responsibility of implementing the waste management plan to one designated person;
ii. Forecast the types and percentage of waste that will be produced by the contract:
    - Divide the listed waste streams into recyclable, reusable and refuse
iii. Describe recycling/reuse methods. Identify the possibilities for reuse and recycling for each type of waste that is created and describe these – where, how, and when to handle materials. The following must be considered:
    - Agreed reuse and recycling options and locations for disposal/endorsement from Department of Waste Management;
    - Recyclables to be recovered and sold to recognized recyclers;
iv. Identify waste destinations. Only existing consented disposal sites will be used and no landfills in Tuvalu will be used. This section should consider:
    - Methods for treatment and disposal of all solid and liquid wastes;
    - Designation of waste disposal areas agreed with local authorities;
    - Residual waste to be disposed of in disposal sites approved by local authorities and not located within 500 m of rivers or streams;
    - Disposal of solid wastes into drainage ditches, rivers, other watercourses, agricultural fields and public areas shall be prohibited; and
    - All solid waste will be collected and removed from work camps and disposed in designated local waste disposal sites.
v. Material use and handling: Use this section to describe how waste will be sorted and stored on site before collection. This section should consider:
    - Provide details of how the various waste streams will be stored and labelled in the construction camp;

- Provide instructions for the handling of all types of waste including detailed instructions for equipment needed when managing waste, as well as any safety procedures for waste crew;
- Identification of overseas licensed service providers for waste collection;
- Establishment of regular disposal schedule and constraints for hazardous waste;
- Program for disposal of general waste / chain of custody for hazardous waste;
- Segregation of wastes to be observed. Organic (biodegradable - such as tree trimmings) shall be collected, stockpiled and given to the local community (no burning is allowed on site);
- Camp, construction offices/facilities and work's yard to be provided with garbage bins;
- Burning of construction and domestic wastes to be prohibited;

vi. Monitoring: The relevant monitoring requirements of the PESMP will be incorporated into the WMP and a designated person will be listed as being responsible for monitoring.

vii. Communication and training: Explain what will be done to educate and inform all project employees about the waste management system that has been established.

OHS IMPLEMENTATION PLAN GUIDELINE

Objective

The objective of this Code of Practice is to provide guidance on the:

- key principles involved in ensuring the health and safety of workers is protected;
- preparation of Health and Safety Code of Practices and associated Job Safety Analyses (JSA); and
- implementation of Health and Safety Code of Practices during project implementation.

The key reference document for this Guideline is the World Bank Group's Environmental, Health, and Safety (EHS) Guidelines together with the relevant Industry Sector EHS Guidelines available at www.ifc.org/ehsguidelines.

Requirements

For the purposes of the project, in addition to the national OHS standards the employer is adopting a code of practice for occupational health and safety based on good international industry practice. To be qualified for bidding contractors will be required to have in place an occupational health and safety management system which is compliant with, or equivalent to, OHSAS 18000 (http://certificationeurope.com/ohsas-18000-health-safety-managment-standards/) and is acceptable to the PMU. The contractor shall specify which occupational health and safety standards are to be applicable to the project and provide evidence of application of such standards on a project of similar size and complexity during the past 5 years. The standards to be adopted may include those of Australia, Canada, New Zealand, the EU and the US, which are referred to in the World Bank Group EHS Guidelines.'

With their bids, Contractors will be required to submit statistics for their workplace safety performance for the past 5 years on (including sub-contractors for projects where they were lead contractor):

- Number of fatal injuries (resulting is loss of life of someone associated with the project or the public)
- Number of notifiable injuries (an incident which requires notification of a statutory authority
- under health and safety legislation or the contractor's health and safety management system)
- Number of lost time injuries (an injury or illness certified by a medical practitioner that results in absence of work for at least one scheduled day or shift, following the day or shift when the accident occurred)
- Number of medical treatment injuries (the management and care of a patient to effect medical treatment or combat disease and disorder excluding: (i) visits solely for the purposes of observation or counselling; (ii) diagnostic procedures (e.g. x-rays, blood tests); or, (iii) first aid treatments as described below)
- Number of first aid injuries (minor treatments administered by a nurse or a trained first aid attendant)
- Number of recordable strikes of services (contact with an above ground or below ground service resulting in damage or potential damage to the service)

- Lost Time Injury Frequency Rate (the number of allowed lost time injury and illness claims per million man-hours equivalent workers for the injury year specified)
- Total Recorded Frequency Rate (the number of recordable injuries [recordable/lost time/fatal] per million man-hours equivalent workers for the injury year specified)

The PMU's Consulting Engineer is required to monitor OHS guidance during their regular duties. There will be monthly/bi-monthly independent OHS audits by a certified auditor as part of the consultant's supervision team.

The Contractor will be required to report monthly on their performance with the above indicators supplied during bidding, as well as:

- Number of alcohol tests
- Proportion of positive alcohol tests
- Number of site health and safety audits conducted by contractor
- Number of safety briefings
- Number of near misses
- Number of traffic management inspections
- Number of sub-contractor reviews
- Number of stop work actions
- Number of positive reinforcements

Principles

Employers must take all reasonable practicable steps to protect the health and safety of workers and provide and maintain a safe and healthy working environment.

All contractors must have in place an OHS management system which is compliant with, or equivalent to, OHSAS 18000, Work Safe Australia, Work Safe New Zealand, or an OECD country acceptable to the PMU to be proposed and agreed during bidding by the PMU. The system must be kept current and maintained for the life of the project.

The application of prevention and control measures to occupational hazards should be based on comprehensive job safety analyses (JSA). The results of these analyses should be prioritized as part of an action plan based on the likelihood and severity of the consequence of exposure to the identified hazards.

The following key principles are relevant to maintaining worker health and safety:

1. Identification and assessment of hazards

Each employer must establish and maintain effective methods for:

- Systematically identifying existing and potential hazards to employees;
- Systematically identifying, at the earliest practicable time, new hazards to employees;
- Regularly assessing the extent to which a hazard poses a risk to employees.

2. Management of identified hazards

Each employer must apply prevention and control measures to control hazards which are identified and assessed as posing a threat to the safety, health or welfare of employees, and where practicable, the hazard shall he eliminated. The following preventive and protective measures must be implemented order of priority:

- Eliminating the hazard by removing the activity from the work process;
- Controlling the hazard at its source through engineering controls;
- Minimizing the hazard through design of safe work systems;
- Providing appropriate personal protective equipment (PPE).

The application of prevention and control measures to occupational hazards should be based on comprehensive job safety analyses (JSA). The results of these analyses should be prioritized as part of an action plan based on the likelihood and severity of the consequence of exposure to the identified hazards.

3. Training and supervision

Each employer must take all reasonable practicable steps to provide to employees (in appropriate languages) the necessary information, instruction, training and supervision to protect each employee's health and to manage emergencies that might reasonably be expected to arise in the course of work. Training and supervision extends to the correct use of PPE and providing employees with appropriate incentives to use PPE.

To that end, all safety officers, supervisors and managers for the contractor and PMU's Consulting Engineer must have a minimum level of occupational health and safety (OHS) training equivalent to the New Zealand Construction Safety Council Tier-1 training (http://tinyurl.com/ohs-tier-1-training).

4. General duty of employees

Each employee shall:

- take all reasonable care to protect their own and fellow workers health and safety at the workplace and, as appropriate, other persons in the vicinity of the workplace;
- use PPE and other safety equipment supplied as required; and
- not use PPE or other safety equipment for any purpose not directly related to the work for which it is provided.

5. Protective clothing and equipment

Each employer shall:

- provide, maintain and make accessible to employees the PPE necessary to avoid injury and damage to their health;
- take all reasonably practicable steps to ensure that employees use that PPE in the circumstances for which it is provided; and
- make provision at the workplace for PPE to be cleaned and securely stored without risk of damage when not required.

Design

Effective management of health and safety issues requires the inclusion of health and safety considerations during design processes in an organized, hierarchical manner that includes the following steps:

- identifying project health and safety hazards and associated risks as early as possible in the project cycle including the incorporation of health and safety considerations into the worksite selection process and construction methodologies;
- involving health and safety professionals who have the experience, competence, and training necessary to assess and manage health and safety risks;
- understanding the likelihood and magnitude of health and safety risks, based on:
    - the nature of the project activities, such as whether the project will involve hazardous materials or processes;
    - The potential consequences to workers if hazards are not adequately managed;
- designing and implementing risk management strategies with the objective of reducing the risk to human health;
- prioritizing strategies that eliminate the cause of the hazard at its source by selecting less hazardous materials or processes that avoid the need for health and safety controls;
- when impact avoidance is not feasible, incorporating engineering and management controls to reduce or minimize the possibility and magnitude of undesired consequences;
- preparing workers and nearby communities to respond to accidents, including providing technical resources to effectively and safely control such events;
- Improving health and safety performance through a combination of ongoing monitoring of facility performance and effective accountability.

For further information on safety in design see: http://tinyurl.com/ohs-safety-in-design.

Job Safety Analysis

The job safety analysis (JSA) is a process involving the identification of potential health and safety hazards from a particular work activity and designing risk control measures to eliminate the hazards or reduce the risk to an acceptable level. JSAs must be undertaken for discrete project activities such that the risks can be readily identified, and appropriate risk management measures designed.

The annex to this Code of Practice includes a template for a JSA that must be completed and included as an attachment to the Health and Safety Code of Practice.

Implementation

1. Documentation

A Health and Safety Plan must be prepared and approved and submitted as part of the CESMP prior to any works commencing on site.

The H&S Plan must demonstrate the Contractor's understanding of how to manage safety and a commitment to providing a workplace that enables all work activities to be carried out safely. The H&S Plan must detail reasonably practicable measures to eliminate or minimize risks to the health, safety and welfare of workers, contractors, visitors, and anyone else who may be affected by the operations. The H&S Plan must be prepared in accordance with the World Bank's EHS Guidelines, Vanuatu's health and safety legislation, and industry best practices as appropriate.

2. Training and Awareness

Provisions should be made to provide health and safety orientation training to all new employees to ensure they are apprised of the basic site rules of work at / on the site and of personal protection and preventing injury to fellow employees. Training should consist of basic hazard awareness, site-specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate.

To that end, all safety officers, supervisors and managers for the contractor and PMU's Consulting Engineer must have a minimum level of occupational health and safety (OHS) training equivalent to the New Zealand Construction Safety Council Tier-1 training (http://tinyurl.com/ohs-tier-1-training).

Visitors to worksites must be provided with a site induction prior to entering and must be escorted at all times while on site. This induction must include details of site hazards, provision of necessary PPE and emergency procedures. Visitors are not permitted to access to areas where hazardous conditions or substances may be present, unless appropriately inducted.

3. Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) provides additional protection to workers exposed to workplace hazards in conjunction with other facility controls and safety systems.

The PPE requirements shall be clearly defined in the CESMP and be based on the New Zealand Transport Agency's Zero Harm approach (http://tinyurl.com/ohs-ppe-requirements). It should be noted that these PPE requirements also apply to site visitors, based on the perceived risk.

PPE is considered to be a last resort that is above and beyond the other facility controls and provides the worker with an extra level of personal protection. The table below presents general examples of occupational hazards and types of PPE available for different purposes. Recommended measures for use of PPE in the workplace include:·

- active use of PPE if alternative technologies, work plans or procedures cannot eliminate, or sufficiently reduce, a hazard or exposure;
- identification and provision of appropriate PPE that offers adequate protection to the worker, co-workers, and occasional visitors, without incurring unnecessary inconvenience to the individual;
- proper maintenance of PPE, including cleaning when dirty and replacement when damaged or worn out. Proper use of PPE should be part of the recurrent training programs for Employees
- selection of PPE should be based on the hazard and risk ranking described earlier in this section, and selected according to criteria on performance and testing established

Objective	Workplace Hazards	Suggested PPE
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation.	Safety Glasses with side-shields, protective shades, etc.
Head protection	Falling objects, inadequate height clearance, and overhead power cords.	Plastic Helmets with top and side impact protection.
Hearing protection	Noise, ultra-sound.	Hearing protectors (ear plugs or earmuffs).
Foot protection	Falling or rolling objects, pointed objects. Corrosive or hot liquids.	Safety shoes and boots for protection against moving & falling objects, liquids and chemicals.
Hand protection	Hazardous materials, cuts or lacerations, vibrations, extreme temperatures.	Gloves made of rubber or synthetic materials (Neoprene), leather, steel, insulating materials, etc.

Respiratory protection	Dust, fogs, fumes, mists, gases, smokes, vapors.	Facemasks with appropriate filters for dust removal and air purification (chemicals, mists, vapors and gases). Single or multi-gas personal monitors, if available.
	Oxygen deficiency	Portable or supplied air (fixed lines). On-site rescue equipment.
Body/leg protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration.	Insulating clothing, body suits aprons etc. of appropriate materials.

Monitoring

Occupational health and safety monitoring programs should verify the effectiveness of prevention and control strategies. The selected indicators should be representative of the most significant occupational, health, and safety hazards, and the implementation of prevention and control strategies. The occupational health and safety monitoring program should include:

- **Safety inspection, testing and calibration**: This should include regular inspection and testing of all safety features and hazard control measures focusing on engineering and personal protective features, work procedures, places of work, installations, equipment, and tools used. The inspection should verify that issued PPE continues to provide adequate protection and is being worn as required.
- **Surveillance of the working environment**: Employers should document compliance using an appropriate combination of portable and stationary sampling and monitoring instruments. Monitoring and analyses should be conducted according to internationally recognized methods and standards.
- **Surveillance of workers health**: When extraordinary protective measures are required (for example, against hazardous compounds), workers should be provided appropriate and relevant health surveillance prior to first exposure, and at regular intervals thereafter.
- **Training:** Training activities for employees and visitors should be adequately monitored and documented (curriculum, duration, and participants). Emergency exercises, including fire drills, should be documented adequately.
- **Accidents and Diseases monitoring**. The employer should establish procedures and systems for reporting and recording:
    - Occupational accidents and diseases
    - Dangerous occurrences and incidents

These systems should enable workers to report immediately to their immediate supervisor any situation they believe presents a serious danger to life or health.

Each month, the contractor shall supply the following data to the PMU's Consulting Engineer for reporting to the PMU. These data are to also include incidents related to any sub-contractors working directly, or indirectly, for the Contractor.

Lead Indicators	Lag Indicators
Number of drug and alcohol tests	Number of Fatal injuries
Proportion of positive drug and alcohol tests	Number of Notifiable Injuries
Number of site health and safety audits	Number of Lost Time Injuries (LTI)
Number of safety briefings	Number of Medical Treatment Injuries (MTI)
Number of near misses	Number of First Aid Injuries (FAI)
Number of traffic management inspections	Total Recordable Injuries
Number of Safety in Design workshops (Designers only)	Number of serious environmental incidents
Number of Safety in Design issues eliminated (Designers only)	Number of service strikes
Number of sub–contractor reviews	Number of property damage incidents
Number of stop work actions	Number of staff on reduced/alternate duties
Number of positive reinforcements	Lost Time Injury Frequency Rate (LTIFR)
	Total Recordable Frequency Rate (TRFR)

Definitions of the above are to be in accordance with those used by the New Zealand Transport Agency (http://tinyurl.com/nzta-ohs-reporting).

The PMU's Consulting Engineer shall be notified of any incident in accordance with the standards below:

Incident Severity Class	Incident Classification	Notification timeframe
Class 1	Fatality	As soon as possible
	Notifiable Injury, Illness or Incident	As soon as possible
Class 2	Lost Time Injury	As soon as practicable but within 48 hours
	Medical Treatment	Within 72 hours

All Class 1 and Class 2 health and safety incidents must be formally investigated and reported to the

PMU's Consulting Engineer through an investigation report. This report shall be based on a sufficient level of investigation by the Contractor so that all the essential factors are recorded. Lessons learnt must be identified and communicated promptly. All findings must have substantive documentation. As a minimum the investigation report must include:

- Date and location of incident
- Summary of events
- Immediate cause of incident
- Underlying cause of incident
- Root cause of incident
- Immediate action taken
- Human factors
- Outcome of incident, e.g. severity of harm caused, injury, damage
- Corrective actions with clearly defined timelines and people responsible for implementation
- Recommendations for further improvement

Job Safety Analysis (JSA) Add Organization Name:

Ref: Version:

Business details			
Business name:			
Contact person:			
Address:		Contact position:	
Contact phone number		Contact email address:	
Job Safety Analysis details			
Work activity:		Location:	
Who are involved in the activity:		This job analysis has been authorized by: Name:..... Position: ..... Signature:..... Date:.....	
Plant and equipment used:			
Maintenance checks required:			
Tools used:			
Materials used:			
Personal protective equipment:			
Certificates, permits and/approvals required			

Relevant legislation, codes, standard MSDSs etc. applicable to this activity	

Risk assessment

**Use the risk rating table to assess the level of risk for each job step.

		Likelihood				
		1	2	3	4	5
Consequence		Rare The event may occur in exceptional circumstances	Unlikely The event could occur sometimes	Moderate The event should occur sometimes	Likely The event will probably occur in most circumstances	Almost Certain The event is expected to occur in most circumstances
1	Insignificant No injuries or health issues	LOW	LOW	LOW	LOW	MODERATE
2	Minor First aid treatment	LOW	LOW	MODERATE	MODERATE	HIGH
3	Moderate Medical treatment, potential LTI	LOW	MODERATE	HIGH	HIGH	CRITICAL

4	Major Permanent disability or disease	LOW	MODERATE	HIGH	CRITICAL	CATASTROPHIC
5	Extreme Death	MODERATE	HIGH	CRITICAL	CATASTROPHIC	CATASTROPHIC

Risk rating:

Low risk: Acceptable risk and no further action required as long as risk has been minimised as possible. Risk needs to be reviewed periodically.

Moderate risk: Tolerable with further action required to minimise risk. Risk needs to be reviewed periodically.

High risk: Tolerable with further action required to minimise risk. Risk needs to be reviewed continuously.

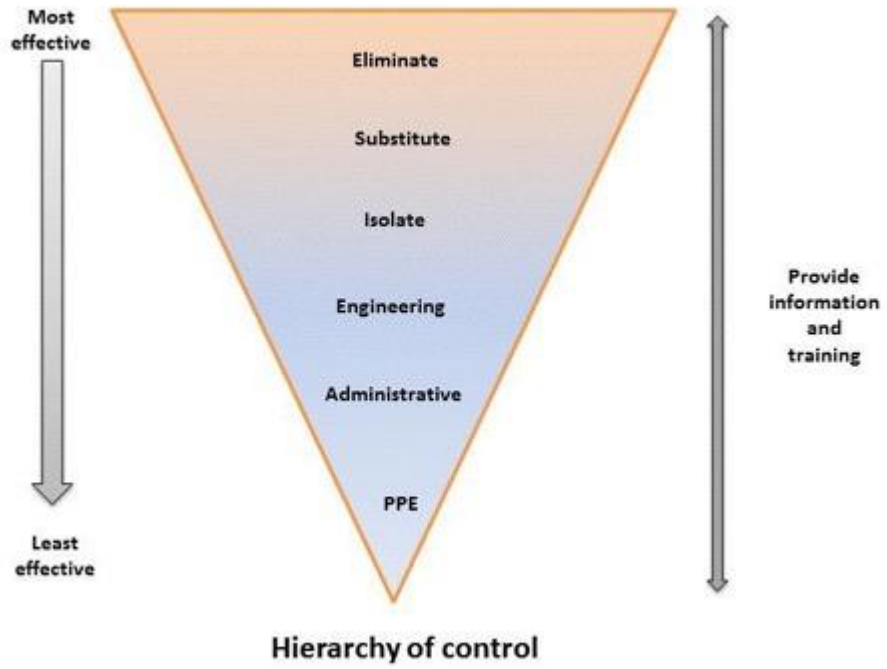
Critical risk: Unacceptable risk and further action required immediately to minimise risk.

Catastrophic: Unacceptable risk and urgent action required to minimise risk.

Risk controls

The hierarchy of control can be used as an effective tool to deal with health and safety issues at work. Use the type of control suggested as measures to deal with the hazard. Aim to use control measures from as high on the hierarchy of control list as possible. If that is not possible the next option down the list or a combination of the measures should be implemented. The least effective control measure is the use of personal protective equipment (PPE), and it should be used as a last resort or a support to other control measures. Information and training should be integrated with all levels of control to explain how controls work.

1. **Eliminate** – if it is possible, the hazard should be removed completely. For example, get rid of dangerous machines.
2. **Substitute** – replace something that produces the hazard with something that does not produce a hazard. For example, replacing solvent-based paint with water-based paint. Risk assessment on the substitution must be conducted to ensure that it will not pose another hazard.
3. **Engineering control** – isolate a person from the hazard by creating physical barrier or making changes to process, equipment or plant to reduce the hazard. For example, install ventilation systems.
4. **Administrative control** – change the way a person works by establishing policies and procedures to minimise the risks. For example, job scheduling to limit exposure and posting hazard signs.
5. Use **personal protective equipment (PPE)** – protect a person from the hazard by wearing PPE. For example, wearing gloves, safety glasses, hard hats and high-visibility clothing. PPE must be correctly fitted, used and maintained to provide protection.



Hierarchy of control

JSA – Action steps

Step No	Job step details	Potential hazards	Risk rating**	How to control risks***	Name of persons responsible for work

This job safety analysis has been developed through consultation with our employees and has been read, understood and signed by all employees undertaking the works:		
Print Names:	Signatures:	Dates:

Review No	01	02	03	04	05	06	07	08
Initial:								
Date:								

Appendix H: Tuvalu Integrated and Waste Management Policy and Action Plan

The same guiding principles as the Cleaner Pacific 2025 will be adhered to in the implementation of this policy as follows:

PRINCIPLE 1: Reduce, Reuse, Recycle, and Return (3R + Return). In prescribing waste management interventions, the preference shall be to refuse products that result in problem wastes; reduce the generation of waste and pollutants; to reuse if appropriate and safe to do so; to recycle domestically when technically and economically feasible; and to return waste resources to appropriate recycling facilities in other countries. Residual waste that cannot be reused, recycled, or returned for recycling shall be disposed of in an environmentally sound manner.

PRINCIPLE 2: Product stewardship. Those involved in producing, importing, selling, using and disposing of products have a shared responsibility to ensure that those products or materials are managed throughout their lifecycle in a way that reduces their impact on the environment and on human health and safety. Tuvalu Integrated Solid Waste Plan 2005 Waste Issues • What has not been achieved Strategic Goals • What do we want to achieve Strategic Actions • How do we want to achieve Implementation Plan • What do we need to do to achieve 2026 Vision and Mission 29 | P a g e Tuvalu Integrated Waste Policy and Action Plan 2017 -2026

PRINCIPLE 3: Polluter pays principle. Waste producers and polluters should pay the cost of managing their waste or cleaning up the pollution and remediating associated environmental damage.

PRINCIPLE 4: Proximity principle. The treatment and disposal of waste and pollutants should take place at the closest possible location to the source, in order to 149minimize the risks involved in its transport.

PRINCIPLE 5: Transparency. All waste management activities shall be conducted in an open and transparent manner.

PRINCIPLE 6: Public consultation and participation. Public consultation shall be integrated into the planning of national and regional waste management and pollution control activities, and participants shall be given the opportunity to provide informed input, which shall be considered as advice by relevant decision-makers. Participants shall also be informed of the results of the consultation process.

PRINCIPLE 7: Multisectoral approach. Waste management and pollution control approaches shall involve multiple sectors (such as climate change, biodiversity conservation, health, tourism and agriculture) in order to improve the success and effectiveness of interventions.

PRINCIPLE 8: Regionalism. Regional cooperation and collaboration through genuine partnerships shall be undertaken where appropriate to complement national efforts, overcome common constraints, share resources and harness shared strengths.

PRINCIPLE 9: Sound decision-making. Decision-making shall be based on scientific information and risk-analysis from national, regional and/or international sources and shall promote the optimum utilisation of resources.

PRINCIPLE 10: Proactive approach. All WCP activities shall be undertaken using a planned rather than reactive approach to ensure limited resource allocations are optimised.

PRINCIPLE 11: Adherence to regional and international conventions. Pacific island countries and territories shall abide by their obligations to regional and international treaties related to waste, chemicals, hazardous waste and marine pollution.

PRINCIPLE 12: Public-private partnership. The comparative and competitive advantages of the private sector shall be harnessed to improve the delivery of waste management and pollution control services through a contractual relationship between private and public entities.

PRINCIPLE 13: Selection of appropriate and affordable technology. Selection (development and/or transfer) of environmentally sound technologies for waste management and pollution control shall fully consider the prevailing socioeconomic conditions and capacity of the country and, where deemed necessary, shall be part of an overall management strategy that prioritises public health and environmental protection, sustainability and compliance with international and regional treaties (such as reduction in greenhouse gas and ODS emissions and uPOPs generation).