Second Solomon Islands Roads and Aviation Project (SIRAP2)

Malaita Bridge Replacement, Environmental and Social Management Plan (ESMP)

Version 4, December, 2023

Update (Final)

Prepared by SIRAP Project Support Team

Version Control

Document	Malaita Bridge Replacement Final Environmental and Social Management Plan
Date	6 Dec 2023
Prepared by	SIRAP PST

Version	Revision Date	Details	Submitted
			Name/Position
1	21 Feb 2022	First Draft Submitted for Review	Kate Walker/International Safeguards Specialist
2	15 Sep 2023	Second Draft Submitted for Review	SIRAP2 PST
3	9 Nov 2023	Updated based on Detailed Design	SIRAP2 PST
4	6 Dec 2023	Updated Submission for Review based on Detailed Engineering Design	SIRAP 2 PST

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Glossary and Abbreviations

AP	Affected Person/People
CESMP	Contractor(s) Environmental and Social Management Plan
ECD	Environmental and Conservation Department
ESF	Environmental and Social Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
IFC	International Finance Corporation
GBV	Gender Based Violence
GRM	Grievance Redress Mechanism
LMP	Labour Management Procedure
MCA	Ministry of Communication and Aviation
MID	Ministry of Infrastructure Development
NGOs	Non-government organisations
OHS	Occupational Health and Safety
PER	Public Environmental Report
PPE	Personal protective equipment
PST	Project Support Team
RP	Resettlement Plan
SEP	Stakeholder Engagement Plan
SIG	Solomon Islands Government
SIRAP	Solomon Islands Roads and Aviation Project
SIRAP2	Second Solomon Islands Roads and Aviation Project
SIWA	Solomon Islands Water Authority
STD	Sexually Transmitted Diseases
SWMP	Solid Waste Management Plan
TMP	Traffic Management Plan
WB	World Bank

Executive Summary

The Solomon Island Government (SIG), is implementing the Solomon Islands Roads and Aviation Project (SIRAP) to improve operational safety and oversight of air transport and strengthen the climate resilience of the road and aviation sectors in the Solomon Islands (SI). In 2021, SIG requested a new transport project called the Second Solomon Islands Roads and Aviation Project (SIRAP2) given the need to expand SIRAP further. Activities planned under SIRAP2 are located on the following islands:

- Honiara International Airport (HIR) located in Honiara, Guadalcanal.
- Munda International Airport located in Munda, New Georgia Island.
- Existing road network on Malaita Island with four bridges, 2 in north area (Kolofe 1 and 2) the others in south area (Su'u and Bira) and Noro Town on New Georgia Island.
- Sealing of the Santa Cruz Airport runway on Nendo Island.

Under the World Bank Environmental and Social Framework (ESF), the overall environmental and social risk classification (ESRC) for SIRAP2 is Substantial, with a Moderate environmental risk rating and a Substantial risk rating for Social. An environmental and social assessment (ESA) in a form of screening on environmental and social sensitive receptors along the bridges was conducted by the Project Support Team (PST). The ESA provided the basis for development of the environmental and social risk management instrument for the Project: Environmental and Social Management Plans (ESMPs) for Honiara Airport, Munda Airport, Noro Roads, Malaita Bridges (this ESMP), Santa Cruz runway upgrading, drainage improvement and seawall construction; Environmental and Social Commitment Plan (ESCP); Stakeholder Engagement Plan (SEP); Labor Management Procedure (LMP); and Preliminary Resettlement Plan (RP).

Due to the nature of the project, it is expected that impacts will be site specific, few if any are irreversible, and mitigation measures can be readily designed and implemented. The ESMP is required to identify and assess environmental and social issues associated with the proposed activities and develop mitigation and management measures consistent with World Bank requirements.

This ESMP, version 4, focuses on the four bridges identified for immediate replacement on the north and south road on Malaita's main road network and includes information on mitigation, monitoring, responsibilities and institutional capacity. Previously, there were no design or assessment work that had been carried out for these bridges. However, a design team has since been commissioned to undertake detailed design for these bridges, and Section 2 had been updated to provide both detailed and high-level overview of the project needs and is summarized below:

- Build single span bridge to replace existing bridge on Kolofe Bridges 1 and 2 on the North Road
- Build single span bridge to replace existing bridge on Su'u Harbour Bridge on the South Road
- Build double span bridge on Bira on the South Road
- Appropriate safety interventions for each bridge

The majority of potential adverse impacts will occur during the construction phase. However, given the scope and nature of the works, mitigation measures should be able to alleviate or lessen any potential negative impacts. Initial screening of the proposed upgrades has identified impacts and the moderate and significant ones are discussed in detail in Section 6 of this ESMP and has been updated with site assessments undertaken as part of the design work. The key potential impacts that are being mitigated are:

- Sourcing of aggregate materials
- Solid waste generation
- Hazardous materials handling and storage
- Community disruption during construction activities.
- Transport of equipment and materials.
- Safety hazards for workers and users of the facilities where upgrades are occurring.
- Erosion and sediment control from working on riverbanks and in waterways.

This ESMP is designed to address these issues through a series of mitigation and management measures described in Section 7. The measures will be implemented through:

- Implementation of this ESMP through an approved Contractor(s)'s ESMP (CESMP) and associated sub-managed plans guided by the Code of Practice documents included in Appendix B.
- Regular supervision and monitoring of the implementation of the ESMP (refer ESMP monitoring plan).
- Meaningful and ongoing consultations with the communities during the design and construction phases of this project.

1 Introduction

1.1 Background

The Solomon Island Government (SIG) is implementing the Solomon Islands Road and Aviation Project (SIRAP) to improve the climate resilience and safety of the Solomon Islands (SI) road and aviation sectors. In 2021, SIG requested a new transport project called SIRAP2 given the need to expand SIRAP further.

The SIG has placed the upgrading and replacement of four bridges on the Malaita Road network as a high priority in the National Transport Plan (NTP) 2017-2036. The replacement of these identified bridges will contribute to improved connectivity across Malaita.

SIRAP is also undertaking improvements to roads and other bridges on Malaita and the upgrades to the four bridges under SIRAP2 are complimentary to and will build on the achievements of SIRAP, with the development objective of improving the climate resilience and safety of the Solomon Islands' roads.

1.2 Environmental and Social Management Plan Objectives and Scope

The SIRAP2 Environmental and Social Risk Screening (ESRS) has given an overall Environmental and Social Risk Classification (ESRC) of 'substantial', with environmental risks classed as 'moderate' and social risks as 'substantial'. A site specific Environmental and Social Management Plan (ESMP) is required. Due to the nature of the project, it is expected that the majority of the environmental and social impacts will be site-specific, few if any are irreversible, and mitigation measures can be readily designed and implemented.

Key activities include:

- Vegetation clearance and preparation for laydown site and stockpile sites; Working in rivers and on riverbeds, and in adjacent coast zone for the replacement of Su'u Harbour Bridge and Bira Bridge on the South Road Aggregate extraction; Site establishment including, clearing and grubbing works at bridge sites;
- Demolition of existing structures;
- Construction of detours;
- Piling works;
- Construction/Installation of the bridges and associated safety infrastructures;
- Grading, backfilling and compacting of bridge associated approaches;
- Management of bridge traffic
- Management of community's use of the river section; and
- Decommissioning of laydown site

The objective of the ESMP is to provide a set of stipulations for managing the bridge replacement works in a manner that incorporates the principles of environment sustainability according to the SIG legislation and World Bank Environmental and Social Standards (ESS) within the ESF while minimizing potential adverse effects on the local community and the physical environment.

To achieve this objective the ESMP 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 of the project works and execution of project works.

This ESMP (or approved updated versions) will be included in all bidding documents and form the basis of the Contractor(s)'s ESMP (CESMP) which will detail the practical implementation of the mitigation measures identified in this ESMP. The ESMP is a dynamic document which should be updated to include any variation from the current scope or addition of newly identified impacts and mitigation measures that may arise through the bidding and contracting process (if not addressed in the CESMP) or construction. The mitigation measures associated with the impacts identified above are detailed below.

This ESMP is limited to the scope of works for the bridges as described in Section 2 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 ESMP will be included in the bidding documents and will form the basis of the CESMP. The mitigation measures identified in this ESMP form the minimum requirement for reducing impacts on the environment as a result of works associated with the project. The CESMP will be prepared by the contractor(s), approved by the Supervision Engineer and SIRAP2 Project Support Team (PST) and disclosed prior to commencing civil works.

1.3 Integration of the ESMP

It is the responsibility of the SIRAP2 PST (Project Support Team), to ensure that this ESMP is fully integrated into all Project preparation and planning. The ESMP shall form part of any tender documentation for physical works, and it shall be the Client's responsibility to ensure that the technical requirements and data sheets of Project bid documentation are subject to review against this ESMP to ensure that all appropriate safeguard measures are captured at the bid stage.

Further, it is the responsibility of the SIRAP2 PST to ensure that this ESMP is considered in the review of any Terms of Reference (TOR) for Technical Assistance developed for the Project. The safeguard requirements for any design or supervision of the Project will be fully integrated into the TOR to ensure that all safeguard responsibilities allocated within the ESMP are realized at the tender stage. In this way, the ESMP will be fully integrated within the Project so that the required measures will be fully appreciated by all responsible parties, and successful implementation will be achieved.

1.4 Disclosure

Disclosure does not equate to the consultation (and vice versa) as disclosure is about transparency and accountability through the release of information about the project. The final Malaita Bridges ESMP will be made available on the World Bank (WB) external website, on the SIRAP2 project website and in hard copy at the SIRAP2 PST office.

The disclosure of the ESMP will be in a PDF format less than 10Mb in size so that it can be easily downloaded and emailed using Solomon Islands standard internet connections.

2 Overview of Proposed Works

2.1 Current Situation

The roads in Solomon Islands are mostly gravel and earthen with only about 8% being paved and only reaches about 20% of the country's population. Water crossings or bridges is mostly log bridges, culverts with some steel or reinforced structures. More than half of the road network are on Guadalcanal and Malaita islands.

Malaita Island is the most populous island in Solomon Islands and is one of the main islands of the Solomon Islands Archipelago. Compared to other islands and second only to Guadalcanal which Honiara is located, Malaita has the largest road network and the highest number of bridges. However, the condition of the road and bridges has deteriorated over the years due to neglect and delayed maintenance.

Component 2 of SIRAP2 provides for climate resilience and safety investments in the road sector. It provides for the four bridges in Malaita: 2 bridges on North Road and 2 bridges on South Road which include repair and/or replacement based on the surveyed condition of the bridges and the engineers proposed design solutions. It should be noted that only publicly gazetted roads will be addressed through the Project.

2.2 Overview of Proposed Works

The bridges identified by the Ministry of Infrastructure Development (MID) and verified by the engaged design team are as shown in the table below with the following updated details:

Table 1: Identified bridge sites

Bridges	Structural Detail	Road Chainage	Bridge Span (m)	Total Width (m)	Condition as observed in May 2018
North Road					
Kolofe 1 Log Timber Bridge	Single span	91+200	12.1	10.4	The bridge had collapsed, and a temporary crossing had been constructed using the original logs.
Kolofe 2 Log Timber Bridge	Single span	91+500	12.1	10.4	This bridge has gabion abutments, log beams and a timber deck. The bridge was deteriorated in 2018.
South Road					
Su'u Harbour Bailey Bridge	Single span	66+420	18.5	5.3	The original bridge was destroyed by logging trucks. Logging company had constructed a temporary bridge with log abutments, log beams and a timber deck.
Bila Log Timber Bridge	Double Span	68+000	32[1]	5.3	No bridge at the location. The temporary log bridge was washed away.

[1] As the wet area of Bila Bridge site is wider than the expected single span of the concrete modular bridge, three design options are proposed and design verification will follow accordingly: Option 1 - For the maximum concrete modular single span of 18.5 m, the abutments are founded on the wet area; Option 2 - The option includes a double span of 16 m concrete modular structure and a pier at the centre of the longitudinal section; and Option 3 - A modular bridge system of Steel I Girder for a single span of 28.8 m without any piers involves a routine design.

Source: Structural detail, road chainage and bridge span information taken from the Preliminary Design Report, Egis Design Team; bridge condition information retained from ESMP Version 1.

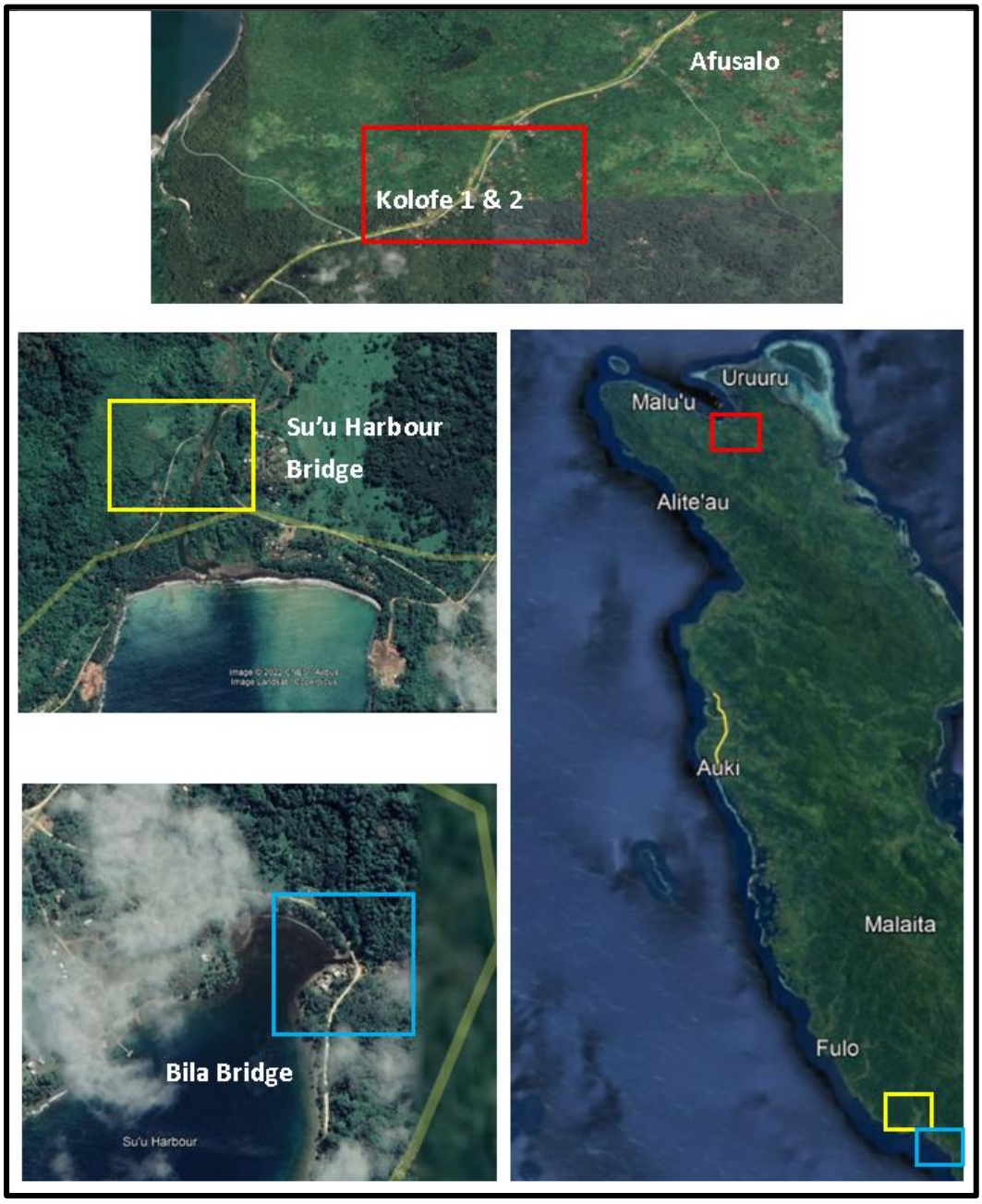


Figure 1: Approximate location of the identified bridges

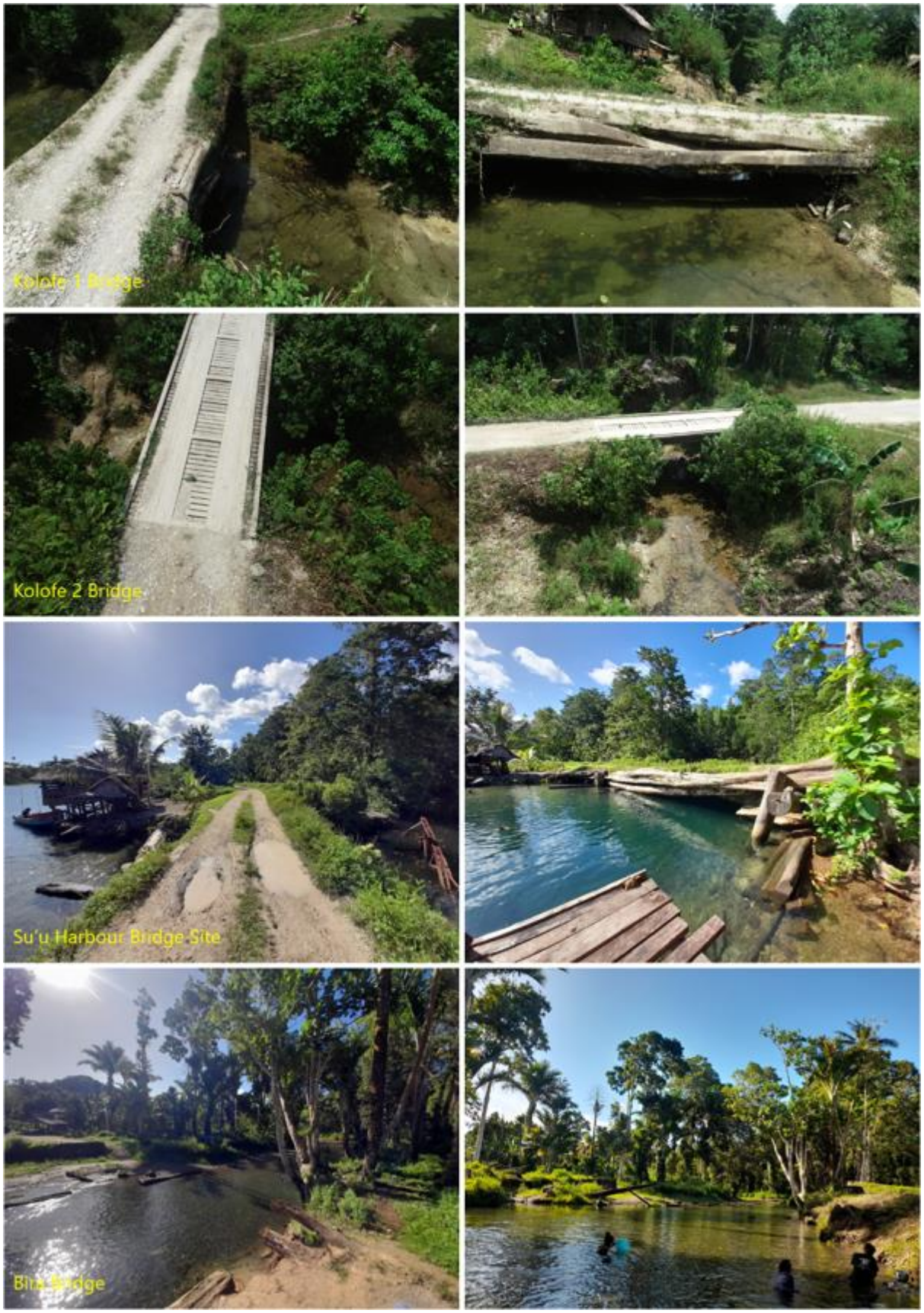


Figure 2: Photos of existing bridges conditions at Kolofe 1 &2, Su'u Harbour, and Bila bridges site (Photo credit: Azimuth Survey (2022))

The bridge approaches will not be widened, works will be undertaken on the existing road footprint. The section of roads subject to the improvements proposed in SIRAP2 are publicly gazetted roads under the SIG Roads Act. Works will only take place on gazetted roads with the exception of bypass roads during construction for which the Contractor shall be allowed to enter into agreement(s) with affected landowners for the temporary use of their lands.

Laydown sites for staging of the civil works, processing of aggregate and producing concrete will be needed close to the bridges. Separate stockpile sites may also be required.

Heavy plant as well as specialized equipment such as concrete batching plant and cranes may be required to undertake the civil works.

The design of the bridges will consider the need to provide climate resilient infrastructure solutions that are fit for purpose and have appropriate road and bridge safety enhancements.

2.3 Types of Bridges

2.3.1 Approach road

2.3.1.1 Kolofe 1 and 2

The approach roads have 3 m wide carriageway with a 0.5-meter shoulder and 0.5-meter verge in each side of the road. On the transition area, the approach roads have 6 m carriageway with 0.5-meter shoulder and 0.5-meter verge in each way and additional sideway between shoulder and verge on one side of the roads.

The typical road cross section for most rural roads is shown in the figure below.

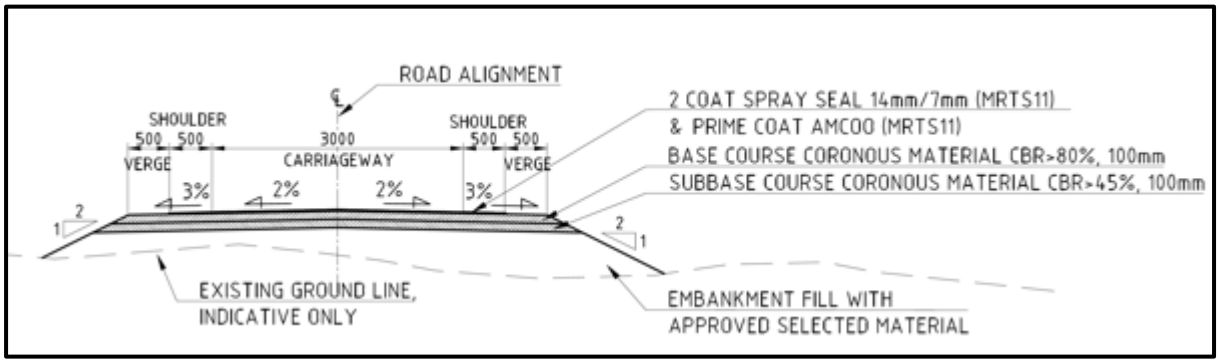


Figure 3: Typical Road cross section on Kolofe 1&2

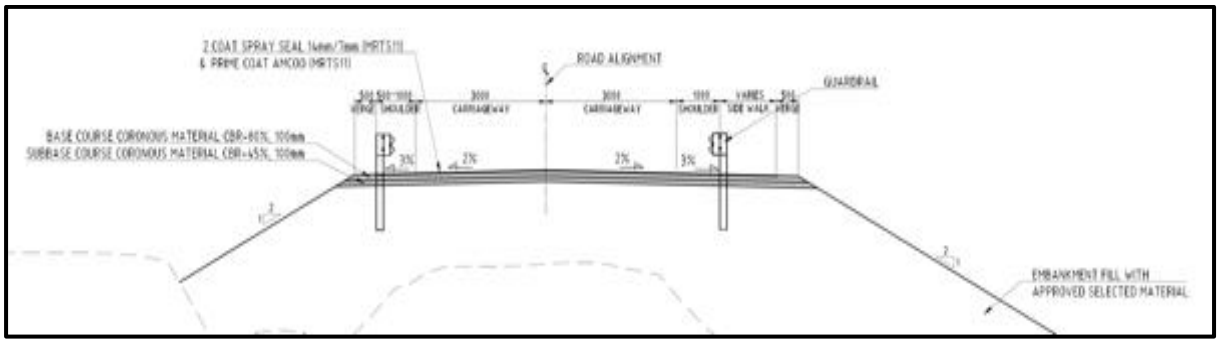


Figure 4: Typical Road Cross Section on the transition to bridge on Kolofe 1&2

2.3.1.2 Suú and Bila Bridges

The approach roads have 3 m wide carriageway with a 0.5-meter shoulder and 0.5-meter verge in each side of the road. On the transition area, the approach roads have 3 m carriageway and 0.5-meter verge on each side and additional sideway between carriageway and verge on one side of the roads.

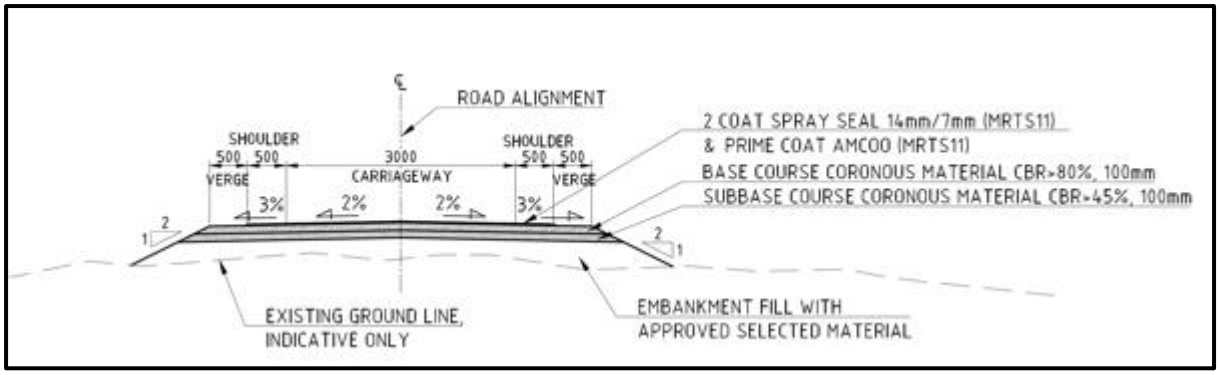


Figure 5: Typical Road cross section on Su'u and Bira

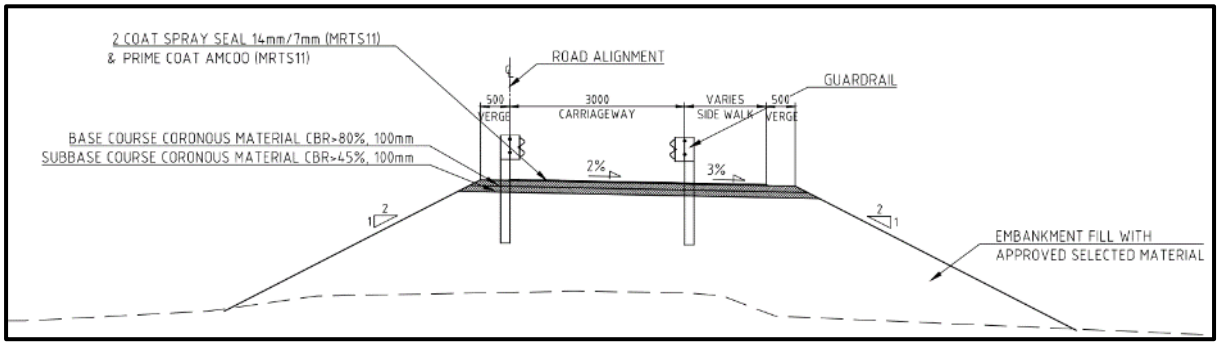
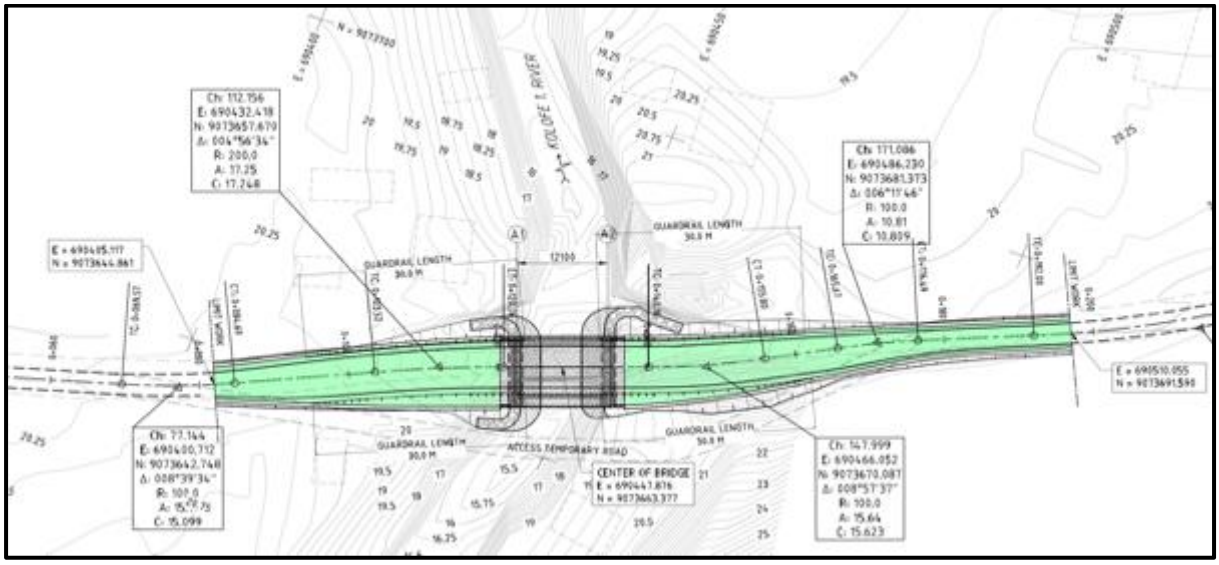


Figure 6: Typical Road cross section on the transition to the bridge on Su'u and Bira

2.3.2 Bridge Geometry

2.3.2.1 Kolofe 1&2

For Kolofe 1 and 2 the structures proposed for construction at these sites is a 12.1m long single span modular bridge and is 10.4m wide for each location. There will also be a temporary crossing or detour downstream of the existing Kolofe 1 structure and upstream of the existing Kolofe 2 culvert. The figures below depict the plan view and profile of the Kolofe 1 and 2 bridges.



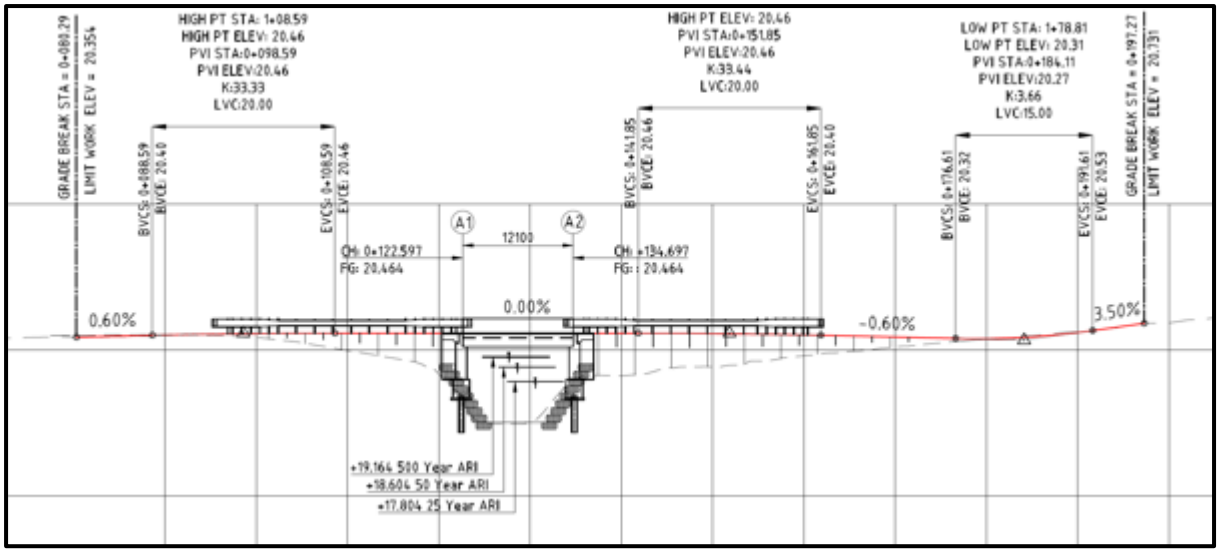


Figure 7: Plan view and profile of Kolofe 1 Bridge

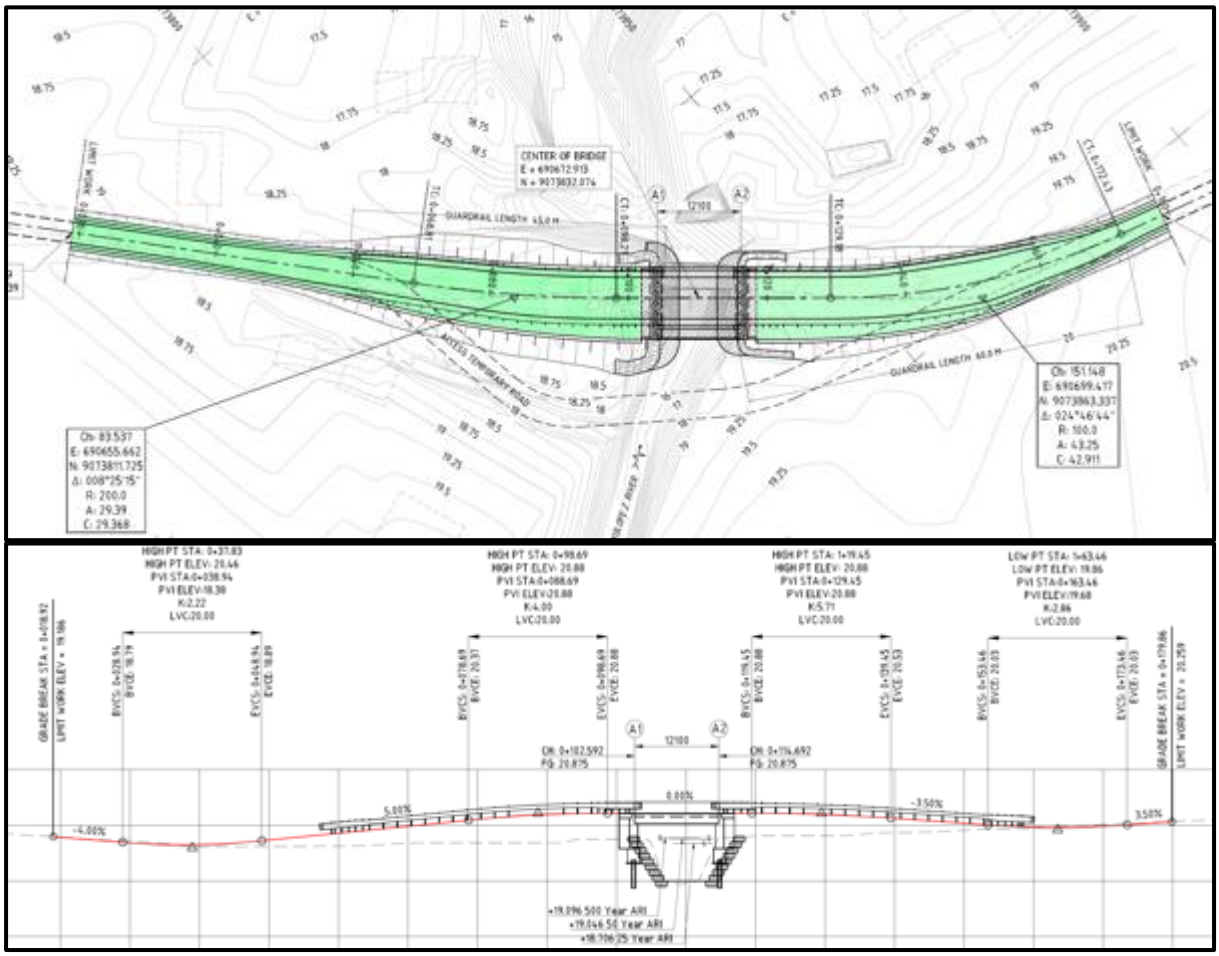


Figure 8: Plan view and profile of Kolofe 2 Bridge

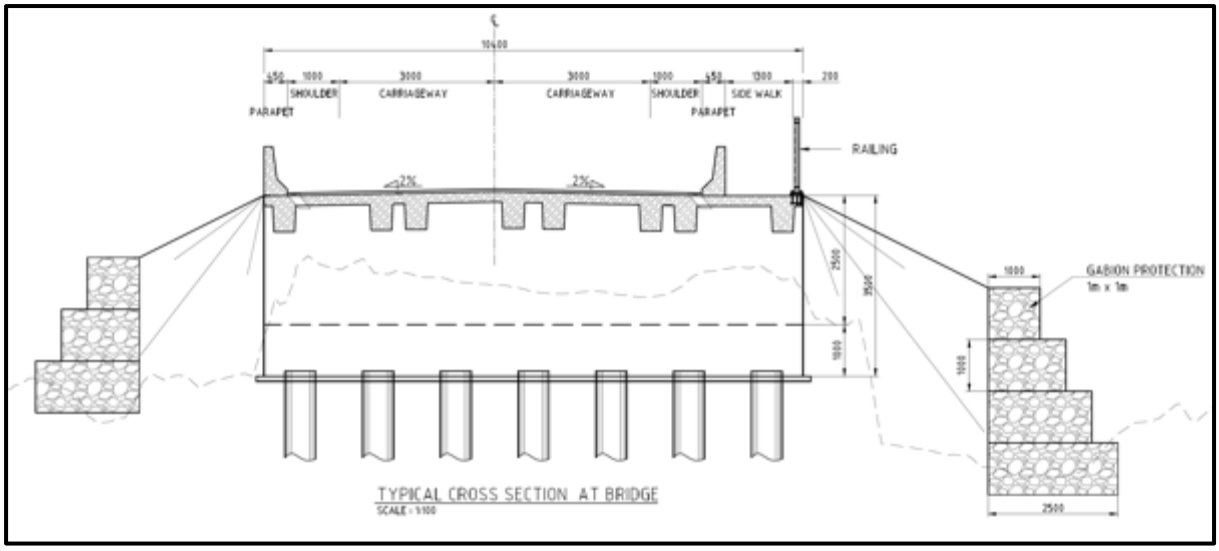
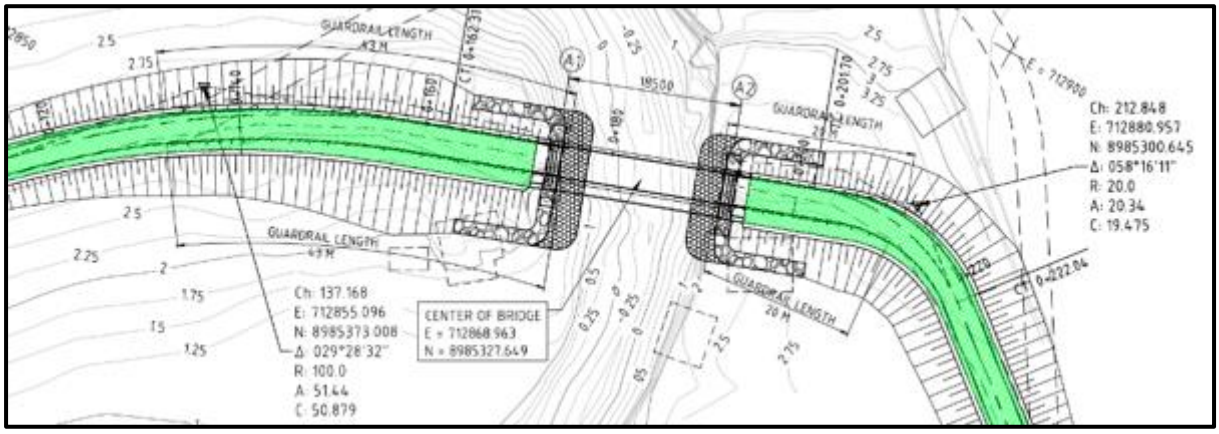


Figure 9: Typical Cross Section of Kolofe 1&2 Bridges

2.3.2.2 Su'u Bridge

Bridge to be constructed at Su'u Harbor to replace the existing structure will be a modular single span bridge, 18.5m long and 5.3m wide. There will be a detour constructed on the upstream side of the existing structure where there used to be a bailey bridge.



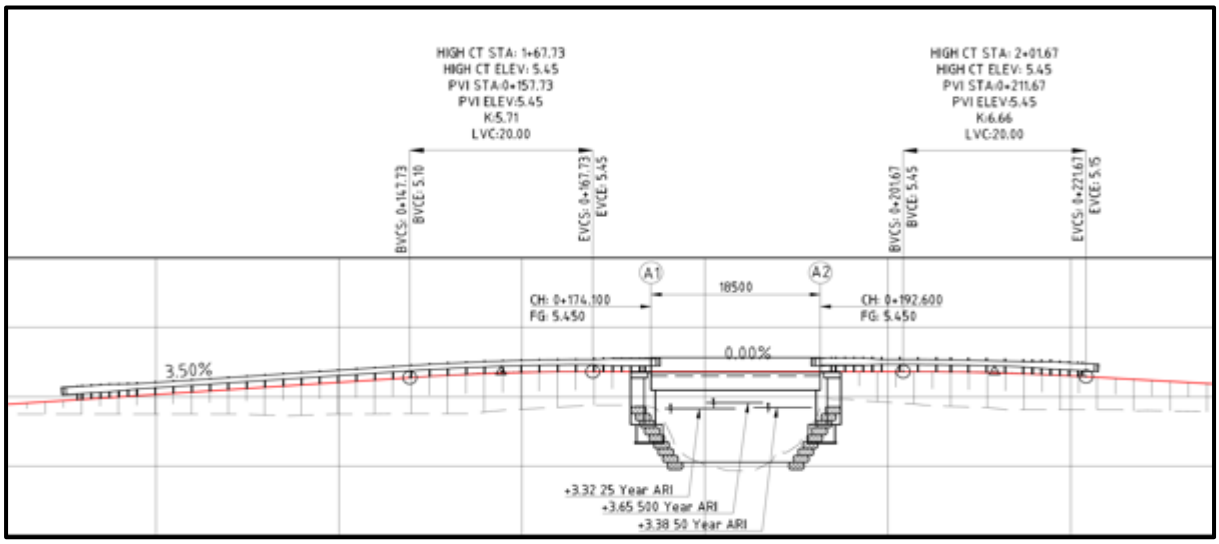


Figure 10: Plan view and profile for Su'u Harbour Bridge

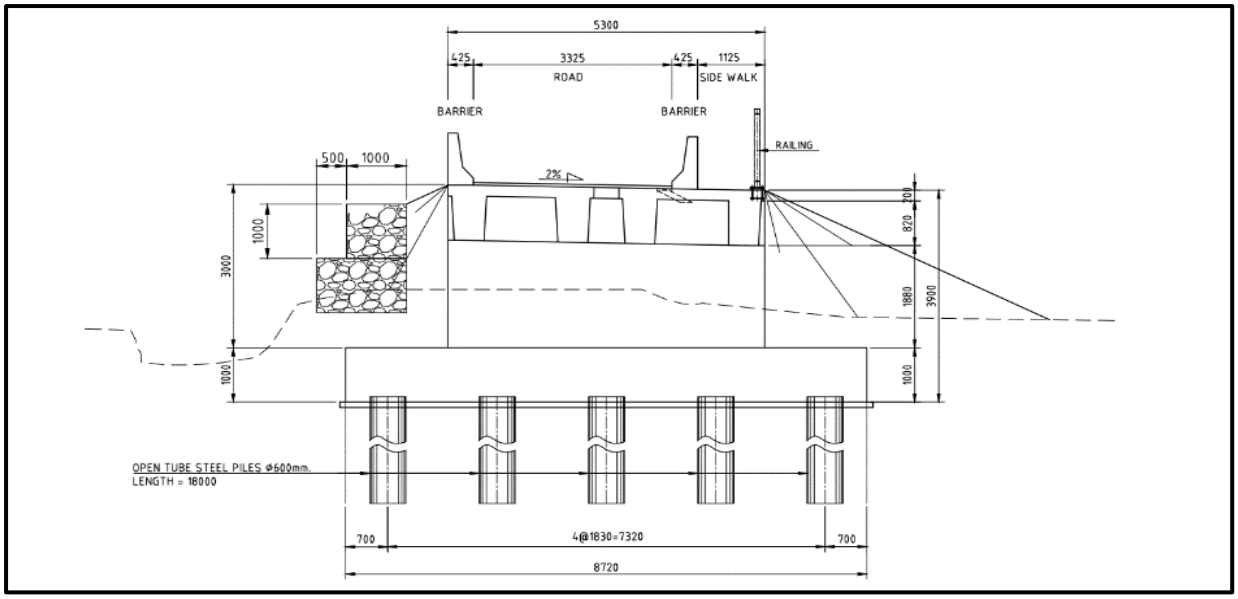


Figure 11: Typical cross section of Su'u Harbour Bridge

2.3.2.3 Bila Bridge

Modular concrete bridge with center pilar decided to be implemented on Bira Bridge. 2 span 16 m modular concrete bridge which will be 32 m long and 5.3 m width. There will be a detour constructed on the upstream side.

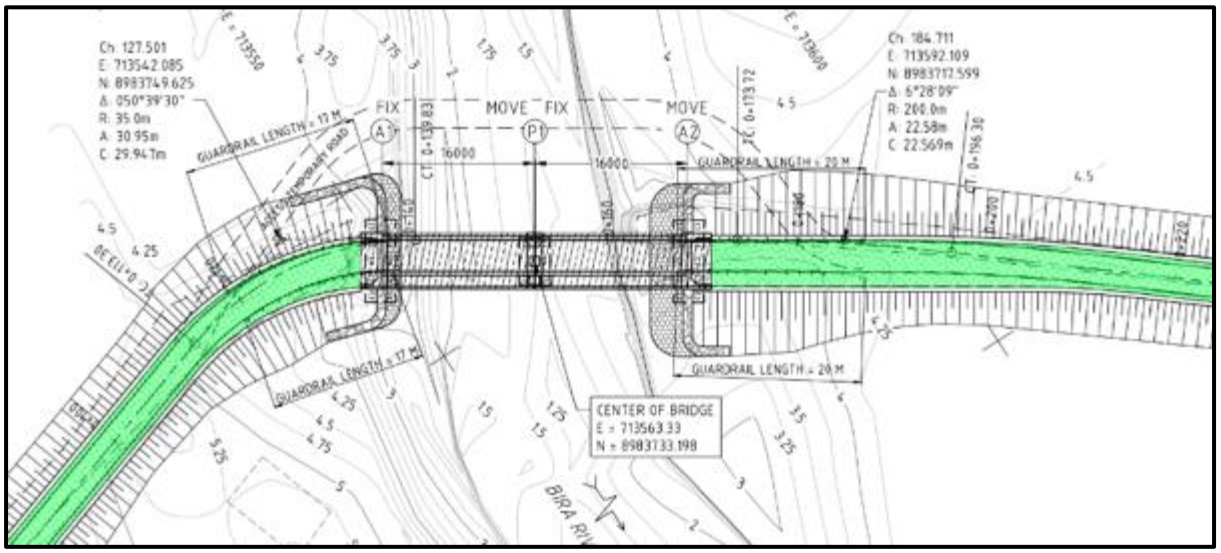


Figure 12: Plan view of Bira Bridge

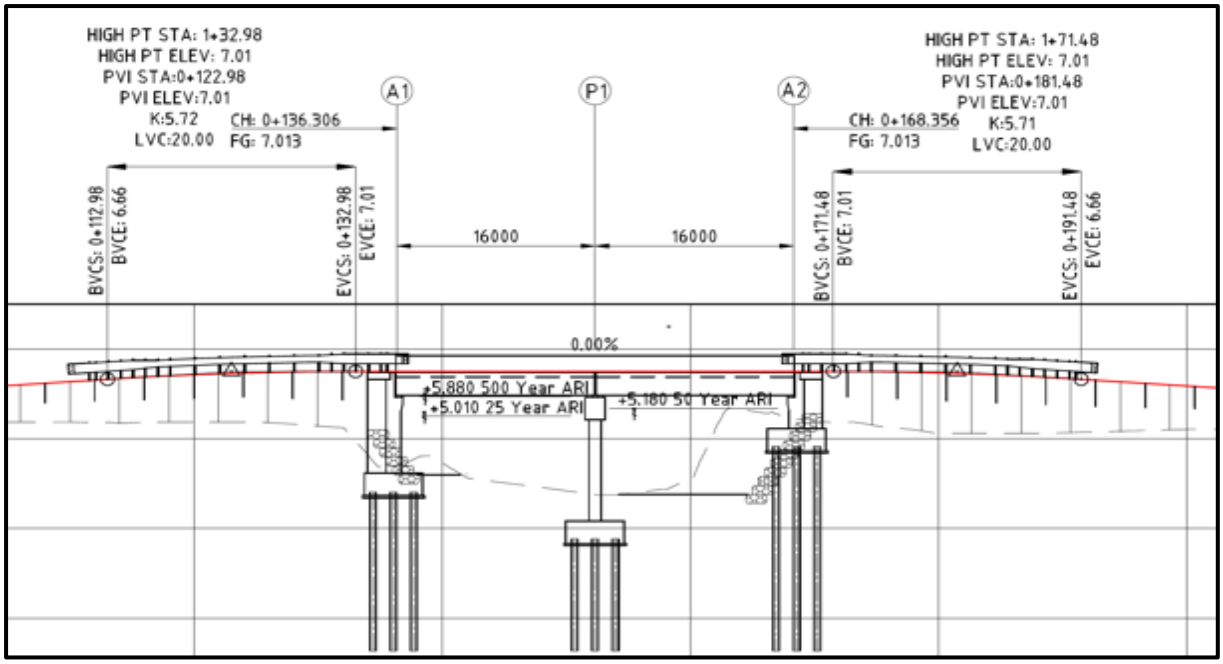


Figure 13: Profile view of Bila Bridge

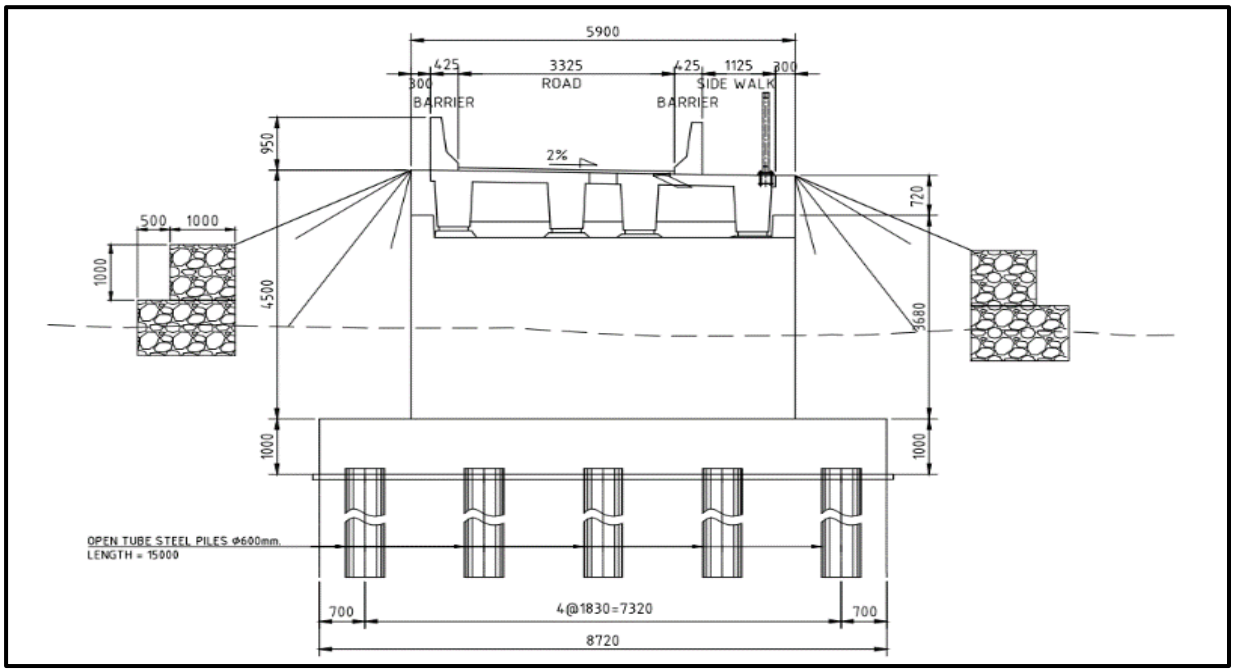


Figure 14: Typical cross section of Bira Bridge

2.4 Construction Methodology

2.4.1 Equipment

Specialised equipment such as concrete plant, cranes and materials may need to be imported for the SIRAP2 project. It is likely that general construction equipment such as excavators and rollers can be sourced locally. All cargo, whether air or ship, will need to be processed in accordance with SIG quarantine and customs laws which require fumigation (proof of) of materials and equipment and declarations by personnel (specifically regarding communicable diseases).

2.4.2 Aggregate Supply

Aggregates will be sourced from approved, permitted local river gravel and quarries where this is found to be suitable. For this project, it is anticipated that crushed aggregates will be sourced from the designated quarry site at downstream of Fiu Bridge at Gwaigeo area or any other sources approved by MID. The necessary arrangements and formalities with the rightful resource owner shall be done by the Contractor.

Necessary arrangements will be made by the contractor to source or quarry, crush and transport river aggregates and if needed coronus. For new sources the quality of the aggregate must be tested to determine if it is the required material for the works. Additionally, it is also important to ensure that the aggregate source must be free from any invasive species of plant or fauna such as the invasive Giant African Snails (GAS). Before transportation, aggregates stockpiling must be at an approved biosecurity-controlled stockpile site.

The contractor will identify location sources of coronus and river gravel to be used for the works in the Contractors Environmental and Social Management Plan (CESMP) and will prepare an aggregate extraction plan (AEP) or Quarry Plan based on the Quarry Management Plan Guideline attached in Appendix B. The plan will include the source or site (must be approved by MID and MMERE), a description of the existing environment, the volume of material to be extracted, anticipated impacts and mitigation measures. This will be reviewed and approved by the Supervising Engineer and PST then submitted to the Environment and Conservation Division (ECD) of the MECDM for further review and approval. Application for building materials permit will be the responsibility of the contractor and MID.

For extraction activities the contractor shall be responsible to consult with the resource owners and local communities for locating and establishing material sources including negotiations, arrangements, compensations or royalties and maintenances of the quarry site after extractions to the satisfaction of the Resident Engineer. Other responsibilities include material source assessment which shall include investigation of geological site characteristics and source material properties. The plant capacity for extraction and operation of the quarry to process the materials will also be provided by the contractor.

The contractor will identify a specific site which will be 300m away from the coast or any water course at the laydown and camp to do stockpiling of aggregates. Surrounding the stockpiling area proper drainage system must be constructed and silt or sediment fences must be installed to avoid siltation into the surrounding environment.

The contractor shall have appropriate Management Plans in place, including its Extraction Plan and Traffic Management Plan (TMP). Also ensure that it performs a screening on the site as well before agreeing to use any quarry site.

2.4.3 Construction Camp and Laydown Areas

The laydown site(s) (sometimes referred to as construction camp) generally will consist of the project offices, storage areas, stockpile sites, asphalt/concrete plant and associated facilities.

MID has not confirmed a suitable location at this stage. This area may be confirmed and captured at a later stage when the contractor is on board and will be included in the CESMP. The establishment of this area will need to be in accordance with the requirements of the PESMP.

Laydown site(s) size should be kept to a workable minimum, be fenced and materials and equipment kept secure to prevent access and use by non-authorised personnel. Should the laydown site(s) be located outside of the works security perimeter, the hiring of a local security firm to provide security for the area is recommended.

No company in the Malaita Island produces and sells ready-mix concrete, for the works the contractor will need to establish a concrete asphalt batching plant on site. Prior to the establishment of the concrete plant, consideration should be made on where the concrete plant is to be located as it can produce nuisances such as noise and a mercaptan odour. Depending on where the asphalt plant is finally located, there will be potential issues with noise and odour which can be managed through proper consultation with communities and to ensure that work is done during times that are acceptable especially between 7 am and 6 pm. In terms of odour issues, wind direction determines which communities are going to be impacted. Meaningful consultation will be conducted with the communities during finalisation of site and this ESMP will be updated with the outcomes of those sessions.

If located away from communities, social impacts should be minimal. The confirmed location of the laydown will be noted in the CESMP and subject to WB clearance. Planning and management of the laydown site(s) will follow all requirements of the ESMP and implementation of these mitigations, along with any additional mitigations identified by the Contractor, will be detailed in the CESMP.

2.4.4 Workers Camp

It is anticipated that there will be a need for a residential workers camp at MLT for these works. However, should a contractor wish to establish a workers' camp, appropriate land lease arrangements should be made and approved by the Supervision Engineer in conjunction with SIRAP PST. The Commissioner of Lands will approve the rate of the lease. The necessary steps required in the International Finance Corporation (IFC)/WB Workers Accommodation: Process and Standards Codes of Practice should be followed. Should a workers' camp be required, then these guidelines must be adhered to and updates made to the ESMP and CESMP as appropriate.

A Workers Camp Management Plan would be required from the Contractor following the guidelines provided in Appendix B. A Workers' Camp Management Plan addresses specific aspects of the establishment and operation of workers' camps.

Particular attention should be paid to visitor management, sanitary water systems, and waste management and measures to avoid instances of gender-based violence (GBV). An Influx Management Plan would also be required since there will be potentially an influx of skilled worker who may originate from overseas and other parts of the Solomon's to work at the Malaita Bridges. The focus of this plan is to ensure that nonlocal workers are inducted on the culture of Malaita and to manage an inappropriate contact between the non-locals and the residents close to the bridge construction site and haulage routes that may result in GBV, sexual abuse and other miss conduct.

2.4.5 Haulage 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.

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 braking and the use of speed control in and close to settlements can be implemented to reduce noise, speed, and vibration near sensitive receptors.

The haulage route is unknown at this stage, and the contractor will determine the haulage route and include in the CESMP. The CESMP should assess any requirements, and any necessary measures will be reflected in the Traffic Management Plan. Should off-peak transportation of materials be necessary, it is important to communicate this in a meaningful manner to the communities along the route, particularly those on any unsealed roads where additional traffic management may be necessary.

2.4.6 Hazardous Substances

Hardstand areas must be available for storage of hazardous substances and other equipment that poses a potential risk to the environment (e.g., leaking lubricant from machinery). Runoff from hardstand 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, paint) must be stored in a self-bunded tank or, with the Supervision Engineers' permission, within 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. The requirements to handle, store, dispose or respond to accidental spillage of hazardous substances must be reflected in the appropriate CESMPs including Hazardous Materials Management Plan, Spill Prevention and Emergency Response Plan, within Occupational Health and Safety (OHS) Plan and Waste Management Plan.

2.4.7 Waste Management

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

Solid waste includes:

- General waste (i.e., office type waste, household waste (from any workers camps), lightweight packaging materials);
- Recyclable waste (i.e., certain plastics, metals, rubber, etc. that can be recycled);
- Organic biodegradable waste (i.e., waste that will decay/break down in a reasonable amount of time, such as green waste, food waste);
- Inorganic non-recyclable waste (i.e., waste that cannot decompose/break down and which cannot be recycled); and,
- Hazardous waste (i.e., asbestos, waste oil, etc.).

Malaita Provincial Government (MPG) office should be contacted by the Contractor to assess this possibility of using a licenced landfill for these wastes. Currently in Malaita there is no proper or licenced landfill. The wastes and hazardous waste disposals will be detailed in the CESMP that will be produced by the contractor. In addition to this and with the approval of the Supervision Engineer:

- Organic biodegradable waste may be deposited in designated dumping areas in reasonable quantities; and,

- Recyclable waste may be supplied to a local receiver licensed to process such waste. The Contractor needs to find out if there are local buyers of used aluminium cans in Malaita and Honiara.

The Contractor must develop a Solid Waste Management Plan (SWMP) (Appendix B) for all generated waste streams, to be submitted as an Appendix 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.

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 another country, and to ensure compliance with all relevant laws. Evidence will need to be supplied to the Supervision Engineer of proper disposal of waste at the final location (disposal slips). This would be costly, and the cost of this must be catered for in the construction and site rehabilitation budgets.

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

Disused material will be generated in the form of bridge demolition materials (steel, concrete, timber, etc.) and from the excavations. 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 base course material) for general use by MID and the community.

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 Supervision Engineer, other surplus materials not needed during the defect's liability period shall be removed from the site.

2.4.8 Occupational Health and Safety

All occupational health and safety (OHS) requirements as per WB Environmental Health & Safety (EHS) Guidelines and SIG law must be in place and workers trained in necessary procedures (e.g. spill response plan). The OHS Management Plan Guidelines in Appendix E have been designed to reinforce existing SIG health and safety law and must be applied to all aspects of the SIRAP project. The Contractor will ensure that OHS Plans are developed as part of its CESMP and presented as an addendum to the CESMP.

For the purposes of the Project, in addition to the national OHS standards, the Employer is adopting guidelines 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 client. The Contractor shall specify which occupational health and safety standards are to apply to the Project and provide evidence of the 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 Supervision Engineer has approved the OHS Plan, the Safety Officer is mobilised and on-site, and the staff has 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 guidelines in Appendix B.

Considering the COVID-19 world pandemic, the project will ensure to protect its workers, and to comply with those regulations that of the national government requirements for COVID-19 protection measures. The Project should prioritize and look after the well-being of the workers and monitor and follow the local and national health authority guidance on Covid-19. All workers are required to undergo the COVID-19 testing, if a worker has been tested positive or in contact with a positive COVID-19 case, the worker will be required to undergo the 14 days quarantine.

2.4.9 UXO

SIRAP PST stated that unlike Honiara and Munda were the sites of several WW2 conflicts that resulted in numerous UXO's in the vicinity of SIRAP Munda and Honiara works sites, Malaita has an absence of WW2 conflict.

2.4.10 Duration and Timing of Construction Activities

The bridge works will take place consecutively. It is estimated that it will take about 6 months to construct one bridge. There will be an additional 2-4 month of Mobilisation & Demobilisation. Once the contract is awarded to a contractor, a detailed working plan showing the staging of the works for each working shift is to be submitted to SIRAP PST prior to any commencement of works. Daytime works are permitted Monday to Saturday 7.00 am to 6.00 pm subject to the facilitation of unobstructed vehicle movements. Works outside these hours, including public holidays, will only be permitted subject to approval by the Employer. Work on the site will not be permitted on Sunday. However, the Contractor may carry out work if it is unavoidable or necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer and CLO.

3 Policy, Legal and Administrative Framework

3.1 National Requirements

The SIG has a well-established regulatory framework that provides measures to protect and preserve the environment. Legislation concerning the protection and preservation of the environment is found in a number of acts and is the responsibility of a number of different ministries according to their focuses, as detailed below:

3.1.1 The Environment Act and Regulations

The Environment Act 1998 (the Act) and Environment Regulations 2008 (the Regulations) make provision for the conservation and protection of the environment. The Act provides for an integrated system of development control, environmental assessment and pollution control including; prevention, control and monitoring of pollution including regulating discharge of pollutants to air, water or land and reducing risks to human health and prevention of degradation of the environment; Regulating the transport, collection, treatment, storage and disposal of waste and promoting recycling, re-use and recovery of materials in an economically viable manner; and Complying with, and giving effect to, regional and international conventions and obligations relating to the environment.

The Second Schedule of the Act lists prescribed developments for which consent from the Environment and Conservation Division (ECD), accompanied by an environmental assessment reported as either a public environmental report (PER) or an environmental impact statement (EIS), is required. All prescribed developments require a "screening" or "scoping", to see what form/level of environmental assessment is required. Most prescribed developments require a PER, while major projects such as logging, mining, or large-scale tourism or infrastructure developments, will need a more detailed appraisal which includes technical, economic, environmental and social investigations and consultations with stakeholders, presented in an EIS.

The Regulations extend the requirements of the PER/EIS to include (a) social impact on the surrounding communities; (b) ensuring public participation; (c) spelling out employment opportunities for Solomon Islanders; (d) a demographic impact assessment; (e) health impact assessment; (f) gender impact assessment; (g) noise impact assessment; (h) state whether any of the above would have short- or long-term harmful effects on the environment. The Director may have other requirements that will need to be fulfilled, notifying applicant of any additional requirements within 31 days after notifying the applicant.

3.1.1.1 Development Consent Application

Using Form 1 (as set out in Section 17 of the Act) send a written application to the Director of ECD. This must be accompanied by a standard fee and must include all of the information requested and requiring a ruling on the type of environmental assessment that will be required (PER, EIS or waiving of the requirement). Within 30 days, the Director of ECD will reply to advise of the final requirements for the assessment of the development.

If an EIS is required, the Director will organize a Public Meeting allowing at least 30 days for people to access the reports, in order to discuss results of the assessments and hear objections from those that attend. For a PER, no public meeting is required. Within 14 days of the Public Meeting, or publication of a PER, the Director will issue a Development Consent, with or without conditions, or decline the application for development consent. The Director issues the Development Consent, if satisfied that all requirements will be met, using Form 5. This may be subject to additional conditions of implementation set by the Director. The Development Consent will require the deposit of an environmental bond of a sum to be determined by the Director. The developer will bear all costs

associated with mitigating any adverse environmental impacts and may also be charged for the monitoring requirements attached to the development consent. Costs incurred by ECD of monitoring a development will be paid to ECD by the applicant for an Environmental Inspector, or according to the costs charged by an external person or body.

Given the scope of works for the bridge works and the project risk rating, it is expected that a PER will be the requirement which will be developed based on this ESMP. The conditions of the resulting Development Consent will be included in the CESMP.

3.1.2 Other Acts

Relevant articles from other Acts governing these proposed works are listed below. It is the responsibility of the Contractor(s) to ensure that they are familiar with and compliant to these Acts.

Table 2: Other Acts with definitions

Other Acts	Definitions
Mines and Minerals Act (1996)	Definitions: "building materials" means clay, gravel, sand and stone used for buildings, roads or other construction purposes
	Definitions: "landowner" in relation to a registered interest means the person in whose name the interest is for the time being registered; and in relation to customary land, means the person or persons who is or are according to current customary usage, regarded as the owner or owners of the land;
	Definitions: "open cast mining" means surficial mining or quarrying of minerals exposed either at the surface or after removal of overburden;
	Part VIII: Building Materials, **65.** -(1) Each applicant for a building materials permit shall specify in a written application to the Director- *(a)* his full name, address or, in the case of an application by a partnership or other association of persons, the full names, addresses and nationalities of all partners or of all such persons, or, in the case of an application by a corporate body, the registered name and address of such body and the full names and nationalities of the directors and the full name and nationality of any shareholder who is the beneficial owner of more than five per cent of the issued capital; *(b)* a plan of the area, which shall not exceed half a square kilometre, for which the permit is sought; *(c)* the proposed plan for mining the building materials; and *(d)* such other information as the Director may require. (2) Each application shall be accompanied by the written consent to the issuance of the permit of the landowners in the area for which application is made, which consent may include such terms and conditions relating to surface access fees and compensation for damage as may have been agreed between the applicant and the landowners. (3) Each application shall be accompanied by payment of such application fee as shall be prescribed.
River Waters Act (1964)	**5.** Any person who, except under and in accordance with the terms and conditions of a permit issued under this Act- *(a)* by means of a ditch, drain, channel, pipe or any other means whatsoever, diverts any water from a river;

	(b) fells any tree so that it falls into a river or river bed; *(c)* in any manner obstructs or interferes with a river or river bed; *(d)* builds any bridge, jetty or landing stage over or beside any river; *(e)* damages or interferes with the banks of any river; or *(f)* contravenes any order made under section 4 of this Act, shall be guilty of an offence and without prejudice to the provisions of section 6, shall be liable to a fine of two hundred dollars or to imprisonment for six months or to both such fine and such imprisonment: Provided that nothing in this section shall apply to the diversion of water by any person for domestic purposes.
	8.-(1) The Minister or, subject to the directions of the Minister, any inspector may in writing grant permits authorising, subject to the provisions of this Act and any regulations made thereunder and to such terms and conditions as shall be therein specified, any of the acts specified in paragraphs *(b), (c), (d)* and *(e)* of section 5.
Safety at Work Act	Purpose: an act to provide for the health, safety and welfare of persons at work and to protect persons against risks to health or safety arising out of or in connection with the activities of persons at work; to impose specific requirements in respect of certain articles and substances that are a potential source of danger; to make minor amendments of the labour act and the workmen's compensation act; and for connected purposes. Provides detailed regulations governing duties of dangerous machinery (article 19), electrical installations (article 20), flammable substances (article 22), and training (schedule 1)
Labour Act	**13.**-(1) Subject to any lower maximum number of hours of employment applicable to him by virtue of any regulation, rules, contract or agreement negotiated on his behalf – *(a)* the normal weekly hours of any worker shall not exceed forty-five hours; *(b)* the normal daily hours of work of any worker in an industrial or agricultural undertaking shall not exceed nine hours; *(c)* a worker whose hours of work exceed six hours daily shall be given a break of at least thirty minutes arranged so that the worker does not work continuously for more than five hours; *(d)* hours of work and breaks from work shall be so arranged as not to require the worker's presence at the place of work for more than twelve hours daily; *(e)* a worker shall be given a weekly rest of at least twenty-four continuous hours, which shall, where practicable, include Sundays or other customary rest days; and

	(f) no worker shall be required to work on a gazetted public holiday or on more than six days in one week, unless such worker is employed in a service to which the Essential Services Act applies or in an occupation in which work on public holidays or customary rest days is expressly provided for in his contract of service. (2) The above limits on hours of work may be exceeded in those processes which by reason of their nature are required to be carried on continuously by a succession of shifts, subject to the condition that the average working hours shall not exceed nine daily and forty-five weekly over a period of three weeks; (3) Workers engaged on shift work shall be given at least twenty-four continuous hours of rest weekly notwithstanding that the incidence of shift rotas may be such that this rest period does not coincide with the normal or customary weekly rest days. (4) In order to ensure continuity of operations an employer may require workers engaged on shift work to remain on duty until relieved by the succeeding shift or until permitted to leave by the supervisor responsible: Provided that such workers shall be paid at overtime rates for any additional hours so worked. (5) The limit on hours of work specified in this section may be exceeded subject to the total hours worked (including hours of overtime) not, without the approval of the Commissioner, exceeding fifty-seven hours in any work weekly or two hundred and twenty-eight hours in any calendar month. (6) The onus of showing the necessity to extend hours of work beyond those provided for in subsections (2) and (5) shall lie on the employer in any particular case and shall be subject to approval by the Commissioner.
	37.-(1) No person shall employ an immigrant or non-indigenous worker unless such worker has obtained from the Commissioner a work permit and the employment relates to the conditions of such work permit. (2) No immigrant or non-indigenous worker whether employed or self-employed shall work in Solomon Islands without a work permit from the Commissioner which shall specify the work which such immigrant or non-indigenous worker may undertake.
	39. Women shall not be employed during the night in any undertaking, except where the night work- *(a)* has to do with raw materials or materials in course of treatment which are subject to rapid deterioration; or … *(c)* is that of a responsible position of management held by a woman who is not ordinarily engaged in manual work; or … *(h)* is not prohibited by an international convention applying to Solomon Islands and is specifically declared by the Minister by order to be work upon which women may so be employed.

	46. No child under the age of twelve years shall be employed in any capacity whatsoever**.**
	47. A person under the age of fifteen shall not be employed or work - *(a)* in any industrial undertaking, or in any branch thereof, except in employment approved by the Minister; or…
	70.-(1) At every place of employment the employer shall provide for all workers such medical attention and treatment with medicines of good quality, first-aid equipment and appliances for the transportation of sick or injured workers as may be required by the Commissioner or a Health Officer.

3.2 Regional Governance

The Provincial Government Act formalised the division of the SI into provinces with this project falling under the governance of the Malaita Province. Each province has an elected Provincial Assembly representing each of the 'wards' in the provinces. The central government has devolved a number of responsibilities to the provincial government; however, the exact delineation of authority can be unclear. Schedule 5 of the Provincial Government Act lists the provincial legislative matters and listed in Table 3 below:

Table 3: Schedule of the Provincial Government

Category	Definition
Trade and Industry	Local licensing of professions, trades and businesses, Local marketing.
Cultural and Environment	Local crafts. Historical remains. Protection of wild creatures.
Transport	Coastal and lagoon shipping. Provision, maintenance and improvement of harbours, roads and bridges.
Finance	Raising revenue by (a) head tax; (b) property tax; (c) fees for services performed or licences issued by or on behalf of the Provincial Executive (other than services performed, or licences issued by them as agent of another); and (d) such other means as may be approved for the purposes of this paragraph by the Minister by order.
Agriculture and Fishing	Animal husbandry. Management of agricultural land. Grants, loans and subsidies in respect of agricultural production. Protection, improvement and maintenance of fresh-water and reef fisheries.
Land and Land Use	Codification and amendment of existing customary law about land. Registration of customary rights in respect of land including customary fishing rights. Physical planning except within a local planning area (within the meaning of the Town and Country Planning Act or an area to which Part IV of that Act has been applied (development areas).
Local Matters	Fire services and fire protection. Waste disposal and cleansing services. Rest houses, eating houses and similar places. Public conveniences. Vagrancy. Public nuisances. Cemeteries. Parks and recreation grounds. Markets. Keeping of domestic animals. Building Standards.
Local Government	(1) The constitution, area and general powers and duties of Area Councils and similar bodies, their revenue and expenditure. (2) The making of by-laws by such bodies, that is, laws (a) affecting only the area of responsibility of the body; (b) not having effect until confirmed by the Provincial Executive; and (c) not made for a purpose for which provision is made by, or is or may be made under, any other enactment. (3) To determine by resolution of the Provincial Assembly the salaries and allowances to be paid in respect of area councillors.
Housing	Housing. Regulation of rents.

Rivers and Waters	Control and use of river waters. Pollution of water. Provision of water supplies. (Other than urban water supply in areas, prescribed by the Minister under the Solomon Islands Water Authority Act).
Liquor	Liquor licensing
Corporate or Statutory bodies	Establishment of corporate or statutory bodies for the providing of provincial services including economic activity.

3.3 Consents and Permitting

Based on a review of the legislative requirements, a summary of national consents and permits that may be required is listed in Table 4 below.

Table 4: Permitting requirements for the Malaita Bridge Works

Consents Required	Agency Responsible for Applying	Ministry
Development Consent	Contractor/MID	MECDM
License to discharge waste, emit noise, odour or electromagnetic radiation	Contractor/MID	MECDM
License to store fuel and oil	Contractor	MMERE
General waste disposal permit	Contractor	Malaita Provincial Government
Hazardous waste disposal permit	Contractor	Honiara City Council (HCC)
Exemption for offshore insurance	Contractor/MID	MoFT
Work Permit for expatriate employees	Contractor/MID	Ministry of Commerce, Industries, Labour and Immigration (MCILI)
Residency permits for expatriate employees	Contractor/MID	MCILI
Biosecurity import clearance	Contractor/MID	Ministry of Agriculture and Livestock (MAL)
Aggregate extraction permit (BMP)	Contractor/MID	MMERE
Grant of any ancillary easement or access over registered land (if required)	Contractor/ MID	Malaita Provincial Government

3.4 COVID-19

3.4.1 Solomon Islands Emergency Powers (Covid-19) Regulation 2020

On 25 March 2020, Solomon Islands declared a State of Public Emergency under s.16 of the Solomon Islands Constitution in response to COVID-19 world pandemic. Measures imposed under the SOE focused on controlling people's movement, closing borders, restricting movement of vessels and aircraft, allowing special funds to implement public safety measures, and to temporarily close public places. Some economic sectors, like informal food and betel nut markets in Honiara, were banned completely, whilst other sectors were subject to more limited restrictions. In July, despite no cases of coronavirus yet being reported in Solomon Islands, the Governor General issued another state of emergency proclamation, which was endorsed by the National Parliament.

On 27 March 2020, the Prime Minister issued the Emergency Powers (Covid-19) Regulations 2020 which listed a range of orders which were purportedly made to protect the country from the pandemic and to prevent the spread of virus if there were cases.

The Emergency Powers (COVID-19) Regulations was put in place to make orders to protect the country from the pandemic and to prevent the spread of virus. Emergency Powers (Covid-19) Regulations (No. 2) 2020 was issued in May 2020 with extended powers to impose major restrictions on freedom of media and in July 2020, Emergency Powers (Covid-19) Regulations (No. 3) was issued for extension of SOE, and this will continue to be extended while the global pandemic continues to pose a significant threat to the Solomon Islands public health.

The regulation has 5 parts to it:

- Part 1 contains important definition and spells out the application of the regulation;
- Part 2 defines and lists the Prime Ministers Powers during the Covid-19 emergency period which is still currently active;
- Part 3 defines the appointments of the authorizing officers by the PM for the effective implementation of this regulation. It also specifies the functions and powers of the authorizing officers;
- Part 4 outlines the penalties in breach of the regulation;
- Part 5 contains miscellaneous maters. Here it identifies the Ministry of Health and Medical Services (MHMS) as the official authority for disseminating information related to covid-19 Emergency Powers (Covid-19) Regulations 2020 to the public on behalf of the government.

3.4.2 Covid-19 World Pandemic – World Bank Guidelines

A guidance for World Bank Projects for Covid-19 states that to prioritize and look after the well-being of their employees and to monitor and follow local and national health authority guidance. All SIRAP2 works will consider the Covid-19 world pandemic protection measures and will follow the WBG guidance note on Covid-19[2] in conjunction with national health authority guidelines for all parties involved during the project phase. The Guideline provides information on COVID-19 symptoms, use of face coverings, COVID-19 testing, social distancing etc. The WBG guideline should be utilized in conjunction with the national health guidelines on COVID-19.

3.5 World Bank Environmental and Social Framework

World Bank Environmental and Social Risk Specialist have screened the SIRAP2 project 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 'Substantial' meaning that the project is large to medium scale and some risks have a medium probability of resulting in longer term impacts requiring significant time and investment to mitigate or remediate.

The Environmental and Social Risk Screening (ESRS) completed by the WB team identifies the relevant ESS that apply to the SIRAP2 activities. These are:

Table 5: Relevant ESS to SRIAP2

Standard	Relevance from ESRS
ESS 1: Assessment and Management	The project will present a number of environmental and social risks and/or impacts. To manage those risks, the project will assess and manage the risks

[2] http://pubdocs.worldbank.org/en/324831581700447537/COVID-19-Guidance-for-Contractor(s)-CO-Final.pdf

of Environmental and Social Risks and Impacts	and impacts associated with the project in a manner that is proportionate to the significance of the potential risks and impacts. Site specific ESMPs will be prepared for the project site to cover all infrastructure investments (including ancillary infrastructure) Each ESMP will apply the national regulations, the WB ESF ESS and/or 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 contractor(s). 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 on the outer islands may result in design, construction and operation impacts. Inadequate designs could result in the inefficient consumption of resources such as construction materials or energy, completion of activities such as dredging in significant risk areas, increased risk of hydrocarbon spills during construction and operations and poorly managed run-off, greywater and sewage. Risks will be considered in the preparation of the site specific ESMPs and TORs of infrastructure designs
ESS 4: Community Health and Safety	ESS4 is relevant. The potential E&S risks will need to be managed, both during the construction and operational phase. The Solomon Islands has a high background rate of GBV. The increase in the labour influx for the project has been considered under SRIAP2, and the risks that come with it have been identified and described in the ESMF for SIRAP. Measures to help reduce or eliminate instances transmission of HIV/AIDS, SEA/SH induced by the project will be in place and the responsibility will fall on the contractor(s) to ensure that these measures are implemented, for example all workers will be required to sign 'Codes of Conduct' describing their responsibilities. Infection Prevention and Control measures in the form of a training, awareness will be implemented to provide knowledge on transmission of disease but also measures to prevent COVID transmission in light of the current pandemic.
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	This standard is considered relevant as there will be land required for several project components. Discussions between the Ministry of Communication and Aviation (MCA) and the Ministry of Lands is taking place address the parcels of land and a process of land acquisition by the government for the project but the transaction is not yet complete and official. For this reason any activity related to land has a substantial risk for the project, including reputational risk. For this matter, a resettlement plan (RP) will be prepared to capture any land impact under the two components 1 and 2. It is also

	anticipated that the design for the terminal in Munda will require some land acquisition. In this case, it is important for the project to prepare a resettlement plan. Elements to be considered in the RP will require the project to identify the selected land to be acquired, for example in Munda, ongoing discussion with the landowners have taken place under the current SIRAP project. The RP will include the scope and scale of land acquisition, alternative measures considered to avoid or minimize displacement and why those were rejected. No land acquisition or resettlement is expected for the activities described in this ESMP.
ESS 6: Biodiversity Conservation and Sustainable Management of Natural Resources	ESS6 is considered relevant for the Noro Road works on New Georgia Island. It is not considered relevant to the Malaita Bridge works and is therefore not discussed in this ESMP.
ESS 8: Cultural Heritage	The ESS8 on cultural heritage may be relevant depending on existing sensitive receptors along the ROW on the lead up to the identified bridges, and excavation works to be conducted on the approach roads. The site specific ESMPs will determine the baseline condition of proposed project locations and further assess any potential risks and impacts on and restriction of access to cultural heritage (tangible and intangible). The assessment will be informed through engagement with communities, including women and girls, to identify cultural and spiritual places of value and significance of them.
ESS 10: Stakeholder Engagement and Information Disclosure	The project recognizes the need for effective and inclusive engagement with all of the relevant stakeholders and the population at large. A Stakeholder Engagement Plan (SEP) will be prepared for engaging with stakeholders on the E&S risks of the project and will be disclosed on the MCA and MID official website. The SEP will identify and analyze key stakeholders (i.e., affected parties, other interested parties and disadvantaged and vulnerable groups) and describe the process and modalities for sharing information on the project activities, incorporating stakeholder feedback into the Project and reporting and disclosure of project documents.

3.5.1.1 Accompanying ESF Instruments

The following instruments have been produced for all SIRAP2 project sites and should be implemented in conjunction with this ESMP.

LABOUR MANAGEMENT PROCEDURE (LMP): The LMP includes terms and conditions of employment, non-discrimination 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 will be based upon meaningful consultation and disclosure of appropriate information.

RESETTLEMENT POLICY FRAMEWORK (RPF): RPF has been developed to manage any potential risks relating to the acquisition of land for SRIAP2.

3.5.1.2 Environmental, Health and Safety Guidelines

There are also WB Environmental, Health and Safety Guidelines (EHSG) which apply to these works and have been used to inform the mitigation and management measures in this ESIA.

GENERAL EHSG[3]: these guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP).

[3] https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines

4 Project Setting

4.1 Site Description

At the targeted bridges, as with the rest of the Malaita Road network, the habitat would have originally been upland and lowland coastal forest, however the areas have been altered to accommodate for agriculture and much of the land along the roads and bridges have been converted to predominately coconut (copra), cocoa and pineapple plantation. There are no primary or pristine areas of native vegetation at the project sites. Furthermore, there are no known rare or endangered species in the project sites.

Figure2 shows the conditions of the bridges as recorded during SIRAP site visits in May 2018, July 2020, and in August and September 2023.

Table 6: Conditions of Kolofe 2, Su'u Harbour and Bira Bridges documented under SIRAP in 2018

Kolofe Bridge 1
 
2020 status: Bridge log stringers rotted over time, broken and collapsed causing the structure to collapse. Timber decking and runners also rotted and broken, the whole structure was dismantled and removed from the site of crossing. A temporary bridge using logs and gravel was built for crossing but not to standard. A new bridge is required for crossing over the stream so that connectivity and safety is restored to travelling public. 2022 status: unknown
2023 Status: Bridge is made up of coconut trunks with aggregates used as decking but has been washed away over time.
 
Kolofe Bridge 2

2018 status: This 11.3 metre log bridge has gabion abutments, log beams and a timber deck. It was constructed in 2007-2009. The bridge is deteriorated and was identified as one of the 15 bridges for specific maintenance in 2018.
2022 status: unknown

2023 status: The bridge has deteriorated with log beams and timber decking in poor condition. Damaged timber on the bridge decking has been replaced by local community people to ensure flow of service in the area.

Su'u Harbour Bridge

2020 status: This 21.7 metre bailey bridge was destroyed by logging trucks. The logging company has constructed a temporary log bridge with log abutments, log beams and a timber deck.
2022 status: unknown

2023 Status: The temporary log bridge has deteriorated and is in poor condition. The timber decking has been replaced with aggregates to allow for vehicles to cross.


Bila Bridge



2018 status: This temporary log bridge has log abutments, log beams and is filled up with gravel.
2022 status: unknown

2023 Status: At present there is no bridge at the current location and vehicles are not crossing the river to get to the other side.


4.2 Sensitive Receptors

Initial identification of sensitive receptors close to the target bridges have been identified from the environmental and social screening that was undertaken as part of the SIRAP ESMF and are marked in the figures below. These receptors were identified during initial site visits in 2018 during the scoping of the original SIRAP and confirmed during the design engineer team' visit in 2023.

The bridge works will take place in two wards: Takwa (Kolofe 1 and 2 bridges) and Kwarekwareo (Su'u and Bila bridges). Both wards are rural with scattered villages. However, the North Road servicing Takwa Ward is the main corridor for those coming to Auki from the north and east and therefore experiences a higher level of traffic and a higher density of rural settlements.

Kolofe 1 and Kolofe 2 (Ruú) bridges crosses the Kolofe stream and Ruú stream respectively and are located in Kolofe village about 300m apart from each other. There are residences or houses surrounding, a clinic west of Kolofe 1 bridge and a church and a community hall 100m northeast of the bridge. On the western end of the Kolofe 1 bridge is a market hut and a shop at the western end of Kolofe 2 bridge.

The Suú Harbor bridge is located in Suú Harbor at Aibareo village. The closest house to the bridge is less than 5m south and about 7m north of the bridge. This bridge crosses the Aibareo stream which runs from inland through a mangrove ecosystem and runs out to the coast where the bridge is located. While the Bila bridge crosses the Bila stream located in Bila village. South of the bridge site is where village women usually do their washing. Southeast of the bridge site is the community water source and a tambu site (grave site) is situated southwest of the site.

See in figures below detailed mapping of the sensitive receptors identified during the site visit in August and September 2023.

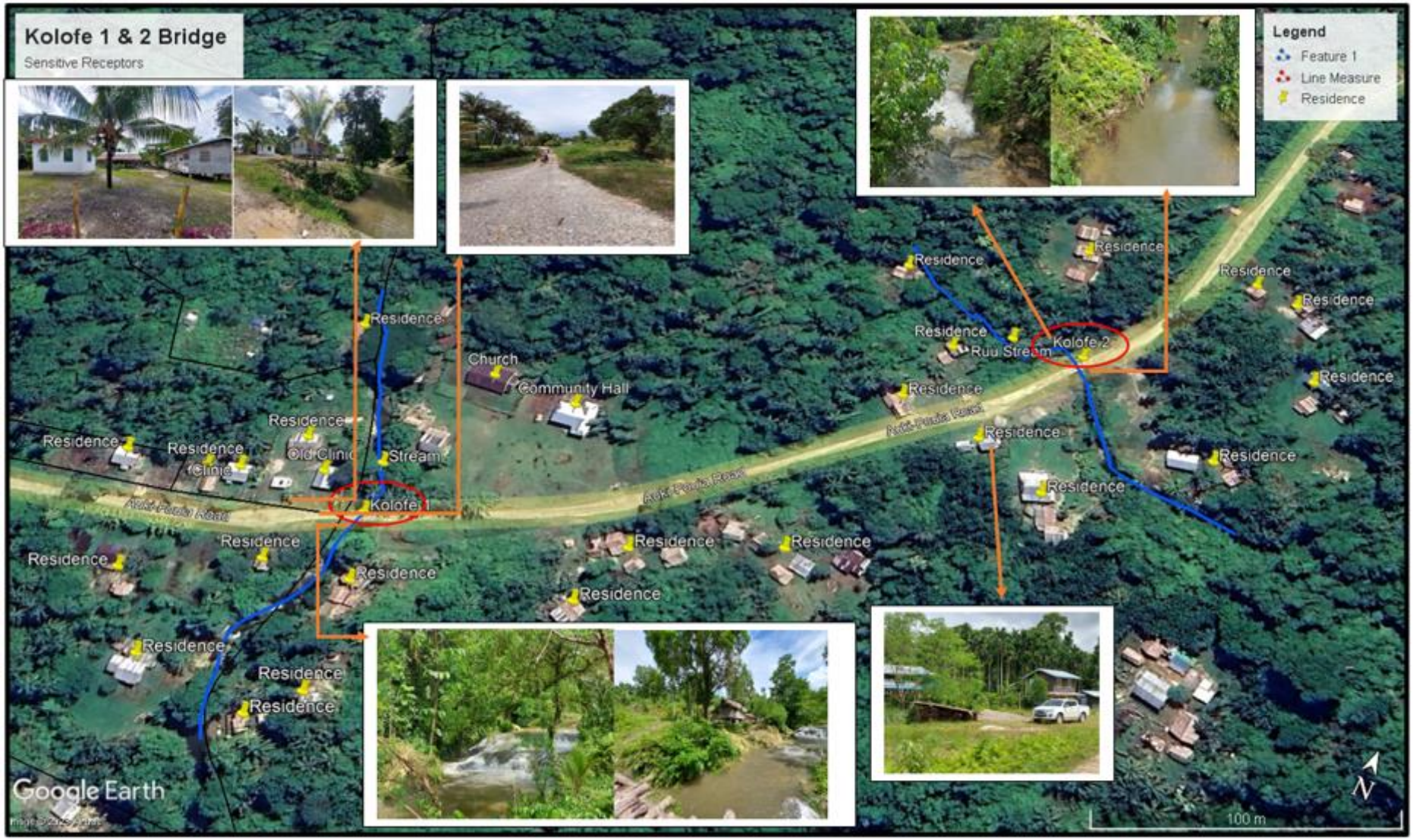


Figure 15: Kolofe 1 and 2 Bridges

Figure 16: Suú Harbour and Bila Bridge Sites

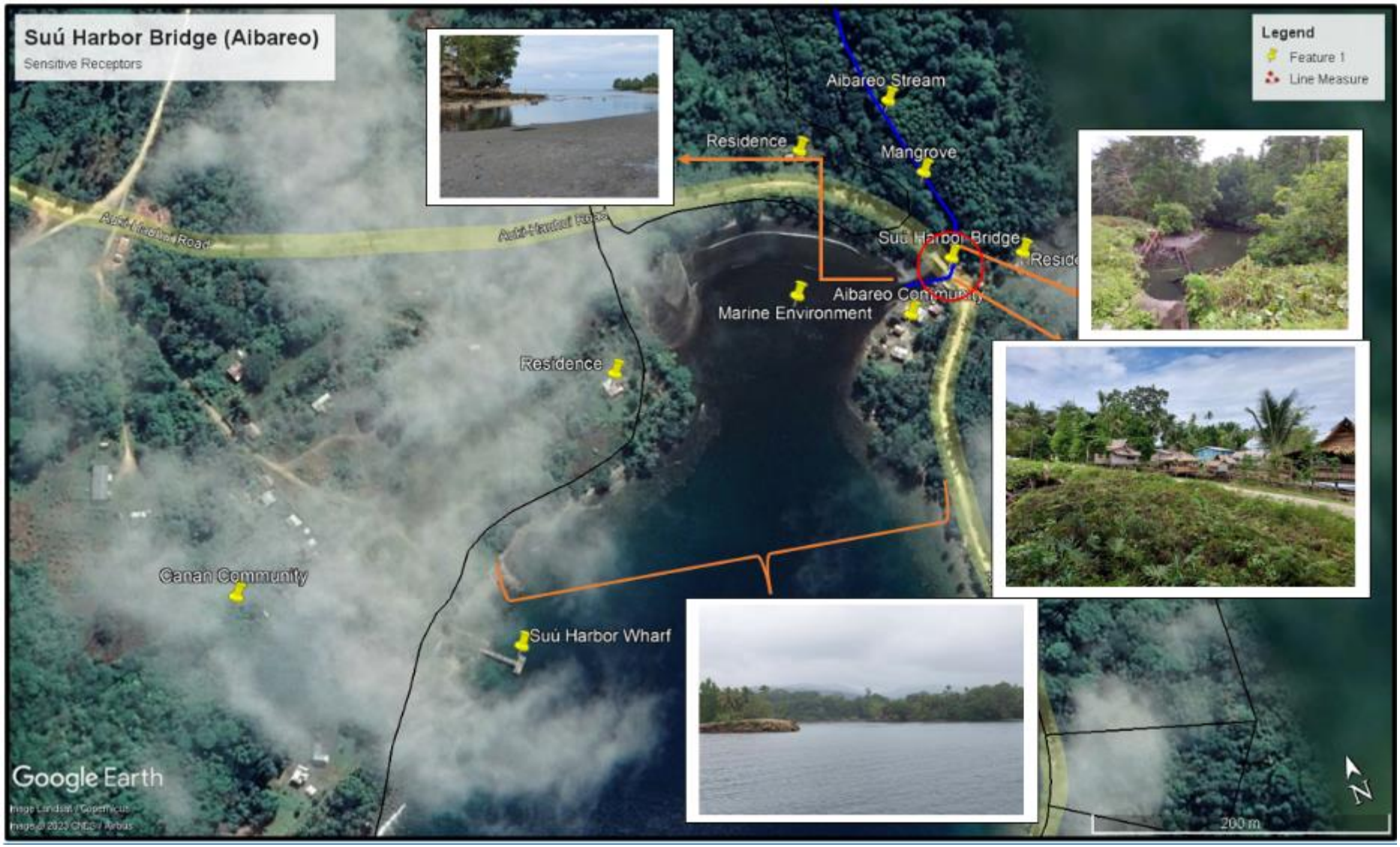


Figure 17: Suú Harbour (Aibareo) Bridge

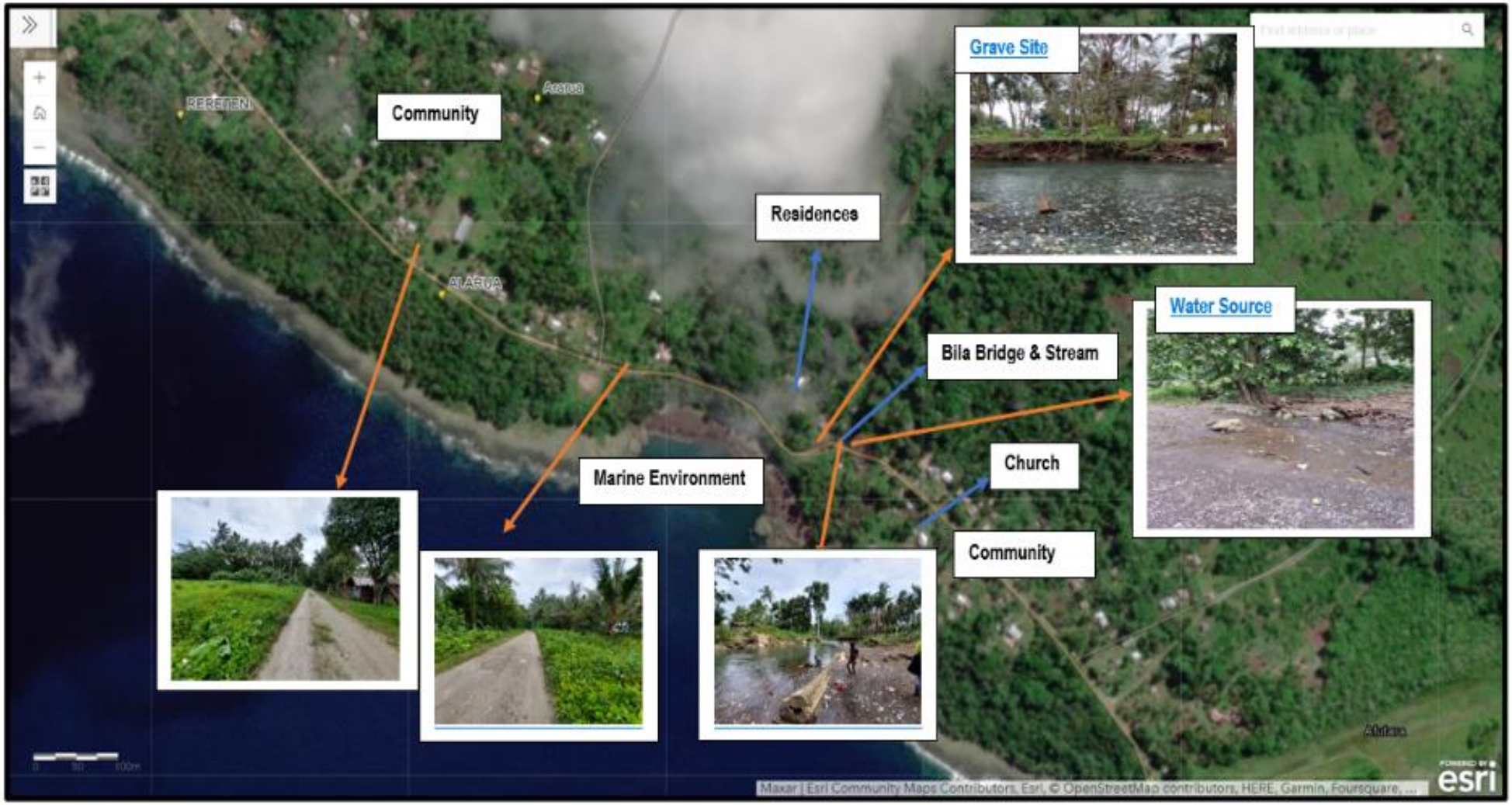


Figure 18: Bila Bridge Site

4.3 Physical Environment

This status of existing conditions has been undertaken based on the site visits undertaken in November 2019, July 2020, August and September 2023 to Malaita during field observations, and a number of secondary sources. The following sections provide baseline information on the physical environment.

4.3.1 Location and Geography

The Solomon Islands is the Pacific's largest archipelagic nation, extending some 1,500 km from east to west and consisting of nearly 1,000 islands, the largest of which include Guadalcanal, Malaita, and New Georgia (in Western Province). The country is bordered by Papua New Guinea to the west, Nauru to the north, Tuvalu and Fiji to the east, and Vanuatu to the south.

Malaita is the largest island of the Malaita Province in the Solomon Islands (Figure 19). It is a thin island about 160km long and 37km wide at its widest point. A topical mountainous island, Malaita's river systems and tropical forests are largely unexploited. The main structural feature of Malaita is the central ridge which runs along the length of the island, with flanking ridges and a few outlying hills. There is a central hill country between Auki and the Kwai Harbour which separates the central ridge into northern and southern halves. The roads targeted for upgrades under SIRAP are mountainous and steep in places.

Figure 19: Geographic location of Malaita

4.3.2 Climate

Malaita has a climate that is largely controlled by the seasonal movement of the equatorial trough. The temperature and humidity in the Solomon Islands are relatively high and uniform with the former ranging from 22oC to 31oC throughout the year. The most variable of the climactic elements across the provinces is rainfall which can be abundant each month and is variable based on the different topographic features of the islands. Climate data for Auki is about 3200mm annually (compared to 1,858mm in Honiara) and even the driest months still experience a lot of rainfall.

From about January to March, the equatorial trough is usually found close to, or south of the Solomon Islands, and this is a period of the west to north-westerly monsoonal winds. The heaviest rainfall at most places also occurs at this time. From May to October, the trough moves to the Northern Hemisphere so the Solomon Islands comes under the influence of the south-westerly trade winds which can bring heavy rainfall, especially to the western sides of the islands. The transition months between these dominant weather patterns usually bring more frequent periods of calmer winds.

Thunderstorms are relatively common across the Solomon Islands, especially over the larger and more mountainous islands, building up inland on many afternoons and, if winds are favourable, drifting towards coastal areas. Peak thunderstorm period is between December and March.

A number of tropical low pressure systems occur each year over the Solomon Islands at times when the equatorial trough is in the vicinity, but few of these develop into tropical cyclones. The average frequency of cyclone occurrence is between one to two per year, although these tend to develop southwards and tend to be early in their life cycle meaning they are relatively small but can, nevertheless, cause serious damage to infrastructure, crops and water supply.

4.3.3 Rainfall Data

It rains heavily in Auki from December through to April and relatively little from May to November. The figure below shows the average monthly rainfall based on observation records of Malaita over the past 10 years (2010 to 2019). There is on average 180mm of precipitation in June (the driest month), and in January and March, the precipitation reaches its peak, with an average of 420mm. The most considerable daily precipitation observed at Malaita in the past 10 years is 967.4mm which occurred during March 2013.

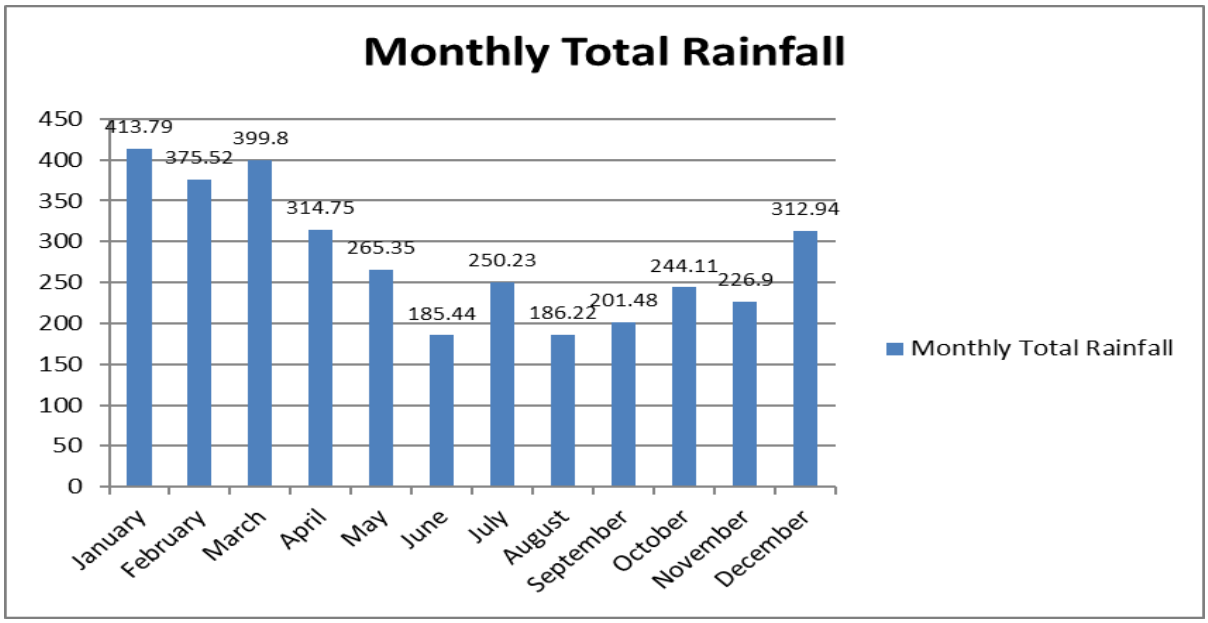


Figure 20: Monthly Total Rainfall

In comparison, Malaita's average annual rainfall for the past 10 years is 3376.53mm while Guadalcanal's average annual rainfall in the past 10 years is 2228mm. Thus, Malaita has more significant rainfall occurrence than Guadalcanal.

4.3.4 Water Resources

Water resources in the Solomon Islands range from sizable rivers to small streams from high mountainous and dense rainforests to rainwater harvesting and thin freshwater lens of the underground aquifer of the small low-lying atolls and islets.[4]

With adequate rainfall and large infiltration area, considerable freshwater resources are available on Malaita, however, access to plumbed running water varies across the island. Drinking and household use in both rural villages and urban centres account for the largest water withdrawal in the country.

[4] Solomon Islands Roads and Aviation Project Environmental and Social Management Framework, Malaita Road Infrastructure Upgrades (February 2019)

There is limited agricultural water demand because most crops are rainfed. The industrial sector of the country withdraws water for fish processing cannery, palm oil factory, mining operations and some small manufacturing industries.

On the larger islands, surface water in the form of streams, springs or rivers is the main source of drinking water. Some communities on the higher volcanic islands also use groundwater for domestic purposes. In areas where surface water supply is not available for farming, groundwater is used if available.

In urban areas, piped water accounts for 75 percent of total water withdrawal, rainwater tanks account for 22 percent, borehole/spring/wells account for 1 percent, and other sources account for 2 percent.

4.3.5 Water Quality Assessment

In situ water quality testing of the physical and chemical water quality particularly for dissolved oxygen (DO), temperature, conductivity, pH, turbidity, and Oxygen Reduction Potential (ORP) for Suú Harbour and Bila bridge sites was undertaken on August 29th and 30th 2023. However, this testing did not include testing for microbial water quality (total coliform and E. coli). This will be undertaken before the construction commences.

For Kolofe 1&2 bridges sites, the testing was not undertaken due to rain which could affect the parameters for testing. The water quality testing for Kolofe 1 and 2 streams will be undertaken before the construction works. The table below shows the water quality test results for Bila and Suú bridge sites and Bila drinking water source.

Table 7: Result of physical and chemical water quality in situ testing for Su'u and Bila

Site	Temperature (°C)	pH	Oxygen Reduction Potential (ORP) (mV)	Turbidity (NTU)	Conductivity ((µS/cm))	TDS (mg/L)	Dissolved Oxygen (% DO)	DO (mg/L)
Site 1 – Bila Upstream	26.43	8.29	137.5	2.5	338	0.167	180.9	14.21
Site 2 – Bila Downstream	26.35	8.30	135.7	2.8	343	0.171	220.2	17.72
Site 3 – Spring (Drinking Water)	26.8	8.22	113.8	0.3	11	0.551	178.8	13.07
Site 3 – Suú Harbor Bridge	26.8	7.6	35.5	48.9	22.35	11.8	171.6	12.04
Site 4 – Suú Harbor Bridge	27.2	7.92	61.7	2.9	26.83	15.06	126.8	12.39

4.3.6 Geology

The Solomon Islands is a double chain archipelago of islands formed by a fertile volcanic rock through tectonic activity also known as the Pacific Rim of Fire. The Solomon Islands (excluding the Santa Cruz group) are divided into three geological Provinces: Pacific Province, Central Province and Volcanic Province. Islands with a recent extinct volcano which included the north-western tip of Guadalcanal, the Russell Islands, Shortlands and Savo are found in this province. The volcanic geological province is much younger and consists of Late Miocene to Holocene volcanic, which are five to six million years old.

The geology comprises a mono-lithological Cretaceous basalt basement sequence up to 3-4km thick, termed the Malaita Volcanic Group, (MVG), conformably overlain by a 1-2km thick Cretaceous-Pliocene pelagic sedimentary cover sequence. Cretaceous-Pliocene pelagic sedimentation was punctuated by alkaline basalt volcanism during the Eocene and ultramafic alnoite intrusive activity

during the Oligocene. Basement and cover sequences were both deformed by an intense but short deformation event during the Mid-Pliocene. [5]

4.4 Biological Environment

The sections below describe the status of marine and the terrestrial environment with the presence of rare or endangered species.

4.4.1 Flora

The terrestrial ecosystems of Solomon Islands include tropical moist forests, montane forest and secondary vegetation, grassland and savanna, swamps, lowland rain forest, and cropland. Forest makes up 86% of the country's vegetation communities with low altitude forest accounting for the vast proportion of this, while cropland and bush account for 10% of the vegetation communities.

The Solomon Islands is characterized by a high level of biodiversity of plants including 3,210 species of vascular plants, although this is believed to be an under-estimation and a correct estimate is in the order of 4,500 when unrecorded species are included. While diversity is high, endemism is low, with no endemic families and only three endemic genera. Endemism of species is not accurately known but is thought to range from 10% of fern species to 80% of pandan species. The islands with the highest rate of endemism are Santa Cruz (Temotu) and Guadalcanal.[6]

There are several different vegetation zones, based on altitude. Along the coast is either a rocky or sandy beach, where pandanus, coconuts, and vines predominate, or a swamp, supporting mangrove and sago palms. Terminalia grows in some drier areas. The lower slopes, up to about 2,500 feet (760 m), have a hardwood forest of banyans, Canarium, Indo-Malayan hardwoods, and, at higher altitudes, bamboo. In forested groves, there is relatively little undergrowth. In this zone is also the most intense human cultivation, which, when abandoned, a dense secondary forest grows, which is nearly impassibly thick with shrubs and softwoods. Above about 2,500 feet (760 m) is a cloud forest, with dense carpeting of mosses, lichens, and liverworts, with cycads as the dominant tall plant.

The project traverses areas of what would have been lowland coastal forest. This area has now been altered to accommodate agriculture, and much of the land along the roads have been converted to predominantly coconut (copra), cocoa and pineapple plantations.

Suú Harbour bridge crosses a mangrove swamp and is within a coastal area. Upstream of the bridge comprises mostly of mangrove tree species with ground cover including ferns, shrubs and vines. While at the bridge site is mostly regrowth comprising of grass and weed such as crowsfoot and blue porterweed. From the site visit undertaken it was observed that there will not be any significant impact on the mangrove trees and impacts will only be on flora on the existing bridge site.

[5] Petterson, M.G (2018), The Geology of North and Central Malaita Solomon Islands: The thickest and most accessible part of the world's largest (Ontong Java) ocean plateau.

[6] Solomon Islands Roads and Aviation Project Environmental and Social Management Framework, Malaita Road Infrastructure Upgrades (February 2019)

Figure 21: Mangrove at Suú Harbour Bridge site

Figure 22: Vegetation cover at bridge site

Surrounding the Bila bridge site, vegetation comprised of cultivated sago palm, breadfruit, banana and ngali nut, and ground cover include ferns, vines and shrubs. There will not be any impact on the cultivated trees or crops or any significant flora on site.

Figure 23: Trees and other vegetation at Bila Bridge site

At the Kolofe 1 and 2 bridges is mostly ground cover such as common ferns, vines, grass and weeds. Other plants on site include cultivated banana, sago palm, coconut and mango trees. Plants that will

be affected by the works are coconut trees at the proposed detour site at Kolofe 1 and some banana trees at the eastern end of Kolofe 2 site.

Figure 24: Trees and other common vegetation at Kolofe 1 and 2 bridge sites

4.4.2 Fauna

The terrestrial fauna of the Solomon Islands is extremely diverse and includes 223 species of birds (173 residential terrestrial species and 50 other species of shore/sea bird and migratory), 52 mammals (all of which belong to the bat and rat family), 61 species of reptiles (25 are endemic) and 17 species of frog.[7]

The Solomon Islands has a high level of bird diversity and is recognised for the degree of speciation and population variation between islands. Birds are by far the most studied animal group in the Solomon Islands with Malaita being home to 3 species which are endemic to that island.

There is only once species of crocodile in the Solomon Islands, the saltwater crocodile (*Crocodylus porosus*). The ban on hunting crocodile in the early nineties has resulted in a significant increase in the crocodile population throughout the country with increasing reports of attacks.

From the site visit and observation at the project locations it was noted that aquatic fauna comprised mostly of guppy and gobby fishes which are common in most streams and rivers on the island and country. Terrestrial fauna observed on site are mostly toads, but no bird nests sited. Also, since the

[7] Solomon Islands Roads and Aviation Project Environmental and Social Management Framework, Malaita Road Infrastructure Upgrades (February 2019)

bridges are located in the proximity of settlements there are some domesticated animals within the area. From these observations it was noted that there will not be any major impacts on any natural habitat or fauna species on site as the areas are within villages or settlements.

4.4.3 Rare or Endangered Species

The Solomon Islands is one of the most biologically diverse countries in the world, linked to this is a high number of critically endangered, endangered, vulnerable and endemic (to the country and provincial level) species. The State of the Environment Report details many of these species, however for the scope of these works this report only looks at species identified in the State of the Environment (SOE) report for Guadalcanal and only considered the immediate environment surrounding the project site.

For the Malaita Province, the 2008 International Union for Conservation of Nature Red list of endangered species lists 3 bird species as critically endangered, along with 6 threatened bird species and 3 endemics at the provincial level.[8] At the project sites there are no rare, endemic or endangered species sighted.

4.5 Socio-Economic Conditions

4.5.1 Population and Demographics

The last census for the Solomon Islands was undertaken in 2019. The census in 2019 recorded the population for Malaita as 172,740 with 7,020 people living in the main town of Auki. The population density for Malaita Province was 40.9 per km2. The population of Malaita has an annual growth rate of 0.9%, and for Auki is 3.2%.

Malaita's population pyramid has a distinct feature which is narrow bars at roughly ages 20-30. It is evident that Malaita lost people of these age groups as they migrate to the capital Honiara or other urban centres in search of employment, education and/or for other reasons. Malaita has a relatively young age structure, with 40% of the population younger than 15 years of age; 53% are in the so-called working age groups 15-59, and 7% are older than 60.

The population distribution of Malaita is represented in Figure 25below, which is shaded to represent population density according to the most recent census data. The main town of Auki is not the most populated area. Most people on Malaita live in the northern villages along the roadside.

[8] Solomon Islands Roads and Aviation Project Environmental and Social Management Framework, Malaita Road Infrastructure Upgrades (February 2019)

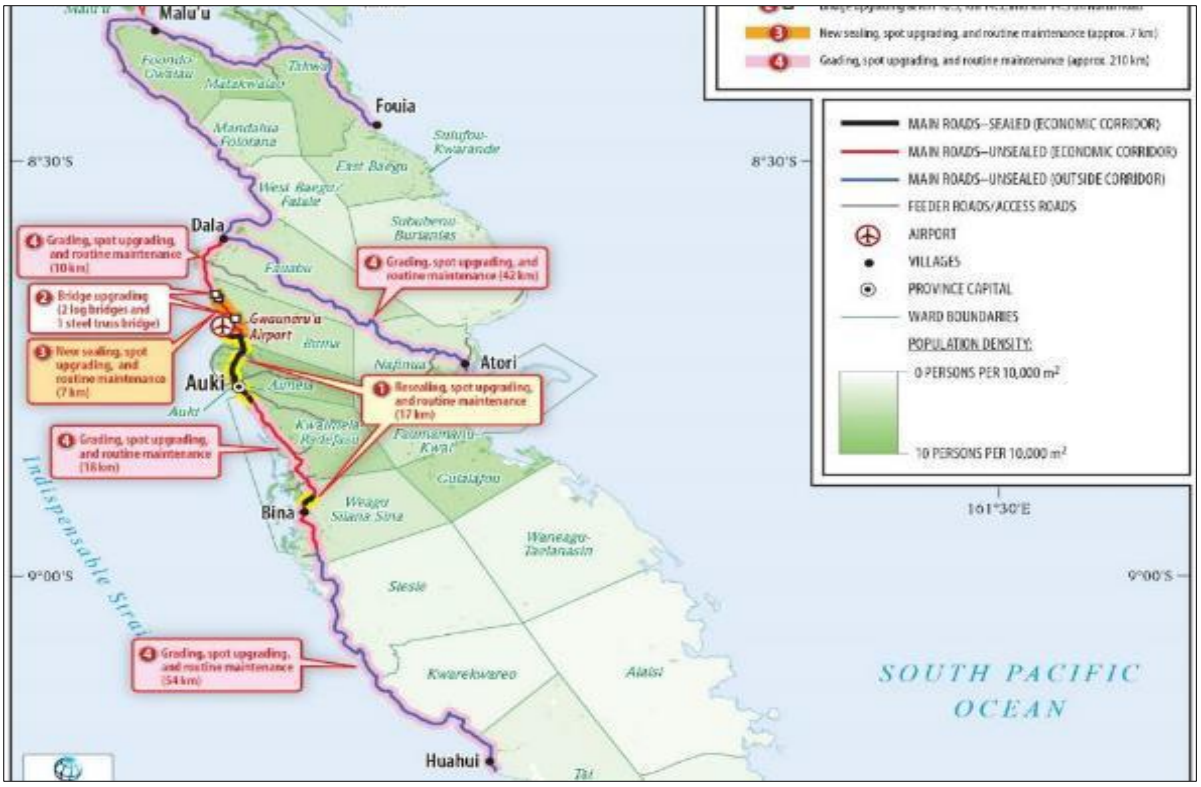


Figure 25: Population density of Malaita by wards. Adapted from World Bank Cartography Department, (Source: SIRAP ESMF)

4.5.2 Education and Health

Education is not compulsory in the Solomon Islands. In 2019, with respect to the population in Malaita aged 5-15 years, 83.6% were enrolled in school. From which 83% and 84.3% of the total males and females of the age group were enrolled in school. Thirty percent of the population aged 5-15 had already left school, and 17% had never been in school. Enrolment rates in Malaita are the lowest in all the provinces. Based on the 2019 census data on the highest level of education completed, 20% of the total population 12 years and over had completed secondary education (Form 3 to 7), 11% are males and 9% are females ; 12% and 11% of males and females completed only primary level, and 10% of males and 16% females had no schooling completed. Concerning tertiary education, 0.2% of males and 0.4% of females had completed tertiary education and 0.2% and 0.6% of males and females respectively had completed vocational training.[9]

The Ministry of Health and Medical Services is the key health provider in the Solomon Islands. Health services are concentrated in urban centres with a hierarchy of facilities available ranging from nurse aide posts and rural clinics to the National Referral Hospital. Of the nine provinces in the Solomon Islands, eight have a public hospital. The SI has approximately 22 doctors per 100,000 of the population but also has a strong base of nurse and midwives at 205 per 100,000. The SI does not have specific data on causes of death but has identified communicable diseases, including malaria and tuberculosis as important issues. Increasing prevalence of obesity due to lifestyle, diabetes, hypertension and tobacco and alcohol use has increased the rate of non-communicable diseases which will soon overtake communicable disease as the leading burden of disease.[10]

[9] Report on 2019 Population and Housing Census for Honiara, Ministry of Finance and Treasury

[10] https://www.pacificmedicalsa.org/single-post/2017/01/23/Healthcare-Overview-Solomon-Islands

4.5.3 Livelihoods and Economic Activity

Despite steadily growing since 2000, the Solomon Islands' per-capita GDP of USD$2,250[11] ranks it as a lesser developed nation, and more than 75% of its labour force is engaged in subsistence and fishing. Most manufactured goods and petroleum products must be imported. Until 1998, when world prices for tropical timber fell steeply, timber was Solomon Islands' main export product and, in recent years, Solomon Islands forests were dangerously overexploited. Other important cash crops and exports include copra and palm oil.

In Malaita, the labour force includes all persons employed and unemployed and consists of 62,214 people (31,698 males and 30,516 females). The employment population ratio 33.8%, and it was very low for the population 12-19 years. The employment to population ratio was the highest for people aged 25-54 (68.4%) and gradually decreases from then onwards. By occupation, 15% of the labour force is employed in government and private enterprises; 1% are employers and 13% are employed in voluntary work.

4.5.4 Land Tenure Rights

Most land (86%) in the Solomon Islands is still held under customary tenure, where every member of landholding entity, such as tribal, clan, or family is vested with the rights to use and access it. Non-owners usually have limited rights, such as the right to use, easement, or right of way. There is no system which allows for customary land to be surveyed and registered, and it is often very difficult for outsiders to identify land boundaries and to identify who 'owns' the customary land.

The Commissioner of Lands has the power to administer public lands and allocate interests to others. Once the land is registered, the estate title owner has indefeasibility, except for overriding public interests or when the High Court issues an order to set aside the registration because of fraud or mistake. Under the Land and Titles Act 2014, the Commissioner of Lands discretionary power can only be exercised subject to directions of the Land Board.

4.5.5 Gender Based Violence, Human Trafficking and Sexual Exploitation

GBV is defined as actions which result in "physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life." In the Solomon Islands, GBV has been largely normalized: 73% of men and 73% of women believe violence against women is justifiable, especially for infidelity and "disobedience," as when women do "not live up to the gender roles that society imposes." Local Non-government organisations (NGOs) continue to advocate and create awareness on GBV issues on Malaita and plan to work closely with the project to minimize GBV. The Project will conduct and prepare, through consultations, a service provider mapping to identify local NGOs, along with the Provincial Women's Council and other organisations located in Malaita who continue to advocate and create awareness on GBV issues in Malaita.[12]

Human (including child) trafficking, sexual exploitation and abuse are challenges and issues faced throughout the Solomon Islands on job sites and work camps. Human trafficking deals with a complex range of issues involving young girls and women who are forced into servitude and sexual exploitation for economic return. Much of the trafficking in the Solomon Islands appears to occur in and around logging camps and fishing vessels. The fishing vessels may be domestic or part of a foreign fleet.

[11] https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=SB

[12] Solomon Islands Roads and Aviation Project Environmental and Social Management Framework, Malaita Road Infrastructure Upgrades (February 2019)

The Solomon Islands has diverse patterns of trafficking – internal and transnational; organized and small-scale; and through sex, marriage and labour. Examples include:

- Trafficking of girls and women internally in the Solomon Islands for sexual exploitation, forced marriage or to work as domestic servants (Haus gele) – including in logging camps and on fishing vessels;
- Trafficking of Asian females for sexual exploitation;
- Trafficking of men into the Solomon Islands from other countries such as Asian countries to work in logging camps or fishing ships.

4.6 Projected Climate Change and Impacts

This section is informed by the Pacific-Australia Climate Change Science and Adaptation Planning Program (PACCSAPP) country report for the Solomon Islands.

Annual and seasonal mean temperatures at Honiara have increased since 1962 at a rate of 0.14°C per decade. There have also been increases in the number of warm nights and decreases in the number of cool nights. These temperature increases are consistent with the pattern of global warming. For all carbon emission scenarios, it is projected that temperature will increase in the future in the SI. By 2030, it is projected that the temperature will increase by 0.4°C to 1.0°C depending on the emission scenario.

There are no clear trends in rainfall over the Solomon Islands since the mid-1950s. Over this period there has been substantial variation in rainfall from year to year. Average annual and seasonal rainfall is projected to increase over the course of the 21st century. However, there is some uncertainty in the rainfall projections, and not all models show consistent results. Wet and dry years will still occur in response to natural variability with drought frequency expected to decrease slightly by the end of the century. Projections show that extreme rainfall days are likely to occur more often and be more intense.

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In the Solomon Islands region projections tend to show a decrease in the frequency of tropical cyclones by the late 21st century but a likely increase in the intensity of those storms.

The satellite data indicates that the sea level has risen near the SI by about 8mm per year since 1993. This is larger than the global average of 2.8-3.6mm per year. Sea level is expected to continue to rise and by 2030 is projected to rise between 8-18cm under all emission scenarios Table 8 and Figure 26**Error! Reference source not found.**. This sea-level rise combined with natural year-to-year changes, will increase the impact of storm surges and coastal flooding. Sea level rise projections for Solomon Islands is shown below and the values represent 90% of the range of the model results and are relative to the period from 1986 to 2005.

Table 8: Sea-level rise projections for the Solomon Islands

	2030 (cm)	2050 (cm)	2070 (cm)	2090 (cm)
Very low emissions scenario	8–18	14–31	19–45	24–60
Low emissions scenario	7–17	14–31	21–48	29–67
Medium emissions scenario	7–17	14–30	21–47	30–69
Very high emissions scenario	8–18	16–35	28–58	40–89

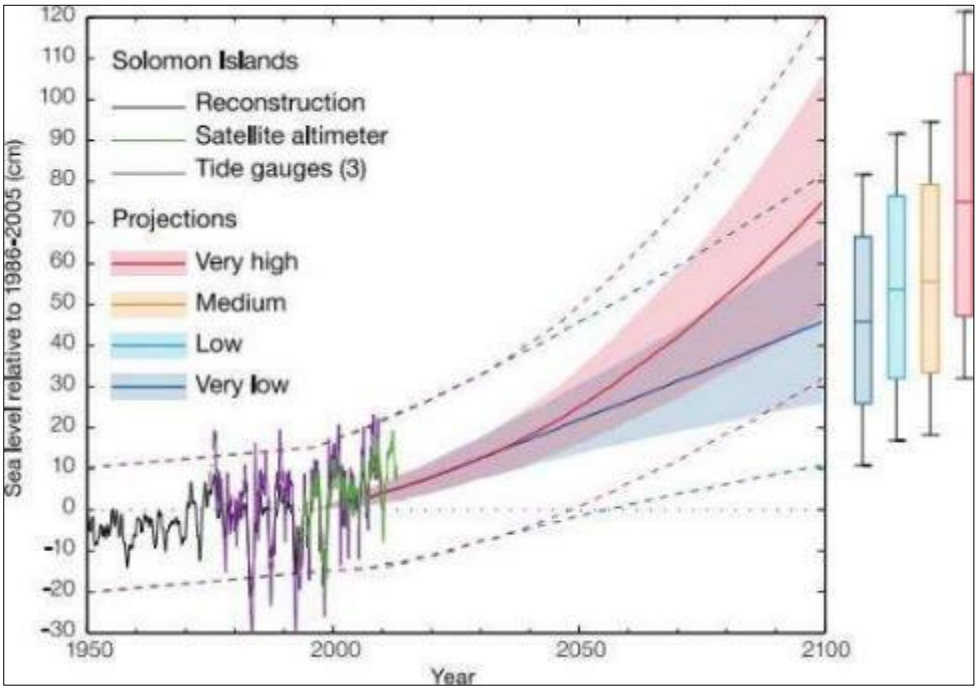


Figure 26: Observed and projected relative sea-level change near the Solomon Islands

The projected design life of the proposed works at Malaita are at least 100 years so the climate predictions for 2030 are applicable for SIRAP and should therefore be considered within the designs.

5 Consultation and Stakeholder Engagement

The SIRAP2 Stakeholder Engagement Plan (SEP) will be implemented for the bridge replacement works. Stakeholder engagement will be ongoing for the duration of the project.

Throughout the implementation of these works, ongoing and meaningful stakeholder engagement will be critical to the review of detailed designs, the selection of mitigation options for identified social and environmental impacts and the prioritisation of investments for funding and implementation scheduling. It is important that the affected communities – including women and vulnerable groups – are given the opportunity through consultations to be made aware of the proposed activities, and to comment and contribute to the project design. SIRAP2 PST will be responsible for ensuring meaningful consultations be carried out for all components of SIRAP2 through the life of the project.

5.1 Initial Consultations

5.1.1 Key Outcomes of SIRAP2 Consultations to Date

Community and stakeholder engagement and consultation has been ongoing since 2018 for the communities along the north road and the details of these consultations can be found in previous disclosed versions of the Malaita Roads ESMPs[13]. Communities along the South Road are now also being consulted during the preparation of SIRAP2 and the outcomes of these engagement are summarized.

The key findings during the Community Awareness include the following:

Malaita Provincial Government Courtesy Meeting – 25th August 2021

- Representing the Malaita Provincial Government (MPG) in the absence of the Hon. Premier were the Acting Premier of Malaita Province and Deputy Provincial Secretary appreciate the team courtesy to the Provincial Office.
- The Acting Premier welcomed the news on behalf of the provincial government, stating, that if materialised, will be a milestone for the province achieving its development aspirations for the future.

Public and Community Awareness – 26th August to 3rd September 2021

From all the communities (both South and North Road Sections) where the meetings were held, they shared the same sentiments. The following were the feedbacks:

- The updates on SIRAP were very clear and the second phase is what they have requested long time ago to the responsible government (Provincial and National).
- **All the communities** raised the same sentiment during the meetings that people are in need of good roads and other infrastructure like bridges and wharves. These are the basis of future developments, not only in Malaita but in the Solomon Islands. Better more if the roads are upgraded to sealing as proposed by World Bank under the SIRAP2 program. However, they asked the question on when will this good and long-lasting roads and bridges be built?
- The communities have express regrets to the news of disturbances and delays to the programmes under SIRAP phase 1. Recently, the roads and more bridges in Malaita have deteriorated to worst states. Present intervention by MID with the emergency contracts

[13] http://sirap.sb/index.php/documents

has rehabilitated the roads to better state that the public can enjoy comfort when travelling, reduced travelling time and less mechanical breakdown on vehicles.

- Communities also shared regret on how the Malaita Provincial Government responded to the Solomon Islands government political relation switch to China, for instance signing of the communique, preventing involvement of Chinese company in tendering for roads and bridges works contracts for Malaita Province. The China issue has adversely affected developments in the province, including timely assistance by the national government in road maintenance programs that caused the roads to deteriorate much lately.
- At the community level, they have no idea of what is going on with the Provincial and National politics. They only get informed of such important development, when officers arrived at their communities. The information shared on the various media cannot be trusted. They trusted the face-to-face information sharing is better, as they can ask questions, share their views and express their frustrations.
- The communities continued to express their appeal for quality work. From previous experience with national company contractor(s)s engaging on road works on unsealed and sealed road in Malaita, the quality of output was very poor. They prefer international contractor(s)s to do the work as they have the capacity and capability to deliver outstanding works. It is good news, that under SIRAP the resealing in Auki, and then now the extension of sealing to both ends (north and south).
- The communities also asked what is the probability that whatever they raised in such meetings will do to get the projects moving, since the Provincial government is the head. Whatever they raised in the meetings will be shared, but the provincial government will have the final say. The development cannot bypass province. However, the provincial and national government should try to resolve the differences, because the communities are the ones facing the realities and impacts of a deteriorated road and fallen bridges. The community people depend on the road and bridges to get their garden produce to the market, to take their sick patience and mothers to Kilufii hospital and other social welfare of the family.
- The communities were fully aware and understand that SIRAP is a World Bank funded project, and it is not from China. They have emphasised that, as long as the money does not come from Chinese Government directly.
- The communities also strongly agree that, since the World Bank has its policy not to discriminate anyone, and there are only 3 international contractor(s)s that are in country, and they wanted international contractor(s)s to do the work, then it does not matter who wins the contract. Any of the 3 international contractor(s)s is fine. All they need is a better road that can last for a long time. The China and Taiwanese switch should not be a hinderance to this very important development for the people. CHEC and CCECC is just a contractor(s) who is trying to operate and doing business as a contractor(s).
- Malaita is very lucky to have such projects. The provincial government should also consult with the communities that they could have an understanding on what is going on at the executive level.
- The communities have been informed of so many projects especially from the national government. The Bina Harbour, the Auluta Basin, Suava Bay Fisheries, roads and bridges network on Malaita, these are yet to start. The people have been consulted and met numerous times, not single meeting was held to let the people know on the status of the proposed projects, if these projects are still on. Such important information should be shared as well. The communities really appreciate the team for the information shared.

Such meetings should also be conducted for the other projects. To keep the people in the loop of the proposed activities.

- The communities also shared their appreciation to the World Bank for their continuous support for the province. The proposed sealing of the two sections is the major and very important to the people. They are looking forward to the project. Even the previous proposed projects do not eventuate, but the sealing must go ahead as proposed for Malaita. The communities will work together with their respective MPAs of their wards for this very important project. They are looking forward to more good news and meetings for SIRAP2.

The awareness and information meetings were successfully completed on 3rd September 2021. The communities continually stressed that they want a good road with safe bridges that will last, regardless of who the contractor(s). There is a strong appreciation to the World Bank for their continuous support especially for the very important proposal and the SIRAP2 works are highly anticipated.

5.2 Follow-up Consultations

5.2.1 Key outcomes of Malaita Bridges Consultations

Consultation and community awareness was again conducted on _August 29th to September 1st 2023 following the engagement of the detailed design consultant and preparation of draft detailed design for the bridges. The consultation team comprised of MID, PST and Egis – Azimuth representatives.
The consultations undertaken are for the construction of new bridges at Bila and Suú Harbor bridges along the south road and Kolofe 1 and 2 bridges along the north road. For the south road bridges consultations were undertaken at Bila, Alarua, Kwariekwa, Aibareo and Canan villages and Kolofe village for the north road bridges.

During the consultations the Design team was introduced and a presentation of the: scope of works, safeguards impacts, and bridge designs (relevant to each community) was presented to the communities. The team also enquired on relevant information for confirmation of the design studies relating to rainfall and flooding, socioeconomic characteristics of those that will be directly affected and community perspectives on the development.
Most concerns raised by community members during the consultations are similar and a summary of the proceedings are as follows:

- Bila Bridge Consultations:
  - Alarua Village
    - Communities shared their view on the proposed bridge and the challenges encountered by people at present especially impacts on women accessing market outlets, children accessing school and people accessing clinic.
    - The communities enquired if the project design has considered climatic events and climate change impacts in the area. Also, if the bridge can be designed to avoid damage from logs and also consider including guardrails for safety purposes.
    - Participants inform the team that the river is used by the community people for bathing and washing.
    - Communities informed the team that Bila river has never changed its course even after the 1986 cyclone Namu.

- Participants informed the team that upstream of the river can be used for a detour, but this detour must be within the 30m road corridor to not allow dispute over land outside the road corridor.
- Communities' elders informed the team that the contractor can use existing cleared areas previously used by logging companies for laydown and camp area.
- Communities asked if the contractor that will be awarded for the works can consider hiring casual workers from the area.
- Community member and owner of the 19 logs currently used at Suú Harbor Bridge can be returned to him after demolition.
- Participants enquired on the project timeframe and when construction will start.
- Communities' elders express gratitude to MID and the team for carrying out the awareness and consultations since the Bila bridge project had been heard many years ago.
- Communities' elders asked all community members to be supportive of the project and let it be implemented as planned since this was a long-standing issue for the people and it is for the benefit of the people in the area.

Figure 27: Consultations at Alarua

- Bila Village
  - Participants informed the team that the design presentation is clear and see the importance of constructing the bridge as it is providing access and service for the people. Also that the design presentation is clear and see the importance of constructing the bridge as it is providing access and service for the people.
  - Participants informed the team that Bila village usually floods during severe flush flooding and it could go as far as 100m from the river.
  - Participants informed the team that the easter bank of the river or bridge site has eroded severely over the past years.
  - Participants thank the team for undertaking the consultation and share important relevant information with the community. Also asked if the project

team and the contractor could carry out another awareness before the construction, and express full support to the project.

Figure 28: Bila Bridge consultation

- Suú Harbor Bridge
  - Kwariekwa Village
    - Participants are concerned about the safety of the community people especially women, children and old people therefore asked if there will be guard rails installed and allowance for people to walk across the bridge.
    - Participants also inform the team that the stream is called Aibareo, and flooding is not really an issue only higher coastal tides affects the road and the bridge.
    - Participants informed the team that in 1987 there was a tsunami which resulted in higher waves in the harbour as well as coastal erosion due to sea level rise is issue evidence of this can be seen along the road.
    - Participants enquired on the utilization of local materials during construction.
    - Community members asked about the project and construction timeframe and if there will be consideration for a bridge at Suú River since this is a very long-standing issue.
    - Community members are appreciative of the approach taken by the project and MID to inform communities about the development and is fully supportive of the project.

Figure 29: Kwariekwa Community Consultations

- Aibareo Village
  - Community members are concerned about the safety of the houses within close proximity to the bridge and if there will be compensation for market stall that will be removed.
  - Participants discuss issues relating to coastal flooding in the area particularly during high tides and bad weather events. Also if materials can be sourced from the local community and local labor can be recruited from the surrounding communities.
  - Participants enquired on the project timeframe and express concern on the current poor condition of the bridge that needs immediate attention.
  - Community express full support to the project and MID and appreciative for the information shared.
  - House owners close to the site were asked if they can move during construction, for safety purposes, during construction since their home is less than 20m from the site and had informed the team that they had other houses in the main village and moved to Aibareo to be close to services but they can move during the construction phase.

Figure 30: Aibareo Community Consultations

- Canan Village
  - Community elders confirmed that the name of the stream is Aibareo and informed the team that higher tides in the harbor resulted in coastal erosion and impacts on the bridge.
  - Community elders present express full support to the project and would like to see it implemented as this will benefit all community members. Also express appreciation and gratitude to the project and MID for carrying out the consultations and awareness in the communities so that people are well informed and gain first-hand information.

Figure 31: Consultations at Canan

- Kolofe Bridge

- Community members present asked if the project design team can consider increasing the height of the bridge to avoid damage from flooding and if the bridge can be relocated to the original site.
- Community members informed the team that the main usage of the stream and river is washing and bathing, but people can be advised to use upstream during construction.
- Community members thank the team for the awareness and for sharing the design of the proposed bridge with the community people. Also render full support to the project.

Figure 32: Kolofe Community Consultations

Minutes of the meetings are attached as Appendix D and further consultations will be done after the detailed designs and ESMP is approved and before the mobilisation of the contractor for this project.

6 Potential Environmental and Social Impacts

Initial environmental and social screening by the World Bank Safeguards Specialists of the ESF ESS and site visits carried out by the SIRAP PST have informed the preliminary identification of impacts based on the extent of works described in Section 2. During the detailed design, information on additional impacts have been identified and have been updated here accordingly.

6.1 Labour and Working Conditions

A Labour Management Procedure (LMP) has been prepared for SIRAP2 which identifes the risks to the workforce and 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.

6.1.1 Occupational Health and Safety

The primary hazards identified are:

i) working in live traffic areas
ii) construction works involving heavy machinery
iii) working in extreme ambient temperatures.

During past consultations for SIRAP works on the island, the community raised concerns regarding the spread of sexually transmitted diseases (particularly HIV) with incoming contractor(s)s and workers related to the project. A number of mitigation measures have been identified, including awareness training for foreign workers and employing local labourers.

Poor infection control and management practices could lead to an outbreak of Covid-19 within the workforce which could also spread to the community.

6.2 Resource Efficiency and Pollution Prevention

6.2.1 Solid Waste Generation

Bridge replacement works will lead to the generation of excess soil, metals, wood and other waste. Other types of solid waste such as general waste, non-recyclable inorganic waste, organic biodegradable waste and construction waste will be generated from other project activities. Impacts associated with solid waste can arise from on-site waste storage, transportation of waste and off-site disposal of waste.

Impacts associated with the storage and disposal of organic biodegradable waste include leachate from decomposing materials contaminating the surrounding soils and aquifers.

Transportation of solid waste in trucks without the correct equipment such as coverings or functioning tail gates can lead to waste spills on the haulage route. Spilled waste is a safety hazard to vehicle and pedestrian traffic as well as an environmental pollutant.

6.2.2 Water Resources

Freshwater will be required for workers and some construction activities. As there is an abundance of ground water and freshwater in Malaita, it is not expected that the impact on the water supply would be significant.

The Contractor(s)s are responsible for securing water access that is adequate and continuously supplied throughout the construction phase for workers and some construction activities. Water efficiency, conservation and reclamation practices will be adopted by the Contractor(s)s and other site personnel.

6.2.3 Hazardous Substances and 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.

Fuel and lubricants will be needed during construction activities. If not properly stored or handled, 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 (potentially for kerbs, signage footings, safety barriers, etc.) 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. Very limited amounts of concrete may be needed; therefore, this impact is considered to be minor.

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.

6.2.4 Erosion and Sediment Control

There is potential for works to create increased erosion and sedimentation of the river, and marine environments during the construction phase from any riverbank or coastal reinforcement works. Sediment has the potential to be generated during any vegetation clearance, excavations, stockpiles of aggregates and crushing of rocks at the laydown area.

During the period of construction of the bridge, there will be potentially an impact on the quality of the river temporarily due to a temporary increase in suspended sediments (SS) in the river downstream of the construction site. The issue with the SS will likely be more prevalent immediately downstream of the construction area but may gradually improve further downstream as the sediments settle onto the riverbed.

An Erosion and Sediment Control Plan (ESCP) will be prepared for the proposed works, and this will be the Contractor(s)'s responsibility for the design, installation, and maintenance of Erosion and Sediment Control for the temporary works of the project. The primary purpose of installing sediment and erosion controls is not to cause environmental harm nor deposit prescribed water contaminants in waterways. In addition, appropriate erosion control can have the benefit of decreasing soil degradation hence improving asset protection and decreasing maintenance costs during and post-construction.

An ESCP will be prepared for all areas prior to use or disturbance including auxiliary areas under the control of the contractor(s) such as stockpile and storage areas, access and haulage tracks, temporary waterway crossing, borrow areas, campsites areas and material processing areas. Clearing and grubbing (for the use of the area for stockpiles) for that section shall not start until the ESCP for that section is assessed as suitable by the Engineer.

6.2.5 Dust and Air Pollution

Air pollution is likely to arise from improper maintenance of equipment, dust generation along the main roads during materials hauling and construction of the approach roads of the bridges, at the quarries and at the crushing plant. Impacts are expected to be experienced along the length of the road works and could cause a significant nuisance and health hazard in traversed settlements and villages along the road routes but maybe more pronounced in settlements and communities adjacent to the approach roads.

It can be expected that once the bridge works are completed, traffic levels may increase and lead to an increase of dust generated at communities along unsealed maintained sections of the main roads.

6.2.6 Noise and Vibration

Emissions from SIRAP MLT bridges upgrade works would originate from noise caused by vehicular and equipment traffic, and operation of machines, dust from traffic or dirt on the roadside and crushing of rocks.

No on-going impact on air quality is expected to sustain during construction as this is a rehabilitation of existing infrastructure over a short construction duration. These impacts will be short-term and affect different people at different times but will be more significantly felt during the approach roads construction for the duration of the dry seasons.

Noise and vibration are likely to be ongoing issues throughout the construction stage and to a lesser degree the operational phase. As the roads represents existing infrastructure, any noise or vibration impacts are likely already being experienced by the local community. Effective communication of working hours will go towards alleviating any impacts during the construction phase.

6.2.7 Wastewater Discharges

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. Impacts may include sedimentation and an increase in nutrients impacting water quality and aquatic life in the adjacent waterways and coastal environments due to an accidental release of hazardous substances, refuse or other waste materials into the marine ecosystem. 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.

The significance of the impacts depends on the scale of the release, duration of earthworks, local worksite topography, soil type, rainfall levels, adequacy of primary sewage treatment facilities, and the sensitivity of the receiving water environment. It is vital to plan and carefully manage works adjacent to the marine environment. Furthermore, consideration should be given to works completed during the wet season (October to March). While the potential impacts of uncontrolled discharges of wastewater can adversely affect the receiving environment, they can be easily mitigated through planning and implementation of mitigation measures (as outlined throughout Section 7).

6.2.8 Local Quarry and Aggregate Supply

For any locally sourced aggregates, potential adverse impacts from uncontrolled quarrying or mining are high and include all of the above listed impacts, namely:

- Riverbank erosion from machinery access;
- Water quality – impacts of water quality from increased sedimentation and oil or fuel spill from machinery in the river;
- Air emissions – machinery and dust;
- Noise and vibration – machinery and blasting (if used);
- Water – consumption, hydrology (changes to site drainage patterns and groundwater), wastewater, and contamination;
- Waste – overburden, by-products and contaminated waste material;
- Land conversion – loss of habitat and agricultural land; and
- Dust is a major issue at quarry sites and can travel some distance and affect a large number of people if not properly managed.

It is not yet known how much aggregates will be needed for the proposed works or whether this aggregate will be sourced locally, nationally or internationally. Impacts of quarrying are not limited to the location of the quarry but can extend along the delivery route. Noise, dust, and traffic (vehicle and pedestrian) safety are primary concerns for the transport of materials from the quarry site for locally sourced aggregates and the offloading point for imported aggregates.

Additional risks with locally sourced aggregates from Malaita are the identification of the correct landowner(s). Consultations with the local government offices on Malaita indicated that many land leases are now being registered and that more and more landowners are in possession of title deeds for the land issued by the courts. Additional consultations with the locally based contractor(s)s confirmed that providing a mutually beneficial exchange of services takes place between the permit holder and the landowner, and sourcing of aggregates from quarries is frequently achieved for development aid-funded road maintenance projects. There are multiple quarries along the Malaita roads, so it is preferable that a quarry source local to the active works site is used to ensure that the community experiencing the works is also benefitting by having their resources used and services exchanged.[14]

Additional risks with sourcing local aggregate include the chance find of UXO in the riverbed. Section 7.1 outlines the procedure to follow in this instance.

UXO: Quarry and River extraction sites may contain unexploded ordnance (UXO). In the event of a discovery, the Contractor(s) must immediately stop work and clear the worksite of all personnel. The discovery must immediately be reported to the Supervision Engineer, MID and the Royal Solomon Islands Police Force (RSIPF). A UXO Response and Removal Plan are included in Appendix L of the SIRAP Malaita Road Infrastructure Upgrades ESMF (2019). No works shall recommence on-site until instruction has been received from the RSIPF and MID.

6.3 Community Health and Safety

6.3.1 Road Safety and Traffic Impacts

Construction works will result in higher traffic volume around sensitive social receptors and around the identified bridges. It will also result in increased pressure on pedestrians and vehicle owners altogether passing along bridges where there is no sufficient walkway or carriageway width and where traffic and pedestrians may compete for space.

[14] Solomon Islands Roads and Aviation Project Environmental and Social Management Framework, Malaita Road Infrastructure Upgrades (February 2019)

Waste spillage from Project vehicles or construction works onto the roads will result in pollution and constitute obstructions to vehicular traffic. The transport of raw materials will introduce a number of heavy trucks on the access road and this could increase the risk of motor accidents and result in vehicular-pedestrian conflicts. Physical works on the roads will cause disruption to the flow of traffic and create safety risks to pedestrians and vehicular traffic.

6.3.2 Hazardous Substances and Materials

There is a risk to the community from exposure to hazardous materials and substances that might be released from the construction activities such as air pollution due to emission from dust, vehicle exhausts and burning of wastes at the project sites.

Pollution prevention and management of these risks to communities will be managed under the requirements of the impacts identified above under 6.2 Resource Efficiency and Pollution Prevention and as stipulated in Section 7 of this ESMP.

6.3.3 Influx of Workers

It is not yet known whether there will be a need for a workers' camp to be established for the works. It shall be a decision that will have to be made by the Contractor(s). However, it is anticipated that there will be a need for additional qualified skilled workers that may not be sourced directly from the communities and to be brought to the project site for the completion of works, and for the establishment of the PMU and MID offices in Auki. It is possible that these workers are likely to be from both overseas, from other areas of the SI, and even elsewhere in Malaita. The Contractor(s) must therefore be sensitive to the potential impacts that this influx of outside labour can have on the local community and manage these impacts and interactions appropriately. Communities understand the potential need for additional labour to ensure the quality of road works. This being said, it is the will and hope of Malaita communities that Contractor(s) of SIRAP2 will first and foremost seek to employ local skilled and unskilled labour, prior to looking elsewhere outside of Malaita, and where applicable priority employment for direct-affected persons in the communities of the bridge projects.

While the influx of this labour can have positive effects (e.g., increased opportunity for capacity building and economic development), more often than not, labour influx results in or contribute to adverse social impacts. If not planned for and effectively managed, labour influx can impact on the following social areas:

Risk of social conflict: Conflicts may arise between the local community and the construction workers, which may be related to religious, cultural or ethnic differences, or based on competition for resources. Tensions mays also arise between different groups within the labour force, and pre-existing conflicts in the local community may be exacerbated.

Increased risk of illicit behaviours and crime: The influx of workers and service providers into communities may increase the rate of crimes and/or perception of insecurity by the local community. Such illicit behaviour or crime can include theft, physical assaults, substance abuse and locally brewed kwaso, prostitution and human trafficking. Local law enforcement may not be sufficiently equipped to deal with a temporary increase in the local population.

Impacts on community dynamics: Depending on the number of incoming workers and their engagement with the Malaita communities, the composition of the local communities, and with it, the community dynamics, may change significantly. Pre-existing social conflicts may intensify as a result of such changes.

Local inflation of prices: A significant increase in demand for goods and services due to labour influx may lead to local price hikes and/or crowding out of local residents. However, it will also contribute to consumption of local goods and services in the community, presenting opportunities for production of food and increased agricultural and fishing activity.

Sexual Exploitation and Abuse: Construction workers are anticipated to be predominantly younger males. Those who are away from their homes on construction jobs are typically separated from their families and acts outside of their normal social context. This can lead to inappropriate or illegal behaviour such as sexual harassment of women and girls, exploitative sexual relationships, and illicit sexual relations with minors from the local community. An influx of male labour may also lead to an increase in exploitative sexual relationships—particularly due to the often higher income levels of workers which enable them to purchase transactional sex, or makes them seen as good candidates for marriage.

Communicable Diseases: The influx of people may bring communicable diseases to the communities, including sexually transmitted diseases (STD) such as HIV/AIDS, or the incoming workers may be exposed to diseases to which they have low resistance. In terms of the vulnerability of the Malaita communities to external influences during the construction phase, these communities are considered medium to high risk due to the pre-existing culture on Malaita of the commodification of women and children and the low level of perceived vulnerability by this targeted group. Limiting the number of external workers to the project site will help to reduce this risk, and Appendix B provides for mitigation measures against these potential construction phase impacts.

6.3.4 Human Trafficking

There exists a documented and significant problem on Malaita with domestic trafficking of local children and local and foreign women for the sex trade focused around the international logging camps and international fishing vessels. Surveys undertaken by Save the Children on Malaita identified that while the industry is not highly organized on Malaita, it is still present and includes foreign nationals, logging and fishing workers and boys and girls. The 2015 USA Department of State's Trafficking in Persons Report acknowledges that within the Solomon Islands 'local children are subjected to prostitution, sometimes in exchange for money or fish, particularly near foreign logging camps, on foreign and local commercial fishing vessels, and at hotels and entertainment establishments. Some parents sell their children to foreign workers at logging and mining companies for marriage; some of these girls are later forced into domestic servitude and prostitution. Local boys and girls are put up for "informal adoption" by their families in order to pay off debts; some are subsequently subjected to sexual servitude by the adopted family or guardians or forced labour as domestic servants'. [15]

The Save The Children report and others highlighted that human trafficking was mainly young women and girls deceived into thinking they were going for domestic work and ending up in forced marriage/sexual slavery. The underlying factors included the income difference between foreign workers in the logging industry and other local populations combined with a supply of girls from other islands within SI and a network of traffickers able to transport the girls to the logging site.

The Trafficking in Persons Report survey was undertaken in four provinces (Guadalcanal, Western Province, Makira and Malaita) of the Solomon Islands between 2012-2013 in conjunction with local health care workers and civil society organizations. 77% of survey respondents indicated that they

[15] Solomon Islands Roads and Aviation Project Environmental and Social Management Framework, Malaita Road Infrastructure Upgrades (February 2019)

knew personally of at least one case of trafficking (forced labour, forced marriage (for money), forced commercial sex or a child who has been paid for sex). Forced commercial marriage and forced commercial sex were the most common forms of trafficking identified. Survey results worryingly revealed that on Malaita, there is a lower rate of perceived vulnerability among women to trafficking. In Malaita, one third of people believe that forced commercial marriage is part of their cultural heritage. This is likely due to the fact that the Malaita's cultural practice of bride price is uniquely prevalent and robust.[16]

In the context of the proposed bridges upgrade works, the risk arises due to the use of local hotels by the expatriate workforce. It is anticipated that the risk posted during the construction phase of the works is low, however, this will be updated in the CESMP produced by the contractor.

Additional risks for the Malaita project are, that while there is not expected to be significant labour influx, there may be a cash influx. As this will be injected into the current situation of supply of girls for trafficking and a functioning network of traffickers as well as minimal capacity to combat this, then the project would likely increase the risks of girls being trafficked.

6.3.5 HIV/AIDS, Gender-Based Violence, and Child Abuse and Exploitation

There are impacts associated with personnel recruited from outside the local community, such as increased instances of HIV/AIDS. Additionally, the Contractor(s) must accept that gender-based violence might occur as an unintended consequence of economic development. As such, it is the Contractor(s) responsibility for implementing actions to help reduce instances of HIV/AIDS, GBV and Child Abuse and Exploitation (CAE).

All employees (including managers) will be required to attend training prior to commencing work to reinforce the understanding of HIV/AIDS, GBV and CAE. Subsequently, employees must attend a mandatory training course at least once a month for the duration of mobilization.

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, GBV and CAE throughout the lifetime of the civil works, including monitoring and reporting.

The Supervision Engineer shall provide to the Contractor(s) a list of approved service providers which shall include recognized NGOs and others for conducting training on GBV. From the provided list, the Contractor(s) shall enter into an agreement with one service provider to undertake the GBV IEC campaign. The cost of the campaign shall be funded by the Contractor(s). The contractor(s) shall make staff available for a total of at least 0.5 days per month for formal training, including GBV.

6.3.6 Business Impacts

During the construction phase there is the potential for minor impacts on businesses along the roads. These impacts would be limited to noise, dust and traffic from construction activities and will be of limited duration. Standard good practice construction management will mitigate these potential impacts to an acceptable level. All potentially affected businesses will be included in the consultation process.

[16] Solomon Islands Roads and Aviation Project Environmental and Social Management Framework, Malaita Road Infrastructure Upgrades (February 2019)

6.3.7 Emergency Preparedness and Response

There is a risk from natural and man-made hazards during the works (e.g. floods, fire, leaks or spills) due to failure to implement operating procedures that are designed to prevent their occurrence. The Contractor(s) is required to develop a response plan which will ensure that measures for restoration and cleanup of the environment following any major accident will occur.

6.4 Biodiversity and Natural Resources

6.4.1 Biosecurity

It is probable that equipment and materials for the bridge projects and other works will need to be imported to the SI. If imported consignments are not properly treated and/or washed before shipping, there is the risk of introducing non-native and potentially invasive plants, animals and disease. The introduction of harmful species to small island nations such as the SI, who have a high level of endemic species can be devastating to the local ecosystems' flora and fauna. It is also possible to import diseases such as foot and mouth disease which would have devastating impacts on local livestock.

Giant African Snails (GAS; *Achtatina fulica*) are causing significant damage to food crops on Honiara and have started to spread to some of the other islands. Sourcing local aggregates from quarry or extraction sites on Honiara which are already infested with this invasive species risks spreading the problem to other parts of Honiara as well as to new sites on Malaita.

6.4.2 Coastal and Marine Impacts

The bridge upgrade works will rehabilitate and upgrade the existing infrastructure. Habitat loss or disturbance if any, will be related to the construction phase only. There is the possibility that in the process of construction works especially detour road constructions, fauna (e.g. nesting birds) could be impacted.

During construction, noise and vibration may impact on fauna but will be limited to those species that can't move away from the disturbance. Given the works will be temporary, there are not likely to be any endangered or rare species, and most species will be able to move away from the source of the disturbance. It is not considered that there will be significant adverse impacts on fauna. Mitigation measures will include liaison with the Department of Environment should any fauna (reptile, avian, or mammal) are encountered that affect construction activities for the bridges upgrade works.

Project activities have the potential to have a negative impact on the receiving marine environment, including uncontrolled discharges (e.g. stormwater, erosion, wastewater, spills). Potential sediment and contaminant laden run-off issues could result from poorly managed land clearance sites and the improper siting of stockpiles in laydown areas. During heavy rainfall events this could wash into the adjacent marine environment and could result in water and habitat contamination, increased water turbidity, and the sedimentation of sensitive ecosystems (e.g. coral reefs or seagrass). The coastal area adjacent to the identified bridges are outside any Marine Protected Areas and therefore impacts are expected to be minor. Readily managed protective measures such as minimum distances between laydown and stockpile sites, measures to trap and/or divert run-off away from marine environment, bunding of stockpile sites and storage areas for hazardous substances (fuel, oil, etc.) can be immediately adopted and implemented.

It is expected that the impact of the bridge works to the marine environment can be avoided with effective implementation of the measures stipulated in this ESMP. It will be critical for the Supervision Engineer and Contractor(s) to ensure they are adequately resourced with national and international safeguard specialists to monitor safeguard compliance.

6.5 Land Use

Land is an important factor and can be complex in the Solomon Islands and negative impacts may arise from the use of existing government land, the leasing of private lands for temporary use or the use of quarries where land ownership may have disputes or legacy issues. All bridges will be at the current location and both road sections have been gazetted. Land will be required during the construction phase for detour roads, construction camps/laydown areas stockpile sites as well as potentially workers' camps among others. It is not yet known where these sites will be located or co-located and whether existing government land or private land will be used. The use of the land will be temporary and for a short period of time. The MID process will be used to access the temporary land use through the use of the MOU with the rightful and true owners of the interested land. This will be facilitated by MID/CPIU Safeguards Unit with the support from SIRAP PST.

There will also be a need to source aggregates for the bridge approach roads and the source or ownership status of those resources are not yet known.

7 Environmental and Social Management Plan

This section contains the detailed mitigation measures that are required for the various phases of the bridge works to the extent that they are described in Section 2 of this ESMP.

Also included in Section 7.2 are expected processes for other safeguard management measures and referred to in the mitigation table in Section 7.1.

7.1 Mitigation Tables

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
DETAILED DESIGN/ PRE-CONSTRUCTION MOBILISATION STAGE					
Bridge and approach road alignment considerations	Alignment decisions based on minimal impacts to terrestrial and aquatic flora and fauna, and land acquisition.	All bridge locations in Kolofe 1 and 2; and Su'u and Bira Bridges		Design Consultant	SIRAP2 PST/MID
Land acquisition and involuntary resettlement – temporary use and permanent	Update the preliminary resettlement plan earlier prepared by SIRAP PST; permanent land acquisition shall be limited to government-owned or state lands (existing right-of-way); conduct inventory of loss of affected land (other than state-owned lands), and assets Contractor(s) will negotiate with the concerned local communities/landowners for compensation of temporary land acquisition for bypass road, campsite, layover areas and all other contractor(s) requirements not requiring permanent land acquisition based on opportunity loss and time of temporary land occupation. Restore or improve physical condition of the affected site prior to demobilization.	All bridge locations in Kolofe 1 and 2; and Su'u and Bira Bridges; and locations related to the works	SDB _____ as per the updated Resettlement Plan Incorporated under the Contractor(s)' contract.	Design Consultant Contractor(s) Contractor(s)	SIRAP2 PST/MID SIRAP2 PST/MID/Supervision Engineer SIRAP2 PST/MID/Supervision Engineer
Preparation, submission and approval of CESMP and associated Subplans: Occupational Safety and Health Management Plan; Site Security Management Plan; Traffic Management Plan; Quarry Management Plan; Biosecurity Management Plan; HIV/AIDS/STI Awareness Plan	Contractor(s) will be required to prepare and submit a CESMP together with the required associated subplans for review and approval by SIRAP PST based on its detailed construction methodologies, work program, management of construction activities and manpower requirements. Contractor(s) commences work only after CESMP approval by Engineer and SIRAP PST.	SIRAP PST	Bidding document requirement	Contractor(s)	SIRAP2 PST/MID/Supervision Engineer

[17] Costs are estimates only and will be calculated during the detailed engineering design.

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
Permit applications and agreements for associated activities such as but not limited to quarry areas, borrow pits, and construction waste and camp waste disposal areas.	Permits and licenses shall be acquired from relevant authorities in advance and submit to the Engineer and SIRAP PST before commencement of works. The Contractor(s) shall identify, negotiate and conclude agreements with landowners for disposal sites of construction wastes, and campsite wastes. Also refer to approval requirements under this plan matrix.	All location related to the works.	Include in the Contractor(s)' contract.	Contractor(s)	SIRAP2 PST/MID/ Supervision Engineer
Mobilization of Contractor(s) workforce (also refer to the Management of Workers below)	Maximize employment from the local community most especially the project affected persons for both skilled and unskilled labor; where there is need to employ skilled labor outside from the communities, these shall be provided with awareness training. Contractor(s) shall ensure off-site hired labor observe village customs and traditions at all times. Contractor(s) shall assign a staff from their organization(s) to continuously engage with the local village leaders for good community relations and address local grievances immediately. Contractor(s) shall provide adequate housing at campsite(s) to be established provided with clean eating and cooking areas. Contractor(s) shall be responsible for ensuring that their workers shall not be engaged in poaching of wildlife for trading and food. This shall be emphasized during awareness/induction training that such act is prohibited, and sanctions shall be imposed for non-compliance including termination from employment. Contractor(s)' workers shall be prohibited from entering forested areas to hunt for food. Each of the Contractor(s)s' workers shall be provided with awareness training on HIV/AIDS/STI; Contractor(s) shall establish a Code of Conduct outlining the importance of appropriate behaviour, drug and alcohol abuse, and respect for local communities including compliance with relevant laws and regulations and	All location related to the works.	Include in the CESMP and Subplans forming part of the Contractor(s)' contract.	Contractor(s)	SIRAP2 PST/MID/ Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	local customs and traditions. Each member of the Contractor(s)s' work must sign this Code of Conduct as a compliance requirement.				
Road traffic safety	Road safety audit conducted before design process commences to inform designers, and then of design prior to tendering. The bid documents will require a project-specific, and site-specific Traffic Management Plan (TMP) to be developed by Contractor(s). For each haul route, the TMP will need to include measures to address: Layout plans; Vehicle traffic; Pedestrian traffic (particularly on bridges that construction traffic will use); Commercial marine traffic; Sensitive receptors (management near and consultation with) such as schools, residential dwellings, markets, churches, etc.); Management of increased heavy load traffic associated with transportation from Honiara port to t the bridge work sites. The TMP will also cover for temporary road disruption during road construction including temporary accessways. The TMP should follow the guidelines set in the Safe Traffic Controls for Road Works Field Guide (w*ww.works.gov.pg/files/roads-bridges/IF003_PNGFieldGuide.pdf*) and adapted for the works. The TMP will be included as an annex to the CESMP. The TMP shall include the name, address, and telephone number of the person responsible for the safekeeping of the works, or any change thereto, shall also be notified. 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 individual landowners and property managers	All location related to the works All haulage routes and along project affected roads	Minimal (requirement of bidding documents)	Contractor(s)	SIRAP2 PST/MID/ Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	along the route leading to the bridge work sites (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. Contractor(s) is required to have a speed monitoring system in place to allow all vehicles to be monitored for adherence to speed of travel and only using approved haul routes within Honiara to the port prior to crossing to Auki and henceforth to the bridge worksites in Kolofe 1 , Kolofe 2, and Su'u and Bila. Road works will also include the design and installation of traffic safety signage along the road network, particularly targeting busy pedestrian areas.				
Road, drainage and safety design	Technical/engineering road design will include solutions to mitigate risks of natural disasters such as integrated flood control and climate resilience. Design will ensure that no storm water drainage flows into coastal areas identified in Section 6.4.2.	Entire length of target roads	Minimal (part of standard design practice)	Contractor(s)	Supervision Engineer
Health and Safety	The Contractor(s) shall: • Prepare OHS Management Plan as part of CESMP; • Conduct Induction training for Contractor(s) personnel; • Sign Code of Conduct (if instructed) for Contractor(s), Managers and other personnel; and • Implement relevant pre-construction measures prescribed in the OHS Plan. The OHS Management Plan shall comply with all requirements of Section 7.2.2 of this ESMP and with the SIRAP2 Labour Management Procedure. The Contractor(s) shall provide a monthly report to the Engineer outlining compliance, achievements and training including the number of lost time incidents; the number of near-miss reports; first aid training; completed HIV/AIDS and GBV training; and OHSS training courses completed by staff.	All Location related to the resealing work	Minimal (requirement of bidding documents and standard construction practices).	Contractor(s)	SIRAP2 PST

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	OHS Plan will include Covid-19 infection prevention measures as well as procedures for responding to instances of infection within the workforce. These will be in line with the latest guidance from WHO and SIG regulations. Utility clearances will be undertaken by the Contractor(s), Solomon Power and Telekom prior to work commencing and a representative from Solomon Power will be on site during works (where applicable on the worksites).				
Approvals	• Prepare and submit the Development Consent Application with relevant supporting documentation (EIA, ESMP, Consultation Report) to ECD; • Prepare application for emission permits from ECD • Prepare and submit Application for material sources (including quarry, gravel pits, sand sources etc.) – Quarry Development and Operations, Gravel Extraction, Earthworks to MMERE; • Prepare and submit Contractor(s) ESMP.	All Locations	Minimal (part of standard design practices).	Design Consultants (all contracts)	SIRAP2 PST/ MID
Gender Based Violence (GBV) and Violence Against Children (VAC)	• Establish a GBV and VAC Compliance Team. Refer to Appendix E for guidance; • Prepare GBV and VAC Plans and seek Bank approval prior to project mobilization. Refer to Appendix B. • Sign Codes of Conduct (if instructed) for Contractor(s), Managers and other personnel. Refer to Appendix B for draft Codes of Conduct; and • Respond to GBV and VAC events as a matter of priority.	All Locations	Minimal (requirement of bidding documents and standard construction practices).	Design Consultants (all contracts) Contractor(s)	SIRAP2 PST
Consultations	• Develop a consultation and communication plan which implements the Contractor(s) responsibilities in the SRIAP 2 Stakeholder Engagement Plan • Implement required pre-construction consultation in accordance with the approved CESMP Consultation and Communication Plan. • Ensure affected businesses are included in the consultations	All Locations	Minimal (requirement of bidding documents and standard construction practices).	Design Consultants Contractor(s)	SIRAP2 PST
Loss of Access to Assets and Land	For any privately owned areas of road reserve which may be temporarily needed during the construction phase of the project and which are subject to encroachment from the surrounding communities, consultations will be undertaken with the asset owner to facilitate any temporary relocation of the	Ancillary Sites	Part of project and contract costs	Contractor(s) CLO and Design Consultant and PST CLO	PST NSS and PM

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	asset (e.g. market stall) for the duration of those works. The SIRAP2 RPF provides the requirements for these arrangements. Contractor(s) shall enter into a lease agreement with the legitimate landowner(s) for the temporary use of the land. Rights to extract aggregates from quarries will be established following negotiations with the resource owner as detailed in Section 7.2.1.				
Laydown and Stockpile Sites	Short term rental of land for lay down or stockpile sites will follow the process in 7.2.1 and the SIRAP2 RPF. Sites must be located at least 300m from nearest residences, 150m from waterways and coastal sections identified in Section 6.4.2. No stockpiles or laydown site can be located within the section of Key Biodiversity Area at the south of the target roads. All sites must be securely fenced to prevent unauthorised access. Additional fencing may be required around specific stores (e.g. hazardous substances) to prevent access by unauthorised personnel. Secure, well-constructed areas within the compound must be clearly marked for solid waste collection, machinery maintenance, hazardous substance storage and toilet facilities for workers. The laydown site(s) will include hard stand areas which have protection from wind and (where appropriate) rain, bunding (hazardous substances), clean water diversion drains, and allow for complete containment, collection and treatment of wastewater from concrete production and 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.	Ancillary Sites	Part of contract costs	Contractor(s)	Supervision Engineer
Management of Workers	• The contractor(s) will be required to produce a Workers Management Plan (WoMP), and Influx Labour Management Procedure for the road	All project sites	Part of standard contract costs	Contractor(s)	Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	works to describe recruitment strategy, worker accommodations, accommodation facilities and management of off duty workers. Workers Management Plan will follow the requirements of this ESMP, the SIRAP2 LMP and the IFC Workers Accommodation Standards and Guidelines. Workers Management Plan will be required as part of the bid submission and will be further developed and included as an Annex in the CESMP for clearance by the Supervision Engineer. • The WoMP will include cultural protocols (including appropriate clothing and no work on a Sunday or Saturday for LDS Church members), management and restricting of visitors to the camp, visitor curfews, expected behaviours (noise, alcohol, within community areas), gift giving and receiving, disciplinary actions, etc.) • SIRAP2 has a Code of Conduct and Action Plan for the Prevention of GBV, HT and SEA (Appendix B). All Project workers will be required to undertake GBV and SAE prevention training under this action plan and sign the associated Code of Conduct prior to commencement of works. The SIRAP2 PST will provide the Contractor(s) with details of approved service providers who are able to undertake this training. From the provided list, the Contractor(s) shall enter into an agreement with one service provider to undertake the GBV IEC campaign. The cost of the campaign shall be funded by the Contractor(s) from the provisional sum provided in the bill-of-quantity. The contractor(s) shall make staff available for a total of at least 0.5 days per month for formal training, including GBV. • All workers are required to undertake training on the prevention of HIV/AIDS in addition to the GBV related training. The SIRAP2 PST will provide the Contractor(s) with details of approved service providers who are able to undertake this training. The cost of the campaign shall be funded by the Contractor(s) from the provisional sum provided in the bill-of-quantity. • The Contractor(s) is required to maximise the number of local workers from the nearby communities. The Western Provincial Government will endeavour to provide a list of local workers and skills for the contractor(s), prior to mobilizing. Preference should be given to a local				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	recruitment process, only relying on workers from other islands or from overseas for vacancies which cannot be filled locally. • As part of the WoMP, the Contractor(s) will be required to submit a list of roles along with required qualifications or experience and the planned recruitment strategy for that role (i.e. local or regional/overseas). The Contractor(s) will be required to provide justification for any roles not filled locally. Work permits will only be granted for workers with skills unavailable in the SI. Should international workers be found to be performing jobs that can be done by locals (e.g. driving vehicles), the Supervision Engineer will notify the contractor(s) and the SIG who will cancel the work permits. The contractor(s) will be required to return them home within 48h of notification by the Supervision Engineer. • For recruitment of SI nationals which cannot be fulfilled by the local community, it is preferred that it is undertaken through a formal recruitment process which ensures that only people who are already employed are travelling to the project site. Ad hoc employment of casual labour is not permitted. • Any project staff who are recruited from overseas are subject to visa approval. As part of the visa application process, all workers are required to submit a medical report, an element of which is a HIV test. All overseas workers must complete this test and submit their medical report to the immigration department before appropriate visas can be issued. As part of the visa application process, all overseas workers will also be required to provide a police background check from their home country. It is also a contractual requirement for all overseas SIRAP2 project works to provide SIRAP2 PST with police background clearances prior to arrival in- country, regardless of the visa application process. • In addition to the Codes of Conduct for GBV/Human Trafficking/SAE, the Contractor(s) will also prepare a Code of Conduct to describe the expected behaviours of their project worker in relation to the local communities and their social sensitivities. • The Contractor(s) will provide workers with awareness training/induction on the grievance redress mechanism (GRM) as per the requirements in the LMP.				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
Storm Water Management	Design shall ensure that all storm water is captured within the drainage systems and contained within the existing drainage channels. No new outflows onto private/communally owned lands will be permitted.	Roadside drainage	Minimal (part of standard design practices)	Design Consultants	SIRAP2 PST
Soil erosion	All erosion and sediment controls will be the Contractor(s)s' responsibility to maintain an effective working order, including reconfiguring drainage lines as required during the construction process to ensure dirty water is directed into sediment controls at all times. Reuse of the water collected in sediment ponds or basins for dust suppression and roadworks is preferred over release into the environment. Where water is being stored for dust suppression, the required design capacity of the basins shall be made available. Sediment basins/siltation ponds and other sediment controls shall be operated and maintained in a manner that minimises the risk of environmental harm. The design capacity of the upper settling volume shall be made available within 120 hours of the most recent rainfall event which causes runoff. The sediment storage zone shall be maintained at all times with the accumulated sediment removed in a manner that does not allow the sediment to be conveyed into a watercourse or offsite. Where coagulants or flocculants are used to treat stormwater, they must not cause harm to the receiving waters or environment. Excavations should be kept to a manageable size to reduce the time of exposure. Any stockpiles will need to be on an impermeable geotextile or hardstand and runoff directed to permeable land. Stockpiles of any fine grain materials (e.g. sand and topsoil) must be covered to prevent dust and sediment laden runoff during rain events. Discharges from any activity at this location are prohibited from discharging directly to the marine and coastal environment with particular attention to the sections identified in Section 6.4.2. Clean runoff should be diverted inland for percolation to underlying groundwater, and potentially contaminated runoff should be collected and treated. Treatment will be dependent on the type of potential contamination (e.g. oil water separator for runoff	All project locations	Minimal (part of standard design practices)	Design Consultants Contractor(s)	SIRAP2 PST

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	contaminated with hydrocarbons or settling pond or tank for sediment laden runoff). The work shall: ▪ 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 a 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.				
Dust /Odour Air Pollution	Dust/Odour/Air pollution may occur through the transportation of construction materials during the pre-construction/construction phase. These can be minimised through: • Identify and locate construction and solid waste disposal sites, stockpile sites and equipment (e.g. concrete plant) at least 300 m away from any residential settlements, and 150m from water bodies, streams or rivers, to minimize impacts on the environment and nearby population. • Within the concrete batching plant (if necessary and required), the dust/odours can be minimised through using water sprinklers in the crushing plant. • Minimise dust from open area sources, including stockpiles, by using control measures such as using enclosures of covers and increasing moisture content. • The CESMP should include a provision for quarry dust control; all equipment including crushers, aggregate processors, generators etc. should / if possible, be located in the quarry pit to minimize dust emissions. • Ensure all equipment is serviced and issued with warrant of fitness (as required). Any machinery deemed to be polluting the air must	All components	Minimal standard practices (part of the design	Contractor(s)	Supervision Engineer / PST NSS

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	be replaced (or fixed) on instruction by the Supervision Engineer and/or the ECD. • During transportation, the trucks need to have covers to minimise dust and dust suppression techniques will be implemented, such as applying water to minimise dust from vehicles movements.				
Water and soil pollution	Soakage pits should not be installed directly into a shallow aquifer. Minimise risk to groundwater and surrounding soil by developing a Spill Prevention and Emergency Response Plan (SRP) and provide training to all contract workers on how to implement the 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 SRP should include factors associated with both the construction and operational phases and should be available at all SIRAP2 locations. No stockpiles within 100m of any surface water bodies or within 150m of the coastal areas identified in Section 6.4.2 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 the commencement of works. Contractor(s) to undertake groundwater monitoring prior to any campsite establishment or construction laydown areas to determine baseline conditions. Measure depth to groundwater and analyse 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 Solomon Islands Water Authority (SIWA).	All components	Minimal (part of standard design and construction practices)	Contractor(s)	SIRAP2 PST & Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	Sanitation treatment system (e.g. removal of waste to landfill, compost or proprietary treatment system) is approved by the Supervision Engineer prior to implementation. It is the contractor(s) responsibility that relevant Water permits are in place. No runoff from laydown sites, construction works or other project activities will enter any waterway. The Contractor(s) will need to ensure an adequate supply of water for construction and personnel which does not adversely affect the local community's water supply.				
Water supply	Contractor(s) should include maximum rainwater collection and water conservation/ efficiency in all its work components. The Contractor(s) will need to ensure adequate supply of water for construction and personnel which does not adversely affect local community's water supply.	All components	Minimal (part of standard design practices)	Contractor(s)	Supervision Engineer & SIWA
Sourcing aggregate materials	MID have provided a list of available quarries on Malaita. Ensure locally sourced aggregate is sourced under appropriate permit from approved quarry sources and are operating in accordance with SIG law. Prior to any quarries being selected for the SIRAP2 project, public consultation will be completed with any affected parties relating to re-opened quarry sites. Consultations will also be completed with the correct landowners to secure access to site and resource extraction. Consultations and negotiations will be done under the direction of the SIRAP CLO. If the Contractor(s) applies for their own Building Materials License, they will be required to follow national consenting requirements and to produce a Quarry Management Plan as per the requirements of SIRAP ESMF & ESMP and included as an annex in the CESMP for clearance. The following conditions apply to site selection for new river extraction sites: i. All sites will be subject to approval and permitting under both the Mines and Minerals Act (Building Materials Permit) and the Environment Act (Development Consent);	All components	Minimal (part of standard design and construction practices)	Contractor(s)	Supervision Engineer, SIRAP2 CLO, SIRAP2 National Safeguards Specialist & ECD

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	ii. Limits to volume of material extracted from any one source will be set in light of the ability of the source to regenerate and likely environmental impact as a result of the extraction. As with any extraction, there are limits after which localized or more extensive environmental impacts may occur. This might be due to facilitation of erosion or sedimentation which could alter the immediate environment or impact directly upon flora and fauna; iii. Access to gravel extraction sites will be negotiated with land owners and users, in the event that an access is purpose built, should the owner not want to keep the access, the contractor(s) will be responsible for reinstating the land to its pre-project condition; iv. Any rivers or streams will not be permitted to be used as sources of gravel if identified as being a natural habitat[18] under OP4.04 Natural Habitats or forming part of a protected area (including the buffer zone of a protected area); a proposed protected area; or having conservation value, being habitat for rare or endangered aquatic species or birds;, comprising part of the intertidal zone;, comprising swamp or wetland, or including mangroves; v. Any rivers or streams that are used as a fresh water source for villages should not be used as a materials source as gravel extraction will cause increased sedimentation and turbidity. In cases where such rivers or streams must be used, alternative water sources, such as drilled or dug wells, upstream of extraction sites and works, must be provided for the villages; vi. Use of approved machinery for gravel extraction from rivers such as excavator or backhoe. Dredging or similar operations for the quarrying of construction material will not be permitted; vii. A number of sites for extraction are preferred over a large volume being taken from one location;				

[18] Natural habitats are land and water areas where (i) the ecosystems' bio-logical communities are formed largely by native plant and animal species, and (ii) human activity has not essentially modified the area's primary ecological functions.

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	viii. In respect of maximum volumes to be removed from any one source, any river gravel removal for the subproject will be managed in accordance with the aggregate extraction guidelines and conditions of approval for the extraction plan; ix. Gravel or material should not be extracted from river bends, and if required, river training be undertaken; x. Any extraction sites and borrow areas close to roads will be located at least 15 m outside the right-of-way of roads, extraction from the sides of roads in a way that could undermine the roads will not be permitted; xi. Any extraction sites within rivers will have a 200m buffer zone between the site and the coastline. xii. Site and pit restoration will follow the completion of works in full compliance with all applicable standards and specifications; xiii. Any topsoil excavated from the top of sites and borrow pit areas will be saved and reused in re-vegetating the sites and pits to the satisfaction of the National Safeguard Specialist; xiv. Additional extraction sites and/or borrow pits will not be opened without the restoration of those areas no longer in use; and xv. The excavation and restoration of sites and borrow areas, as well as their immediate surroundings, will be undertaken in an environmentally sound manner to the satisfaction of the National Safeguard Specialist. Sign-off to this effect by PST will be required before final acceptance and payment under the terms of the contract. For quarries on Malaita, the Contractor(s) will recruit a CLO experienced in road maintenance projects and they will be responsible for engaging with the SIRAP2 Community Liaison Officer to develop relationships with quarry owners and their communities. During this process, the Contractor(s) CLO and the PST CLO will identify the required traditional exchange of services which would enable the project to extract aggregate. This traditional exchange of services will be acceptable within the context of the WB Safeguards Policies and may be in addition to the usual fee paid for the aggregates. Prior to any commitment being given to the communities, the agreement will be approved by the Supervision Engineer who will take advice from the SIRAP2 National Safeguard Specialist and SIRAP2 Project Manager.				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	For rivers on Malaita, the extraction limit will be set based on the ability of the resource to regenerate and the potential environmental impacts. Contractor(s) is required adhere to these limits and change the quarry source as the project work site move. This will also ensure that the communities nearest to the work are given the opportunity to benefit from this economic activity. This will also provide more community support to the project rather than sourcing aggregates from a remote location compared to the work site. The Contractor(s) shall document, report and maintain record of their extraction activities for Engineer and PST verification. Imported aggregates will be from an existing permitted quarry in an approved country of origin. The quarry source must be operating in compliance with the conditions of their own national permit and good international standards to prevent transport of invasive species to the country. Supervision Engineer to approve source quarries prior to purchases agreements being signed and shall be consistent with the Contractor(s)s' Biosecurity Management Plan. To prevent inter-island spread of GAS, stockpile sites for imported and local aggregates which are transshipped through Honiara will be decontaminated and a biosecurity perimeter will be maintained at the Honiara stockpile site in conjunction with the SIG Biosecurity Department, following the system developed by MID for their road aggregate stockpile site. The contractor(s) will be required to present specific management plans for the sea and land transportation of these materials from the origin to the project site, especially the landing facility. These plans will be approved by the Supervision Engineer.				
Solid waste generation	Solid Waste Management Plan to be completed following requirements of ESMP. SWMP will be included as an appendix to the CESMP for clearance by the Supervision Engineer. At all times, the Contractor(s) is responsible for the safe and sound disposal of all solid wastes generated by the Works. Solid waste includes:	All locations	Minimal (part of standard design and construction practices)	Contractor(s)	Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	• General waste (i.e. office type waste, household waste (from any workers camps), lightweight packaging materials). • Recyclable waste (i.e. certain plastics, metals, rubber etc. that can be recycled). • Organic biodegradable waste (i.e. waste that will decay / break down in a reasonable amount of time, such as green waste, food wastes and other biodegradable kitchen wastes from construction camps). • Inorganic non-recyclable waste (i.e. waste that cannot decompose / break down and which cannot be recycled). • Hazardous waste (i.e. asbestos, waste oil etc.) The Contractor(s) will determine if the permitted landfill site on Malaita has the capacity to accept project solid waste. If not, the Honiara City Council should be consulted on their willingness and ability to receive the project waste. The Ranadi Landfill operated by Honiara City Council (HCC) Environmental Health Division has a drainage system along with settling and digestion ponds to capture leachate. • General waste (including only small quantities of lightweight packaging waste) can be disposed of at Honiara, subject to HCC approval. In addition to this and with the approval of the Supervision Engineer: • Organic biodegradable waste may be deposited in designated dumping areas in reasonable quantities upon consent of landowners and approval by the provincial government of Malaita. • Recyclable waste may be supplied to a local receiver licensed to process such waste. The SWMP shall describe solid waste streams generated by the works and detail the approved disposal methods along with permissions from landowners and approval from the Provincial Government of Malaita. At all times, the Contractor(s) is/are responsible for solid wastes generated by the works and their campsite(s) in accordance with the Environmental Health Act				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	and in accordance with the Solomon Islands Waste Management and Pollution Control Strategy 2017-2026. The Contractor(s) will develop a Solid Waste Management Plan (SWMP) following the guidelines provided in Appendix D of this ESMP which also adheres to the SIG Environmental Health Act. 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 ESMP. • Identify approved service providers for collection and disposal of waste and stipulate conditions of carriage. • Detail the approved disposal methods along with appropriate permissions. • Where necessary, confirm with HCC the process and permissions for using Ranadi Landfill for handling general project and septic wastes. • Contractor(s) shall contact HCC to determine whether any quantities of the project's hazardous waste materials generated by the project are suitable to be handled at the Ranadi Landfill and obtain any permissions necessary. • Contractor(s) shall seek permission from HCC to disposal of organic biodegradable waste in their designated managed area. • Recyclable waste may be supplied to a local receiver licensed to process such waste. • Contractor(s) to identify shipping route and licensed disposal facilities for all exported waste. • Contractor(s) to identify any export permits or conditions for export of wastes and assume all costs related to their transport to approved final waste disposal destination(s). • Identify those persons responsible for implementing and monitoring the SWMP.				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	Any waste which cannot be safely and correctly disposed of in the SI is to be disposed of OFFSHORE in permitted or licensed facilities. It is the Contractor(s)'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 Supervision 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. Disused material may be generated in the form of surplus aggregates or surplus materials from excavations. 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 for general use by MID 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 MID to be stored for future use by the Ministry. This location shall also be subject to approval by the Supervision Engineer. Unless otherwise instructed by the Supervision Engineer, other surplus materials not needed during the defects liability period shall be removed from the site and the country.				
Hazardous substances	Where possible fuel shall be obtained from local commercially available sources. Prior arrangement regarding quantity and type will need to be organised by the contractor(s). All fuel to be stored in self-bunded containers In all project locations, fuel should only be stored in self-bunded containers within designated areas that are designed to store and facilitate operations associated with it (e.g. re-fueling). Bunded areas (secondary containment) must contain the larger of 110% of the largest tank or 25% of the combined volumes in areas with a total storage volume equal or greater than 1,000 L. Bunded areas are to be impervious	All locations	Minimal (part of mobilisation and construction planning)	Contractor(s)s	SIRAP2 PST

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	(watertight), constructed from chemically resistant material, and be sheltered from the rain as rain water 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. Spill Prevention and Emergency Response Plan to be developed by Contractor(s) and workers trained to be submitted together with the CESMP. The response plan should include details on the use of spill kits and absorbent items that need to be provided on-site to prevent spills entering the receiving sensitive environment (ground, surface water). This plan should be applicable to all project works areas. A SRP should be in place for both the construction phase and operational phase. Identify suitable area for hardstand and bunded storage areas. These areas will be at least 100m inland from the coast. It is the Contractor(s)'s responsibility to ensure that these are stored in accordance with the ESMP and applicable rules and regulations and that all persons who may come in contact with such hazardous substances and materials are adequately protected from unnecessary exposure. 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. For any clean fill material generated, it shall be either used to backfill areas where old equipment or infrastructure has been removed or as a resource for general use by MID and the community. Clean fill materials which cannot be reused within the timeframe of the project implementation shall be transported to a location approved by the Public Works Department to be stored for future use by the MID. This location shall also be subject to approval by the Supervision 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 defects liability period.				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	Unless otherwise instructed by the Supervision Engineer, other surplus materials not needed during the defects liability period shall be removed from the site and the country.				
Importation of equipment and materials	All imported vehicles, equipment, materials and machinery will be inspected by Biosecurity Solomon Islands on arrival. The Contractor(s) 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 (as per national requirements) to be submitted to Quarantine Inspectors and approved by the Supervision Engineer prior to delivery to site. For imported aggregates, an import permit will be required and the conditions of this permit may include the following fumigation requirements as a minimum: *Fumigation with methyl bromide at normal atmospheric pressure at a rate of 48g/m3 for 24 hours at 21˚C or above, within 21 days of shipment;* *OR* *Fumigation with sulphuryl fluoride (Vikane) at normal atmospheric pressure at a rate of 64 g/m3 for 16 hours at 21˚C or above, within 21 days of shipment.* Prior to imported items being delivered to site the Supervision Engineer shall confirm that all necessary biosecurity documentation and clearances have been provided that shall be detailed in the required Biosecurity Management Plan submission as part of the CESMP.	All components	Minimal (part of mobilisation and construction planning)	Contractor(s)	Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	The contractor(s) will be required to present specific management plans for the sea and land transportation of these materials from the origin to the project site, especially at the landing facility in either Honiara, Auki or Su'u and Bira Harbors. These plans will be approved by the Supervision Engineer Any locally supplied aggregates for this project will need to be sourced from an area which is known to be free of GAS.				
Community grievances	The Contractor(s) shall implement the Project' GRM and ensure that public consultation and disclosure communication is completed at regular intervals with full involvement of SIRAP2 NSS to ensure that the public are fully aware of the works and the GRM process. Consultation should include all aspects of the project including the bridge and approach road works site, quarries and transport routes. Consultation shall include raising awareness of the project GRM, how to lodge complaints (both written and oral) and how complaints will be managed and documented and reported. In all instances, consultations will be designed to ensure free, prior and informed consent of the affected communities with the aim to maintain broad community support for the project which has been demonstrated to date. Advertise (including posting in the Contractor(s)s' site offices), maintain and operate a grievance response mechanism, including publishing statistics on resolutions (record from logbooks and report summaries during the progress reporting periods).	All components	Minimal (part of mobilisation and construction planning)	Supervision Engineer SIRAP2 PST NSS	SIRAP2 PST CLO & NSS
Worker grievances	Establish a workers' grievance mechanism as described in the SIRAP2 Labour Management Procedure. Record/document, monitor and report on all grievances received.	All locations	No additional costs	Contractor(s)	Supervision Engineer
Local business grievances	Ensure that local businesses/roadside vendors (along the transport routes to the bridge sites) 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 lodge complaint(s) and how complaints will be managed, documented and reported.	All roads	Minimal (part of mobilisation and construction planning)	Contractor(s)	Supervision Engineer
CONSTRUCTION STAGE					

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
Traffic (vehicle and pedestrian) and construction safety	The Contractor(s) will prepare and submit a site-specific Traffic Management Plan (TMP) prior to commencing physical works on site to address traffic-related issues related to the project. This TMP should be in accordance with Traffic Control during construction and should form an annex to the Contractor(s)s ESMP. The Contractor(s) shall: • Implement the traffic management plan (TMP) to ensure smooth traffic flow and safety for workers, passing vehicles and pedestrian traffic. • Where appropriate, employ flag operators on the road leading to each of the worksites and during equipment and vehicle crossings from the Contractor(s) equipment depot(s) to prevent traffic accidents. The workers shall have relevant safety equipment (PPEs) and training. The TMP should prohibit the use of engine breaking close to and through communities and inhabited areas, and haul truck/vehicle speeds shall be regulated while passing through populated areas during working and off-hours. The TMP should include traffic control measures for nighttime works including observing speed limits and blowing of horns. Special care must be taken when construction works reach any nearby school (s), churches and health posts/health facilities. Coordination with school and institutional representatives must occur for safe passage of students and parents as well as other pedestrians crossing through or traversing a construction area. May include restricted work hours, and reduced speeds and detours with the aid of signages. Contractor(s) to report on adherence to speed limits and use of haulage routes in monthly reports.	Route from quarries and ports to laydown sites	Safety equipment included in construction cost	Construction Contractor(s)	Supervision Engineer
Site Safety	Restrict access to the construction zones and campsites through warning signs, temporary gates, barricades, fencing or other construction zone demarcation at all entry or crossing points, including Contractor(s) laydown sites.	All components	Included as the provisional sum in the bill of quantity	Contractor(s)	Supervision Engineer SIRAP2 PST

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	Demarcate all excavations of 2.0m depth or greater and side slopes in excess of 2:1 (horizontal to vertical) through construction fence, barricades, rope or other means that clearly defines the hazard. Maintain and demarcate a 5.0m setback from the top of the bank using signs, construction flags, or other visual warning to prevent machinery, vehicles and people from accidentally falling into the river channel. Ensure use of personal protective equipment (PPE) and consider providing for on-site storage of workers allocated PPE.				
Soil erosion	All erosion and sediment controls will be Contractor(s)s responsibility to maintain an effective working order, including reconfiguring drainage lines as required during the construction process to ensure dirty water is directed into sediment controls/siltation ponds at all times. Reuse of the water collected in sediment ponds or basins for dust suppression and roadworks is preferred over release into the environment. Where water is being stored for dust suppression, the required design capacity of the basins shall be available. Sediment basins and other sediment controls shall be operated and maintained in a manner that minimises the risk of environmental harm. The design capacity of the upper settling volume shall be made available within 120 hours of the most recent rainfall event which causes runoff. The sediment storage zone shall be maintained at all times with the accumulated sediment removed in a manner that does not allow the sediment to be conveyed into a watercourse or offsite. Where coagulants or flocculants are used to treat stormwater, they must not cause harm to the receiving waters or environment. Before the natural surface is disturbed on a section of the works, the Contractor(s) shall submit a method statement and shall comply with their Erosion and Sediment Control Plan (ESCP). Excavations should be kept to a manageable size to reduce the time of exposure. Any stockpiles will need to be on an impermeable geotextile or hardstand and runoff directed to permeable land. Stockpiles of any fine grain	All locations	Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	materials (e.g. sand and topsoil) must be covered to prevent dust and sediment laden runoff during rain events. Discharges from any activity at any location are prohibited from discharging directly to the marine and coastal environment. Clean runoff should be diverted inland for percolation to underlying groundwater, and potentially contaminated runoff should be collected and treated in designated sedimentation ponds. Treatment will be dependent on the type of potential contamination (e.g. oil water separator for runoff contaminated with hydrocarbons or settling pond or tank for sediment laden runoff). River water quality monitoring (including suspended sediments) will be undertaken upstream and downstream of the construction site and will be the Contractor(s)s responsibility. The Supervision Engineer ensures that the Contractor(s) monitors river quality monitoring before, mid and end of the project. The Contractor(s) shall maintain all erosion and sediment controls in effective working order including: • Minimise time and size of ground disturbing activities to workable size at any one time. Ensure sediment traps are in place prior to works commencing. 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. • Re-vegetate disturbed areas that are not being paved as soon as practicable (loosen ground; apply topsoil; seed or plant as necessary). • All earthworks must be undertaken with the intent to reduce/prevent soil erosion of any exposed surface and be constructed according to a phasing plan which requires re-vegetation before moving on to the next stage. • Minimize the number of stockpiles area, and a number of time stockpiles are exposed, place all minimum 30m from areas prone				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	to flooding, and construct a swale (minimum 450 x 450 mm) between stockpiles and adjacent properties to retain sediment in the construction zone. • Slopes greater than 2:1 (stockpiles, excavation pits, temporary cut/fill, and final landscape form) must be fitted with appropriate erosion control measures as soon as possible. • All earthworks to be undertaken during the dry season or when the weather conditions are favourable. • Install silt traps in all temporary and permanent drains where work is occurring in or within 30m of such drain. • All run-off from the project shall be collected and diverted to facilities for removal of sediments, i.e. silt ponds. • Runoff from project area shall not be discharged into an adjacent water bodies, including the sea without effective means to prevent sedimentation.				
Natural Disasters Cyclones Earthquakes Landslips	If a cyclone strikes, within 24 hours, construction must cease, any loose boulders, construction equipment and materials shall be secured or removed from near rivers and other water courses; all stockpiles of loose aggregate or soil, and any potential contaminant must be covered and or removed, and any temporary fencing or safety equipment likely to be in the flooding zone must be removed. Compact and protect all stockpiles and excavation pits throughout the construction period. Stabilize any steep slope (greater than 2:1 horizontal to vertical) with erosion control measures. Contractor shall designate a safe evacuation area for all its workers and staff, and implement a Disaster Risk Reduction Management Plan or Emergency and Disaster Management Plan.	All locations	Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer
Vegetation Clearance	For any vegetation clearance: The Contractor(s) will limit any areas to be cleared to the minimum workable area.	All location (Laydown and storage sites and roads)	Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer and National Safeguard Specialist

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	Any significant vegetation (crop trees, important shade trees, boundary marker species, etc.) will be identified prior to any clearance and appropriate compensation or avoidance measures will be secured (consultations facilitated by the National Safeguards Specialists and CLO) prior to establishment of workers' camps laydown and storage sites. 100m buffer zone established around water courses and coastline. Contractor(s)s machinery operators to understand boundaries. The Contractor shall allow cleared vegetative material to be collected and disposed of by communities for their fuel wood requirements if applicable. All topsoil (minimum 150mm depth) must be stripped and stockpiled and re-applied to designated revegetated areas. Final grading must re-construct the original landscape shape and grade at edges of the construction zone. Trees and vegetation stockpiled for decomposition must be in appropriate locations that will not disrupt drainage patterns of the surrounding landscape, and or removed and disposed of at an approved site. Where logs and firewood are desired by villagers, contractor(s) must remove branches and assist villages in transporting logs to appropriate locations. The contractor(s) to inform communities ahead of time on the actual vegetations that need to be removed.				
Waste disposal	The Contractor(s) shall prepare and Implement approved Solid Waste Management Plan (SWMP). The plan: • Identifies the landfill/approved disposal sites to be used for the works' waste. • Ensure all construction waste material is re-used, recycled, returned to the supplier, or packed up for transport to an approved disposal site or out of country depending on accepted waste streams at each facility. • Ensure areas for waste collection, recycling and off-site disposal are clearly marked/sign posted. Segregate waste to avoid cross contamination, such as with contaminated material (hazardous substance).	All locations (laydown site, stockpile site, work location and workers facilities)	Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	• Require the contractor(s) to install waste collection facilities at construction lay down area to allow for collection and packing of waste. Strictly no dumping of rubbish. Include awareness training in general environmental training. • Prohibit the disposal of solid wastes into drainage ditches and public areas. • Prohibit the burning of construction and domestica wastes. • Ensure that workers are provided with a sanitary system to prevent fouling of surrounding soils. Sanitary system must be of sufficient size for the number of workers and must take into account the disposal situation at the local landfill/dumpsite/approved disposal site. If access to existing facilities is not available, workers must be provided with a sanitary system to prevent fouling of surrounding soils. • All hazardous waste is to be disposed of offshore in permitted or licensed facilities. It is the Contractor(s)'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 (e.g. Ranadi Landfill in Honiara) or another country, and to ensure compliance with all relevant laws. Evidence will need to be supplied to the Supervision Engineer of proper disposal of waste at the final location. • With the approval of the Supervision Engineer, organic biodegradable waste may be deposited in designated dumping areas in reasonable quantities, other suitable facilities which do not lead to leachate to reach soils or groundwater. • Organic biodegradable waste may be deposited in designated dumping areas in reasonable quantities at the approved landfill. Any waste which cannot be safely and correctly disposed of in the SI is to be disposed of OFFSHORE in permitted or licensed facilities. It is the Contractor(s)'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				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	will need to be supplied to the Supervision 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. Disused material may be generated in the form of surplus aggregates or surplus materials from excavations. 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 for general use by MID 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 MID to be stored for future use by the Ministry. This location shall also be subject to approval by the Supervision Engineer. Unless otherwise instructed by the Supervision Engineer, other surplus materials not needed during the defects liability period shall be removed from the site and the country. The Contractor(s) 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 ECD and MID advice (for example construction and training in use of compositing toilet facilities).				
Water and soil pollution	Treatment and disposal of all Contractor(s) generated sanitation wastewater is in accordance with ECD and approved by Supervision Engineer. Hydrocarbons (lubricants/fuel) shall be collected and recycled or disposed of according to SIG regulations (incinerated or removed from). All areas intended for the storage of hazardous materials will be quarantined and provided with adequate facilities to combat emergency situations. Spill response kits available at all locations where fuel is stored. SPRMP training completed for all construction workers.	All locations	Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer & ECD

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	Ensure availability of spill clean-up materials (e.g. absorbent pads, etc.) specially designed for petroleum products and other hazardous substances where such materials are being stored. Spillage, if any, will be immediately cleared with utmost caution to leave no traces. 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 Contractor(s) must have a SRP in place. The 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 plan should be applicable to all SIRAP2 project works areas (quarries, and transport routes). A SRP 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). Machinery refueling to be undertaken at least 20m from any watercourse. Heavy machinery shall not be used during a period of heavy rain or when the ground is waterlogged. Excavations are bunded to prevent ingress of water runoff and clean water diversion (e.g. sand bags, clay bund, or shallow trenches) are used to direct overland flow away from active work and storage areas. Soakage pits should not be installed directly into a shallow aquifer. 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). 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 (or				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	processed through a filtration system) before the water can be reused as wash water, dust suppression or in other processes. Regular cleaning of access points to prevent dirt build-up on roads. Discharge of oil contaminated water shall be prohibited. Discharges of treated wash water are to occur to land only, at least 500m from any bore used for potable water at a rate not exceeding 20mm/day or the infiltration rate of the ground (i.e. no ponding or runoff). A separate washdown area is required for machinery or material with oil or fuel residue and treated through an oil water separator. Concrete production should only take place when there is no rain forecast. Sand bags or diversion drains must be used to divert runoff from concrete cutting or setting areas. Concrete production is to be equipped with settlement tanks/ponds for treatment of slurry and process water. Treatment shall include settling of suspended solids and decreasing the pH of the water. Waste concrete should be allowed to harden before reuse as clean fill. Set any concrete waste and then dispose of as clean fill or crush for reuse. All equipment used in concrete production must be cleaned in designated wash down areas in the construction laydown area, away from surface water, in a bunded impermeable area and shall not be allowed to permeate to ground. Wastewater from concrete cutting, washing equipment or production must be collected and treated (settling and neutralisation through pH adjustment). In sections along the river or coastal area, earth and stone should be properly disposed of so as not to block rivers as this could result in adverse impact on water quality.				
Groundwater and surface water	Aquifers discovered during excavation must be suitably protected from contamination using erosion control and stormwater management techniques in the National Building Code.	All locations	Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	Depth of soil over bedrock must be adequate to eliminate negative impacts on groundwater for road, bridge and slope stabilization construction. Minimise risk to groundwater and surrounding soil by developing a Spill Prevention and Response Management Plan and provide training to all contract workers on how to implement the Spill Prevention and Response Management Plan. Precautions should be in place to prevent wastewater and hazardous substances or materials from entering the environment (e.g. fuel spillage, wastewater containing fire retardant during firefighting), The Spill Prevention and Emergency Response Plan should include factors associated with both the construction and operational phases and should be available at all project locations. Mitigation measures will be implemented to divert stormwater from the construction site away.				
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 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 machinery and equipment shall be well maintained and in good working order. All surfaces should be constructed to their final design solution as quickly as practicable. Keep work areas clean with regular sweeping. Only small areas should be cleared of vegetation at any one time and re-vegetation 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). Manage speed of transportation trucks on unsealed roads, particularly when passing through settlements.	All locations (particular focus on identified sensitive social receptors – schools, churches, health centres, market stalls)	Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	All construction areas and access roads will be sprinkled with water, on a regular basis, particularly during dry, windy conditions. Sources of water will be detailed in the CESMP. Ensure watering of access road adjacent to residential areas during dry periods. Water soil stockpiles or otherwise cover them to limit the spread of air-borne dust particles. Minimize heavy machinery usage and idling. Ensure vehicles and machinery are fitted with appropriate emission control equipment to avoid air pollution and release of toxic substances.				
Noise and vibration disturbances	Minimise nuisance from noise, especially closer to residential areas and sensitive receptors, through establishment and communication to affected parties of working hours and avoid increase of noise and number of work equipment at outside of advertised hours. Advertise working hours at the site entrance. Crushing plant to be located away from residential areas and communities. The crushing plant will be located so that it is screened by natural vegetation and/or landforms to act as a noise barrier. If possible, use noise barriers / screens or mounds to shield sensitive receptors from aggregate processing. No works to be undertaken at night or on a Sunday. 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. Consultation with Communities should be undertaken to inform them of any change in works and process for loading complaints. Signage to outline complaints procedure (GRM) and contact details of recipient of complaints (e.g. names and positions, phone numbers, physical address and email).	All locations (particularly close to identified sensitive receptors)	Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer, SIRAP2 PST & ECD

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	The WB/IFC EHS Guidelines[19] Section 1.7 – Noise Management at the aggregate processing plant 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 Contractor(s) shall prepare a Noise Management Plan in accordance with WB/IFC EHS Guidelines as a key element of and Annex to its CESMP. Project activities must be conducted during normal working hours and working days. If activities must be conducted in the evening and/or weekend, the local Community Council of Chiefs must be given at least one week notice of start and completion times. Maintain as much tree cover as possible between the construction zone and residential buildings. Operators of noisy equipment or other workers in the vicinity of excessively noisy equipment to be provided with ear protection equipment. Any construction equipment deemed too noisy by MID shall be replaced.				
Accident risks/Impacts on traffic safety	In compliance with national regulations, the Contractor(s) will implement the Traffic Management Plan (TMP) and ensure that the construction site is properly secured, and construction related traffic regulated. This includes but is not limited to: Signposting, warning signs, barriers and traffic diversions: the site will be clearly visible, and the public warned of all potential hazards. Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. Communication to the public through a public consultation and notice boards regarding the scope and schedule of construction as well as certain construction activities causing disruptions and access restrictions.	All locations	Safety equipment included in construction cost Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer

[19] International Finance Corporation, Environmental Health and Safety Guidelines, General Guidelines: Noise Management

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	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. Contractor(s) to report on adherence to speed limits and use of haulage routes in monthly reports. Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public. Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during peak hours (e.g. school pick up/drop off times, etc.). Conduct road safety audit prior to completion of construction to ensure road safety designs are properly implemented.				
Chance find of objects and loss of archaeological artefacts or sites	In the event of the discovery of an item, the finding must be registered and the information shall be handed over to The Museum of Solomon Islands (under the Ministry of Culture and Tourism) who will advise on how they shall monitor the construction works. Work to immediately stop in specific location of unearthed artefacts or site. Fence the area to limit access and notify SIRAP2 PST and Supervision Engineer immediately for instruction to proceed. Work only recommences after advise by the Ministry of Culture and Tourism.	All locations	No marginal cost	Contractor(s)	MCA/ Supervision Engineer
Landscape degradation	The contractor(s) is/are required to detail their plans for site decommissioning and restoration in the CESMP. The plan will describe all activities with regard to site restoration and landscaping in areas such as borrow pits, quarries, camps, crushing plants, etc. to ensure that the activities are done to an appropriate and acceptable standard. The sites must be restored to at least the same condition and standard that existed prior to	All locations	Minimal (part of standard construction practice)	Contractor(s)	SIRAP2 PST/ Supervision Engineer / ECD

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	commencement of works. The plan will be approved by the Supervision Engineer. Restoration of quarry sites to be completed in accordance with the ESMP and QMP requirements. Construction materials will be sourced commercially and use of wood from natural forests will not be permitted. Contractor(s) to include provision for construction lay down area rehabilitation following the completion of the construction phase. Restoration of landscape after completion of rehabilitation works; restore the vegetation cover in accordance with the surrounding landscape and any required design (e.g. grass land or shrubs). Use indigenous plant species for the landscaping requirements 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. Photographs will be taken of any workers' camps, laydown and stockpiling sites prior to establishment and provided to Supervision Engineer. Photos will be used as a guide during restoration and post-restoration photographs are required to be submitted to the Supervision Engineer. Land disturbed during construction must be revegetated and graded/constructed as quickly as possible to prevent soil erosion. Any final steep slopes should be finished using bio-engineering techniques. Drainage patterns before construction must be restored – if modified, there must be no increase or decrease in drainage patterns that could negatively impact adjacent forested / farmed areas.				

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
Hazardous substances and safety and pollution	Hazardous substances and materials may be specified and used in construction. It is the Contractor(s)'s responsibility to ensure that these are stored in accordance with the ESMP and applicable rules and regulations and that all persons who may come in contact with such hazardous substances and materials are adequately protected from unnecessary exposure. Store and handle hazardous substances self-bunded tanks or drums. With the Supervision Engineer's permission may alternatively be store in bunded, hard stand or designated areas only. Bunded areas to drain to an oil-water separator which will need to be constructed or a mobile proprietary unit imported specifically for use on the SIRAP2. Bunds to contain 110% of total volume required to be stored or 25% of total volume if total volume is over 1,000 L. Provide hazard specific personnel protective equipment (PPE) to workers directly involved in handling hazardous substances (e.g. chemical or heat resistant clothing, gloves). Complete list, including safety data sheets (SDS) for each hazardous substances 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 Contractor(s) SPERMP must be in place. The plan should include details on the use of available spill kits and absorbent items to prevent spills entering the receiving sensitive environment (ground or surface water). This plan should be applicable to all SIRAP2 project works areas. A Spill Prevention and Emergency Response Plan should be in place for both the construction phase and operational phase. This Spill Prevention and Emergency Response Plan should be applicable to all project works areas (road sections, laydown, quarries, and transport routes). Spill kits and training of use to be provided to all workers during toolbox meetings. Spill kits to contain PPE for the spill clean-up (e.g. appropriate	All locations (particularly near the identified environmental receptors: rivers)	Safety equipment included in construction cost Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	gloves [nitrile] and overalls), material to contain the spill and absorbent pads, and a heavy duty rubbish bag to collect absorbent pads or material. Waste oil to be collected and removed abroad to an approved facility (for disposal or cleaning) at completion of works. Minimize fuels and chemicals stored on-site and Contractor(s) to have a spill management plan that ensures the protection of groundwater and the river channel. Sites where pollutants or hazardous materials are stored or used must be confined to a designated area or protected according to the National Building Code of Solomon Islands. Adopt effective stormwater management techniques to ensure there is no possibility of groundwater or river channel contamination.				
Loss of biodiversity	If during the course of construction work, particularly vegetation clearance and excavations that any bird, reptile or mammal species are identified as being potentially impacted (e.g. nesting bird in area of proposed vegetation clearance), work are to immediately stop in the specific location of the find and the ECD and SIRAP2 PST shall be notified immediately for instruction to proceed. The contractor(s) must liaise with the Environment and Conservation Division should any fauna (reptile, avian, or mammal) are encountered that affects construction activities for the road works. All recognized natural habitats and protected areas in the immediate vicinity of the activity will not be damaged or exploited. All staff will be strictly prohibited from poaching, hunting, foraging, logging or other damaging activities. For large trees in the vicinity of the activity, mark and cordon off with a fence these large tress and protect the root system and avoid any damage to the trees.	All locations	No marginal cost	Contractor(s)	Supervision Engineer / SIRAP2 PST / ECD

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	Any open water drain discharging construction site run-off to the marine environment will be provided with appropriate erosion and sediment control measures to include but not limited to bunds, silt fences, etc. There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas to be used by the bridge projects. Ensure the full payment of compensation for lost crops and assets to rightful owners.				
Health and safety	Do not commence works until the Contractor(s)s OHS Management Plan has been approved by the Engineer. Implement all provisions within the approved OHS Management Plan. 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 the course of project. Prepare safety plans specifying responsibilities and authorities. Health and safety documentation to include all areas of the project (e.g. quarries and transport routes). Ensure all occupational health and safety requirements are in place on construction sites and in workers' camps. Construction lay down area(s) 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(s) e.g. stretcher, vehicle transport to hospital. First aid kits to be located in communal areas or marked areas in the unlikely event of an incident occurring. Contractor to make prior arrangements with the nearest health post or hospital or medical professional in Auki to accommodate emergency cases. Provide education on basic hygiene practices to minimize spread of diseases.	All locations	Included as provisional sum in the bill of quantity	Contractor(s)	Supervision Engineer / SIRAP2 PST

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	Increase workers' HIV/AIDS and sexually transmitted disease (STD) awareness, including information on methods of transmission and protection measures. 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. Ensure use of PPE and consider providing for on-site storage of workers allocated PPE. Worker GRM will be available and will enable worker to report unsafe working practices as described in Section 7.11 of this ESMP and the LMP. All workers are required to undergo COVID-19 screening before the recruitment process. If a worker has been tested positive or have been in contact with a positive COVID-19 case, the worker will be required to undergo the 14-day quarantine isolation period.				
Construction Camps/Contractor(s) Laydown Area/Workers Camp – Design	If workers' accommodation is required, the Contractor(s) is/are to provide their own camp facilities to accommodate the personnel in accordance with WB's Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced Labour Influx. The Contractor(s) shall prepare a Workers' Camp Management Plan (WCMS) which prescribes minimum environmental requirements in order to ensure that the operation of workers' camp will not cause any harmful effect to the environment and community. Throughout the construction and operation of workers' camp, the Contractor(s) will be fully responsible for carrying out the works in an environmentally and socially appropriate manner. Furthermore, the Contractor(s) shall comply with the requirements outlined in ESMP.	Construction Camp/office site locations	Minimal (part of standard construction practice)	Contractor(s)	Supervision Engineer MID

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	The Construction Camp /(Contractor(s) Laydown Areas): • Must be constructed on a solid surface and located to not cause disturbance to adjacent land and landowners, and the surrounding communities. • Must not be located within floodplains; coastal, hazard-, and landslip-prone areas, and shall have a minimal adverse environmental effect to the adjacent and surrounding communities. • Must have the minimum requirements regarding facilities and maintenance.				
Damage to assets and infrastructure and utilities	Maintain high standard of site supervision, and vehicle and plant operation to reduce risks of damage to infrastructure, water, power and telecommunication lines. Prepare procedures for rapid notification to the responsible authority (MID and service providers). As a result of construction activities, any damage to assets or infrastructure (including public roads) must be reported to the MID and rectified at the expense of the Contractor(s). Provide assistance with reinstatement, in the event of any disruption. Accidental damage to community assets including agricultural crops and trees or others will be compensated (facilitated by CLO) by the Contractor(s) under the national valuation guidelines.	All locations (particularly identified sensitive receptors for road side tree plantations, coconut and cocoa plantations and encroachment areas)	Dependent on asset/ infrastructure and level of damage	Contractor(s)	Supervision Engineer / SIRAP2 PST
Community engagement and grievances	Implement the SIRAP2 Stakeholder Engagement Plan (SEP). In all instances, consultations will be designed to ensure free, prior and informed consent of the affected communities with the aim to maintain the broad community support for the project which has been demonstrated to date. Maintain a grievance response mechanism at the SIRAP2 project website. Ensure that public consultation and disclosure communication is completed at regular intervals to ensure that the public are fully aware of the SIRAP2	All components	Minimal (part of standard construction practice)	Supervision Engineer	SIRAP2 PST

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
	project/program activities and the GRM process. Consultation should include all aspects of the project including the bridge and its approach road works, quarries and transport routes. SIRAP2 NSS will be the Contractor(s)' key facilitator for all consultations. Signages should be used in public areas around the project sites advising the complaints procedure and contact details of key project individuals responsible for responding to issues raised. MID's CACs (Community Advisory Committee) comprised of key community members including chiefs, pastors/priest, teachers, youth leaders, resource owners etc.) work on a voluntary basis to inform communities on certain issues and also help in resolving complaints and grievances where applicable. CAC can work with Contractor(s) as well to facilitate communication of their works in the communities.			Contractor(s)	Supervision Engineer & SIRAP2 National Safeguard Specialists
Local business grievances	Ensure that local businesses 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. Signages should be used in public areas around the vicinity of works advising about the complaints procedure and contact details of key project individuals responsible for responding to issues raised.	Roadside	Minimal (part of standard construction practice)	Supervision Engineer Contractor(s)	SIRAP2 PST Supervision Engineer

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
OPERATION STAGE					
Road Safety and Integrity	Monitor the use of the bridges and roads to ensure that illegal road humps or trenching across roadways as illegal means to slow down traffic are constructed. Ensure highway markings, lanes, pedestrian-only, and any other pavement markings continue to be visible. Ensure pedestrian separation from vehicles is clearly indicated along the road.	Malaita	Additional to Project Costs/MID	MID Malaita Office and MID Safeguards	MID HQ
Soil Erosion	Inspect steep slopes (horizontal to vertical) or greater to ensure erosion control techniques set out in the National Building Code are performing as expected.	All locations	No marginal cost (standard operating procedure)	MID Nor Office	MID HQ
Construction Camp/Contractor(s) Laydown Areas	Construction camps must be removed when construction is complete, and the land restored to its pre-construction condition.	Construction Camp/Contractor(s) Laydown Areas/office site locations	No marginal cost (standard operating procedure)	Contractor(s)	Supervision Engineer
Drainage Maintenance	Ensure drains are cleared of sediment and detritus build up on a regular basis and after significant rain events Ensure that vegetation are cleared from drains.	Drainage along resealed section	Additional to Project Costs	MID Malaita Office	MID HQ

ACTIVITY/POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[17]	EXECUTING AGENCY	SUPERVISING AGENCY
Bridge and approach road condition monitoring	Monitoring the condition of the bridges for maintenance requirements for rusts and degradation and apply mitigation measures immediately to ensure against progressive deterioration. Monitor the condition of the approach roads for ruts/potholes to arrest progressive deterioration and provide for maintenance funds. Continuously engage with the local communities to report signs of deterioration so that mitigation measures can be immediately applied. Conduct regular vegetation control to ensure the approach roads to the bridges are always free of obstruction to the line of sight for road safety purposes	All bridge structures and their approach roads	Include in the annual maintenance funds	MID Malaita Office	MID HQ

7.2 Supplementary Management Processes

7.2.1 Land Tenure, Access and Acquisition

Most land (86%) in Solomon Islands is still held under customary tenure, where every member of landholding entity, such as tribal, clan or family is vested with the rights to use and access it. Non-owners usually have limited rights such as right of use, easement or right of way. There is no system which allows for customary land to be surveyed and registered, it is often very difficult for outsiders to identify land boundaries and to identify who 'owns' the customary land.

The Commissioner of Lands has the power to administer public lands and allocate interests to others. Once land is registered, the estate title owner has indefeasibility, except for overriding public interests or when the High Court issues an order to set aside the registration because of fraud or mistake. Under the Land and Titles Act 2014, the Commissioner of Lands discretionary power can only be exercised subject to directions of the Land Board.

Under the MID CPIU Safeguards Procedures Manual for National Transport Plan (NTP)[20] projects in the Solomon Islands, approved procedures for land access, easement and acquisition have already been established following consultation with stakeholders and communities. While these procedures are directly applicable to the project works, for any permanent land acquisition, the WB ESS 7 would also apply. This process viewed through the ESF lens should be implemented for the Project as they are already approved by and familiar to the communities:

Laydown sites and stockpile sites: for these activities, there is no land acquisition; the project requires only temporary access into lands. This land is used to park equipment and to position construction materials such as gravel. The procedure for these lands is as follows:

1. The SIRAP2 National Safeguard Specialist (NSS) identifies the landowners, the boundaries of their properties, and non-land assets which can be affected by the project. The NSS produces a scoping report which lists the owners, marks out the boundaries of the land in a sketch map and lists down non-land assets which may be removed during civil works.
2. The communities are consulted (by the NSS) to seek agreement on the scoping report and to verify that correct landowners and boundaries have been identified.
3. MID PST and customary landowners sign a MID approved Memorandum of Understanding (MOU) for voluntary land access with no cash compensation. This is usually done before mobilization of the Contractor(s).

Construction Material: for this activity, there is no land acquisition; the project requires only temporary access into lands. The procedure for these lands is as follows:

1. The NSS identifies the landowners, the boundaries of their properties, and non-land assets which can be affected by the project. The NSS produces a scoping report which lists the owners, marks out the boundaries of the land in a sketch map and lists down non-land assets which may be removed during civil works.
2. The communities are consulted to seek agreement on the scoping report and to verify that correct landowners and boundaries have been identified.
3. Contractor(s) (with support from NSS) enters negotiations with the landowners for access to materials.

[20] Ministry of Infrastructure Development Safeguards Procedures Manual

4. Contractor(s) and customary landowners sign a MID approved Memorandum of Understanding (MOU).

Land Acquisition: There will be no permanent land acquisition or resettlement for the Malaita bridge replacement works.

7.2.2 OHS

During construction and operation, health and safety is to be managed through a Site Specific OHS Plan and application of:

- WB ESS 2 – Labour and Working Conditions Section D (OHS)
- IFC Environmental, Health and Safety Guidelines (EHSG): General Section 2 (OHS)
- Safety at Work Act
- SIRAP2 Labour Management Procedure (LMP)

Required measures for management of OHS include:

a) Identification of potential hazards to project workers, particularly those that may be life threatening;
b) Provision of preventative and protective measures, including modification, substitution, or elimination of hazardous conditions or substances;
c) Training of project workers and maintenance of training records;
d) Documentation and reporting of occupational accidents, diseases and incidents;
e) Emergency prevention and preparedness and response arrangements to emergency situations; and
f) Remedies for adverse impacts such as occupational injuries, deaths, disability and disease.

To support the development of the OHS Plan, SIRAP2 has a Labour Management Procedure (LMP) which sets out the required OHS measures for this project in compliance with the WB ESS 2 (Labour and Working Conditions) and national legislation.

The Contractor(s) will develop an OHS Management Plan for the bridge and approach road works (in this case for the Malaita bridges replacement/upgrade) to establish and maintain a safe working environment, including the workplaces, machinery, equipment and processes under their control are safe and without risk to health, including use of appropriate measures relating to chemical, physical and biological substances and agents.

The Contractor(s) will proactively ensure that all workers are trained in what the OHS risks are and how to manage them. The OHS Management Plan will include how the Contractor(s) will train the workers on OHS requirements.

The Contractor(s) 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 the operating environment; (v) 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 working 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.

The LMP contains the requirement for a Workers GRM. The Contractor(s) will implement this GRM to ensure that a workers' GRM is in place, easily accessible and well-advertised to enable the workers to

report situations they believe are not safe or healthy and to remove themselves from a work situation which they have reasonable justification to believe presents an imminent and serious danger to their life or health.

The Contractor(s) will provide workers with facilities including access to canteen or catering, bathrooms (and shower blocks for any workers' camps) and appropriate rest areas.

For any workers accommodation, a policy will be put in place and implemented on the management of the quality of accommodation to protect and promote the health, safety and well-being of the project workers, and to provide access to or provision of services that accommodate their physical, social and cultural needs.

A system for regular review of the OHS performance and the working environment will be put in place by the Contractor(s).

The Contractor(s)' OHS Management Plan should incorporate all aspects of the project including the bridge sites and their approach roads, quarries and transport routes (including sea routes).

The Contractor(s) shall appoint a certified Safety Officer at the Site, with qualifications acceptable to the Supervision 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(s) shall provide whatever is required by this person to exercise this responsibility and authority.

Civil works shall not commence until the Supervision Engineer has approved the OHS Management Plan, the Safety Officer is mobilized and on site, and staff have undergone induction training.

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

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)'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 gender based violence (GBV), human trafficking and child abuse and exploitation (CAE) training.
- Expenses related to HIV/AIDS, GBV, human trafficking 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, 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) gender-based violence (GBV) training; and (iv) CAE training. The contractor(s) 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.

The Contractor(s) shall at all times take all reasonable precautions to maintain the health and safety of the Contractor(s)'s Personnel. In collaboration with local health authorities, the Contractor(s) 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)'s and Employer's Personnel to medical facilities in cases of emergency. The Contractor(s) shall ensure that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

The Contractor(s) shall send, to the Supervision Engineer, details of any accident as soon as practicable after its occurrence.

Within 5 working days of the end of the calendar month the Contractor(s) will be required to report to the Supervision 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)'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(s)
- Number of safety briefings
- Number of near misses
- Number of traffic management inspections
- Number of sub-contractor(s) reviews
- Number of stop work actions
- Number of positive reinforcements
- For each fatality, injury or near miss incident, the Contractor(s) shall provide a corrective action report within the monthly report detailing steps taken to ensure risks of a repeat incident are minimized.

7.2.3 Gender Based Violence, Human Trafficking, Sexual Exploitation and Abuse

As required in the bid documents, the Contractor(s) will implement the SIRAP2 Codes of Conduct and Action Plan to Prevent Gender-Based Violence, Human Trafficking, as well as Sexual Exploitation and Abuse (Appendix B). The Codes of Conduct aim to prevent and/or mitigate the risks of GBV, Human Trafficking, and SEA within the context of these works. These Codes of Conduct are to be adopted by the civil works contractor(s)s, as well as supervision consultants.

The Supervision Engineer shall provide to the Contractor(s) a list of approved service providers which shall include recognized NGOs and others for conducting training on GBV. From the provided list, the Contractor(s) shall enter into agreement with one service provider to undertake the GBV IEC campaign. The cost of the campaign shall be funded by the Contractor(s) from the provisional sum provided in the bill-of-quantity.

7.2.4 Covid-19

A guidance for World Bank Projects for Covid-19 states to prioritize and look after the well-being of their employees and to monitor and follow local and national health authority guidance. All SIRAP2 works will consider the Covid-19 global pandemic protection measures and will follow the WBG guidance note on Covid-19[21] in conjunction with national health authority guidelines for all parties involved during the project phase. The Guideline provides information on COVID-19 symptoms, use of face coverings, COVID-19 testing, social distancing etc. The WBG guideline should be utilised in conjunction with the national health guidelines on COVID-19.

7.3 Contractor(s)'s ESMP

The Contractor(s) is/are required to prepare a Contractor(s)'s Environmental and Social Management Plan (CESMP) for the Works, which shall be in line with this ESMP and the technical specifications of the bid documents. The Contractor(s) shall not commence any Permanent Works under the Contract prior to receipt in writing from the Engineer that the CESMP has been reviewed and approved by the Client and the World Bank. The approved CESMP shall become an integral part of the Contract Document.

The CESMP will be the Contractor(s)s guiding document for the implementation of this ESMP. During the works, the CESMP will be reviewed and approved based on the requirements of the ESMP and will be their management plan for the practical implementation of these requirements. The CESMP will contain the contractor(s)'s methodology and plan for adhering to their safeguard requirements. Additionally, the CESMP will detail how the Contractor(s) plan to resource their team with personnel and financial resources as per the Contract. The Contractor(s) will include sufficient provision in their Bill of Quantities (BOQ) to ensure that the CESMP can be developed, implemented, and monitored by their Safeguard Specialist. As this role will be key personnel within the bid document, the Contractor(s) is obliged to ensure that their BOQ item is sufficient for this person to carry out their duties as required in this ESMP and the contract.

The CESMP and associated sub management plans will be developed, approved, and disclosed before the commencement of civil works. The bid documents will require that the CESMP be developed by the Contractor(s)'s Safeguard Specialist and after internal review and approval, it will be subject to approval from the Supervision Engineer who will coordinate a review with the PST Safeguard

[21] http://pubdocs.worldbank.org/en/324831581700447537/COVID-19-Guidance-for-Contractor(s)s-CO-Final.pdf

Specialists. Once the CESMP has been approved, it will be disclosed by the Contractor(s) and the PST using the same methods as required for the ESMP disclosure.

The CESMP must use the below listed items to be consistent with, and respond to, the ESMP and bid document, the conditions of permits, and approvals from the relevant ministry or its departments. The document should reflect contemporary good practice; be balanced, objective and concise; and be written in a way that is easily understood by other parties. All commitments must be specific and auditable with measurable outcomes and clear timeframes. The CESMP must cover all activities within the project's area of influence. The area of influence includes the active worksites, laydown areas, construction camps, haul routes, concrete production facilities and materials sources.

Declaration and Document Version Control: person accepting responsibility for the environmental management plan – signed declaration; the document version control should be a simple system that ensures that details of all key changes to the document over time are properly recorded.

Project Description: The CESMP should provide a summary of the project as this provides context for the plan. The location of all works should be summarized with a clear definition of the works' area of influence. Basic and relevant information on the environment at these locations should be summarised from the ESMF included as this helps provide the environmental context to which the CESMP applies. A schedule of intended commencement and completion dates should be provided. Projects undertaken in stages should identify each stage in the schedule.

Objectives: The environmental outcomes of the plan should be defined. These should be tailored to the environmental issues outlined in the CESMP.

Environmental and Social Management Roles and Responsibilities: The CESMP should define the roles and responsibilities of personnel in charge of the environmental management of the project to reflect the requirements in the ESMP. The roles and responsibilities of each relevant position should be documented, including the responsibilities of subcontractor(s). The names of the responsible personnel do not need to be included. Identification of the position titles, roles and responsibilities is sufficient. If the roles and responsibilities are expected to change over time the long-term variations should also be documented.

Reporting: The description of reporting requirements should include: a list of required reports including where appropriate monitoring, environmental incidents, non-compliance, corrective action and auditing; a description of the standard report content; the schedule or triggers for preparing a report; who the report is provided to; and document control procedures.

Environmental and Social Safeguards Training: All people involved with the project should receive relevant environmental training to ensure they understand their responsibilities when implementing the CESMP. People to be trained include those at the site/s of all project activities and operations, including contractor(s)s, subcontractor(s)s and visitors. The training should be tailored to the role of the individual in the project. The CESMP will include a list of the training needed and the plan for undertaking this training. The CESMP will also identify the resources to conduct this training (internal/external).

Emergency Contacts and Procedures: The CESMP should identify the key emergency contacts responsible for managing environmental emergencies associated with the project and their contact

details. These personnel should have the power to stop and direct works so that they can manage emergencies effectively. In addition, the plan should establish procedures for managing environmental emergencies and ensure that those procedures are implemented and maintained.

POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS: The potential impacts section of the CESMP should include a tabulated summary of any relevant information previously provided in the ESMP. It should also identify the km marker/chainage of the identified (an any additional) sensitive receptors. Impacts from relevant stages of the contractor(s)' works should be defined in this section and should reflect the relevant conditions of approval.

MANAGEMENT MEASURES: The CESMP should clearly state how the potential impacts of the works will be specifically managed based on the content of the ESMP and the measures that the contractor(s) will undertake to implement these mitigations. The CESMP will propose management measures on the issues identified and will identify the cost involved and the party responsible for the management measures.

MONITORING PLAN: The CESMP must detail how the CESMP will be monitored and shall include a weekly monitoring checklist. An example monitoring checklist is provided in Appendix C as a guide. The monitoring plan will include: what is to be monitored, how it will be monitored, the parameters (standards) that it will be monitored against, who will monitor, where will be monitored and the cost of the monitoring plan.

AUDIT AND REVIEW: *Environmental auditing:* The environmental management plan should include the schedule or triggers for auditing the implementation and effectiveness of the plan. It should address both internal and external audit requirements including who is responsible for undertaking the audits and reporting the results. *CESMP review:* The CESMP should specify the schedule or triggers for reviews of the plan.

CESMP PREPARATION AND IMPLEMENTATION: The CESMP must ensure that the person taking the action takes full responsibility for the content and commitments contained in the plan. The CESMP must be prepared and implemented by a qualified environmental practitioner (Environmental Representative) with at least 10 years-experience. Field audits of CESMP implementation must be undertaken on at least a monthly basis by the Environmental Representative with associated audit reports certified and submitted to the Engineer.

CESMP COMPLIANCE: Identify the internal procedure that the Contractor(s) will follow when a non-compliance has been identified during the daily monitoring. Procedure will include notification responsibilities, rectification timeframe and reporting obligations. Procedure will also cover the process the Contractor(s) will follow when non-compliances are reported by the Supervision Engineer. Procedure will also identify how the Contractor(s) will provide corrective action to any disciplinary or training requirements following the non-compliance.

CESMP REVIEW AND AMENDMENT: The CESMP must be reviewed, updated and resubmitted to the Engineer for approval in response to an anticipated change of circumstances before any changes are permitted at the work sites. These circumstances include substantial design changes with environmental or social implications, changes to specific approved plans, new activities not contemplated in the Project ESMP, or additions to the Project's area of influence. No changes will be made to the Project or the project areas until it has either been confirmed by the Supervision Engineer that an update to the CESMP is not needed, or the update has been made and approved by the

Supervision Engineer. The CESMP must also be updated where it is deemed that the mitigation measures are not adequate to mitigate the environmental and social risks.

CESMP MANAGEMENT SUB-PLANS: The Contractor(s) is/are required to produce the management plans stipulated in this ESMP as part of their CESMP. These management plans are referred to throughout the ESMP. In addition to these management plans being a requirement for the CESMP, they will also be required as part of the tendering process to demonstrate that the Contractor(s) has started to consider these environmental and social impacts and has the capacity within their team to plan their safeguard management strategies.

8 Compliance and Monitoring Plan

8.1 Monitoring Plan

The Monitoring Table identifies the environmental and social monitoring requirements to ensure that all the mitigation measures identified in this ESMP are implemented effectively.

Non-compliance to environmental and social mitigation measures identified, though routine monitoring, will be advised to the Contractor(s) in writing by the Supervision Engineer in the first instance. The non-compliance notification will identify the problem, including the actions the Contractor(s) needs to take, and a time frame for implementing the corrective action. Recurring instances of non-compliance will be referred to SIRAP2 PST for follow up action.

8.2 Monitoring Table

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
DETAILED DESIGN/ PRE-CONSTRUCTION PHASE				
Traffic safety	CESMP documents	• Ensure approved TMP established for project. TMP includes all requirements of ESMF and ESMP	Prior to commencing civil works	Supervision Engineer
Development Consents & Permits	CESMP Document	• Development Consent, permits and consent conditions are included in the CESMP	Prior to approval of CESMP	Supervision Engineer
CESMP approved	CESMP Documents	• Ensure Contractor(s) has produced a CESMP to the appropriate standard and this has been reviewed and cleared by WB and SIRAP2 PST.	Prior to commencing civil works	Supervision Engineer
Completion of detailed design in accordance with ESMP, RPF, LMP and SEP requirements, including the preparation of required site-specific ESMPs, updating of the SEP, and RPFs and LMP as needed	Design Documents	• Review of detailed design documentation	Prior to approval of detailed design	SIRAP2 PST
OHS Plan	Design documents	• Ensure OHS Management Plan established for project as per requirements of ESMP (Section 7.2.2) and SIRAP2 LMP. • Worker GRM established and advertised	Prior to commencing civil works	Supervision Engineer
Soil erosion	CESMP documents	• Ensure Contingency Plan is completed and approved. Storm event management and soil erosion prevention measures to be included.	Prior to sign off of final designs	Design Consultant
Solid and hazardous waste	CESMP documents	• Approved Solid Waste Management Plan in place. • Waste segregation and collection at workers camp and laydown areas are established and well signed. • Waste segregation and collection storage arrangements in place and compliant with approved SWMP.	Prior to commencing civil works	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
Community Health and Safety	CESMP documents	• HIV/GBV/Code of Conduct training and acknowledgements have been completed as per contractual requirements. • Medical clearance certificates provided for all foreign workers. • GRM process was available for public inspection. • Worker and Labour Influx Management Plan contains all elements and has been approved by the Supervision Engineer and SIRAP2 PST.	Prior to commencing civil works	Supervision Engineer
Soil and Water pollution	CESMP documents	• Appropriate spill control and response plan in place. • Staff are trained on spill control and response plan. • Overland drainage diverts water flow away from exposed areas. • Sediment laden runoff from excavations or stockpiles directed to a settling area. Discharges of treated wash water are to occur to land.	Prior to commencing civil works	Supervision Engineer
Water supply	CESMP documents	• Suggested water source and supply network to be included in designs.	Prior to commencing civil works	Supervision Engineer
Ground water quality	Laydown sites	• Ground water quality monitoring for project baseline. The parameters include pH, electrical conductivity, total petroleum hydrocarbons (for potential petroleum contamination), and total nitrogen (for potential sewage contamination), or as agreed with ECD and the SIRAP2 NSS.	Prior to establishment of laydown site	Supervision Engineer
Storm water management	CESMP documents	Proposed storm water management / drainage design (e.g. use of oil-water separator) to consider impacts on hydrology, receiving environments and also contamination risk.	Prior to commencing civil works	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
Quarry operations	Quarry	• Upon confirmation of which quarries are to supply aggregate verify quarry operations to ensure any required permits or approvals are in place. Ensure correct resource and land owners have signed acceptable agreement for extraction and/or land access.	Prior to commencing civil works	Supervision Engineer
Laydown Sites, Crushing Plant and Stockpile Area	CESMP documents	• Approved and signed rental agreements should be submitted to SIRAP2 PST (if relevant) • Laydown and stockpile sites are at least 150m from waterways and 300m from any residential settlements. • Laydown areas established on pre-approved sites as per CESMP. • Water runoff management systems in place to approved standard as per CESMP. • Washdown areas have collection and treatments systems. • The sanitation treatment system is in place as per CESMP. • No runoff from laydown or stockpile sites are directed to waterways, CCAs or coastline. • Bunded secure storage area for the hazardous substance is established as per CESMP. • Hardstand areas are at least 150 from any CCA and any waterway. • Crushing plant is wet crusher. • Crushing plant is screened either by the quarry or by screening vegetation to minimise noise disturbance. • Water for crushing plant is sourced under permit.	Prior to commencing civil works	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
Concrete Production	CESMP documents	• Settlement tanks/ponds and diversion drains are in place as per CESMP. • Designated washdown are established in the bunded impermeable area with no permeation to ground permitted.	Prior to commencing civil works	Supervision Engineer
Importation of equipment and materials	Importation permits	• Approval to import material and equipment is given prior to material and equipment leaving country of origin. • Ensure bio-secure stockpile site it established with SIG Biosecurity Department.	Contractor(s) to organize prior to export from country of origin.	Supervision Engineer
CONSTRUCTION PHASE				
General	CESMP documents	• The contractor(s) is undertaking weekly monitoring and reporting using a monitoring form approved by Supervision Engineer in CESMP. • Community consultation is ongoing as per the ESMP. • Supervision Engineer is undertaking weekly monitoring and reporting.	Prior to commencing civil works Weekly	Supervision Engineer SIRAP2 PST Project Manager
Implementation of SEP and LMP	Contractor(s) Records	• As defined in the SEP and LMP.	Monthly	Supervision Engineers SIRAP2 PST NSS
Solid and hazardous waste and Agreement for waste disposal	Construction Contractor(s)'s records	• Approved Solid Waste Management Plan effectively implemented. • Waste collection at laydown area is secure, well signed and clean. • Hazardous waste is stored according to SWMP. • Good housekeeping around project sites and workers accommodation.	Documentation viewed prior to construction works starting Weekly as applicable to schedule of works.	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
		• All waste is disposed of offshore Contaminants of Concern (COC) documentation in place and reviewed. • Permits and/or agreements with local waste disposal providers and licensed recycling operators. • Inspection of disposal sites.		
Community infrastructure, health, and safety	At construction sites	• Approved Traffic Management Plan is under effective implementation. • Public signage of complaints procedure. • Signs and fences restrict or direct pedestrians and public where appropriate. • No damage to public or community infrastructure. • Dust suppression is effective. • Noise is within permissible limits. • Required signage is in place. • No works taking place at night or on Sunday within 500m of communities unless a prior agreement has been sought from the community.	Prior to commencing civil works Weekly	Supervision Engineer
Agreement for waste disposal	Contractor(s)'s records	• Permits and/or agreements with local waste disposal providers and licensed recycling operators. Inspection of disposal sites.	Documentation viewed prior to construction works starting Weekly as applicable to schedule of works.	Supervision Engineer
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.	Supervision Engineer
Waste disposal	At construction and quarry sites	• Inspection to ensure waste is not accumulating and evidence waste has been stockpiled for removal to licensed landfill, removal from Solomon Islands if required, recycling or returning to supplier.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
		• Inspections to ensure waste streams are sorted for re-use, recycling or waste to landfill.		
Water/Groundwater and soil pollution	At construction sites	• Appropriate Spill Prevention and Response Management Plan/kit in place for the waste area. • No visible spills on soil or uncovered ground. • All drainage, water treatment and soakage systems clear and fit for purpose. • Division bunding around large areas of vegetation clearance. • Revegetation occurring once works have finished at sites. • Vehicles are working in defined areas. • Workers sanitation facilities in good order and maintained as per design requirements. • Heavy machinery not used in times of heavy rain or when the ground is waterlogged. • Ensure all storage tanks are self-bunded. • Inspection of sites to ensure waste collection in defined area; SPRMP in place and workers trained at all SIRAP2 HIR locations. Complete spill kits available where hazardous substances sorted and handled. • Any encounters with potentially or confirmed contaminated soil are reported to MID and ECD. • Inspect soakage pits siting directly above any underlying aquifer (if present).	Weekly inspection as applicable to schedule of works and on receipt of any complaints	Supervision Engineer
		• Ground water monitoring as per parameters in ESMP. The parameters include pH, electrical conductivity, total petroleum hydrocarbons (for potential petroleum contamination), and total nitrogen (for potential sewage contamination), or as agreed with ECD and the SIRAP2 NSS.	Once midway through implementation and once prior to demobilisation	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
Dust	At construction sites, quarries and adjacent sensitive receptors	• Site inspections. Regular visual inspections to ensure stockpiles are covered when not in use and trucks transporting material are covered and not overloaded.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer
Noise	At work sites	• Site inspections to ensure workers wearing appropriate PPE when required. • Measurement of noise level (one hour LAeg) at closest social receptors (residences) to active work sites, construction camps and lay down areas not to exceed 45dB between 2200-0700 or 3dBA above background. Public signage detailing complaints procedure and contact people/person on display. • Noisy machinery is replaced or fixed as soon as problem arises or on instruction by Supervision Engineer.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer
Air pollution	At work sites	• Site inspections to ensure equipment and machinery operating without excessive emissions. If an issue is reported the contractor(s) is responsible for replacing or fixing the equipment to the satisfaction of Supervision Engineer.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer
Occupational Health and Safety	At work sites	• No civil works can commence until OHS Management is approved. • Approved OHS Management Plan being effectively implemented • Workers have access to and are using appropriate, PPE for the task. • All workers have undergone appropriate OHS training. • Proper briefing of staff before undertaking work activities. • Monthly OHS reporting being received from Contractor(s).	Weekly inspection as applicable to the schedule of works and on receipt of any complaints.	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
Storage of fuel, oil, hazardous substances etc.	At work sites and construction camp. Contractor(s)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. Checking that staff are trained on use of spill kits. • No evidence of spills on the ground. • Material Safety Data Sheets (MSDS) available at storage locations.	Weekly as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer
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 PPE.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer
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). Requirements in ESMP, LMP and OHS Management Plan implemented.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer
Construction workers and staff safety briefings (GBV any other community health and safety awareness)	At work sites	• Community, Health and safety awareness briefs including GBV, good hygiene.	Weekly team meetings as applicable to schedule of works an on receipt of any complaints	Supervision Engineer
Community / local business safety	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).	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer
Community grievances	At all locations	• Monitor the GRM database for the number and type of grievances and the average number of days to resolve a grievance.	Weekly	MID PST
Local business grievances	At and near work sites	• Monitor the GRM database for the number and type of grievances and the average number of days to resolve a grievance.	Weekly	At and near work sites

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
Laydown Areas and Stockpile Sites	CESMP documents	• Laydown areas established on pre-approved sites. • Laydown areas dust levels managed efficiently. • Traffic management plan correctly implemented at laydown site. • Water runoff management systems are operating correctly. • Dust management effectively implemented. • PPE present and correctly used. • Refuelling occurring over drip trays in dedicated areas. • No stockpiling within 150m of waterways. • Bunding is functional at stockpile site.	Prior to commencing civil works Weekly	Supervision Engineer
Extraction of Aggregates	CESMP documents	• QMP being effectively implemented. • Daily records of extracted volumes available for inspection. • No gravel being extracted from running water channels. • Gravel only being extracted from a predetermined area. • Machinery only working in defined areas approved in CESMP.	Prior to commencing civil works Weekly	Supervision Engineer
Workers Accommodation (if applicable)	CESMP documents	• The camp is clean and tidy. • Waste management is as per the Solid Waste Management Plan. • Food supplies are sufficient. • Workers Management Plan is effectively implemented. • First Aid kit is fully stocked and readily available.	Prior to commencing civil works Weekly	Supervision Engineer
Community grievances	At all locations	• Monitor the GRM database for the number and type of grievances and the average number of days to resolve a grievance.	Weekly	MID CPIU

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
Materials supply	Quarry and work sites	• Evidence that trucks are not overloaded and loads are covered e.g. complaints register, evidence of debris on the road.	Weekly visual inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer
OPERATION (Recommended for Consideration by MID)				
Drainage system operational	Roadside	• Inspection and clean out of open channel drainage.	After significant rain events and 6 monthly to remove sediment.	MID
Decommission and Rehabilitation of laydown site	Laydown	• All stockpiles have been removed from the laydown area and site rehabilitated and revegetated	After completion of construction	MID
Road infrastructure functional	Roads	• Inspect all newly installed bridge infrastructure for functionality.	After completion of construction	MID

8.3 Monitoring Plan Reporting

Throughout the construction period, the Supervision Engineer will include results of their weekly ESMP monitoring, along with the details of any incident report by the Contractor(s), in a monthly report for submission to the SIRAP2 PST who is responsible for submitting these monthly progress reports to the World Bank and MID. The format of the monthly report shall be agreed with all agencies but is recommended to include the following aspects:

- Description and results of ESMP monitoring activities undertaken during the month;
- Status of implementation of relevant environmental and social mitigation measures pertaining to the works;
- Key environmental problems or social issues encountered and actions taken to rectify problems;
- Summary of non-compliance notifications issued to the Contractor(s) during the month, actions taken and non-compliances closed out;
- Summary of complaints received, actions taken and complaints closed out;
- Key environmental and social issues to be addressed in the coming month;
- Training records along with gender and age disaggregated employment statistics;
- Health and Safety Indicators;
- Summary of consultation / stakeholder engagement undertaken;
- Copies of ESMP inspection reports (including LMP requirements);
- Summary of reported incidents, actions taken and recommendations for follow up; and
- Before project implementation photos, midway of project implementation photos, and completion photos of works

A day-to-day contract diary is to be maintained pertaining to administration of the contract, request forms and orders given to the Contractor(s), and any other information which may at a later date be of assistance in resolving queries which may arise concerning execution of the 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 responses, complaints and inspections completed.

There are monitoring requirements associated with this ESMP that are applicable once SIRAP2 has concluded, and normal operations have resumed. At this stage, there is no vehicle for continuing with safeguard monitoring during operations and it is recommended that this be incorporated into existing or new SIRAP2 processes. This ESMP should be updated to reflect the SIRAP2 environmental and social monitoring and reporting processes before the completion of the project.

SIRAP2 PST are responsible for quarterly progress reports to the WB. This quarterly progress report will include a section on safeguard compliance and issues. This section will cover (as a minimum):

- The overall compliance with implementation of the ESMP;
- Any environmental or social 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.

9 ESMP Implementation

MID is the implementing agency for the road component of SRIAP2.

The SRIAP2 Management Unit Steering Committee, comprised of representatives of different central and line agency members[22] will provide overall oversight of Project implementation and of the Project and PST, and to make Project strategic decisions. It will be critical to have someone from the Malaita Provincial Government involved. The SRIAP2 Steering Committee's key role will be to advise the SIG and respective Ministries on issues or concerns affecting project implementation and to propose remedial actions accordingly.

9.1 Roles and Responsibilities

The following are the roles and responsibilities:

- **SRIAP2 PST:** The SRIAP2 PST reports to the Permanent Secretary of MCA and MID and is responsible for the day-to-day project implementation on behalf of the SIG. The PST:
    - Acts on behalf of the client and works closely with MCA and all contracted parties to ensure that SIRAP2 objectives are delivered in a compliant manner consistent with client and MID requirements.
    - Conducting quarterly safeguard audits with the Supervision Engineer's Environmental Specialist and other staff
    - Responsible for working with MID and Supervision Engineer (and Contractor(s) where appropriate for CESMP) to implement consultation plans for the SIRAP2 bridge works.
    - Monitors and manages complaints/incidents logged via the GRM mechanism on the SIRAP2 website.
    - During the construction phase, PST receives reporting from the Supervision Engineer and shares these reports with the MID and ECD (to comply with permit monitoring requirements).
    - PST is responsible for managing recurring instances of non-compliance by the contractor(s) as they are reported by the Supervision Engineer and all instances of non-compliance by the Supervision Engineer. PST will conduct their own quarterly on-site audit of construction works, to supervise CESMP and ESMP implementation.
- **Supervision Engineer**: is responsible for the day-to-day oversight of the construction works for the project, including safeguard compliance. The Supervision Engineer is the only party who is contractually able to provide instruction to the Contractor(s). The Supervision Engineer will work closely with the Contractor(s) on a daily basis to ensure that the works are implemented in a compliant manner consistent with the detailed designs provided and the ESMP. They are responsible for:
    - Daily monitoring the Contractor(s)'s work for compliance with the CESMP and ESMP and providing safeguard monitoring results in their monthly reporting to PST. As part of their CESMP monitoring responsibilities, the Supervision Engineer will ensure that an experienced full time National Safeguard Specialist and a suitably qualified and experience International Safeguard Specialist is resourced to provide at least quarterly site inspections to the site and available for support at other times to

[22] The PST Steering Committee is proposed to be comprised of the following Central Agency Members: (i) Secretary to the Prime Minister of the Office of the Prime Minister; (ii) Permanent Secretary (PS) Ministry of Finance and Treasury; (iii) PS Ministry of Infrastructure Development; (iv) PS Ministry of Civil Aviation; (v) PS Ministry of Development Planning and Aid Coordination; (vi) PS Ministry of Provincial Government and Institutional Strengthening; and, (vii) Director of CAASI.

respond to incidents, non-compliances, review of CESMP, update of the ESMP and other tasks.

- Managing the review process of CESMPs for approval. The Supervision Engineer must ensure that all current safeguard instruments have been reviewed internally as well as by PST and WB and final approval from WB has been secured before disclosure.
- Updating the ESMP as necessary to reflect changes in the designs.
- Working with PST to provide meaningful input and direction into community consultations on the draft updated versions of the ESMP.
- Managing instances of noncompliance by the Contractor(s) and reporting all instances to PST. They are also responsible for escalating recurring instances of noncompliance by the Contractor(s) to PST for action.
- Managing and responding to all direct complaints/incidents received by their representatives as per the GRM process in Section 9.3 and reporting all instances to PST for inclusion into statistical database.

- **Contractor(s):** It is the contractor(s)'s responsibility to:
  - Resource their team with an experienced and qualified full time National Safeguard Specialist and an experienced and qualified International Safeguards Advisor who are resourced to make regular and ad hoc (as needed) site visits. Appendix K provide the minimum requirements for the international specialist who will form part of the Contractor(s)s key personnel in the bid document.
  - Allocate budget for implementing all requirements of the CESMP and employment of appropriate safeguard specialists.
  - Prepare and have cleared by the Supervision Engineer the CESMP in accordance with this ESMP.
  - Carry out the works in accordance with the CESMP.
  - Conduct daily and weekly safeguard inspections of the works to ensure compliance and reporting the results of these inspections to the Supervision 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 Supervision Engineer of any changes to works or methods that are outside the scope of the ESMP for updating.
  - Post all notifications specified in this ESMP at the site entrance.
  - Report all environmental and OHS incidents to the Supervision Engineer for any action.

9.2 Institutional Capacity

9.2.1 Project Support Team

The SIG has delegated the delivery and management of SIRAP2 to the PST which has been resourced with personnel specifically tasked to manage project implementation. As such, the PST carries much of the institutional capacity required by the SIG to implement the project and to monitor the works for compliance. The PST has been resourced with an experienced National Safeguards Specialist who

is responsible for monitoring for compliance with the ESMP, World Bank policies and Solomon Island legislation. The PST will also recruit an additional National Environmental and Social Specialist (NES) based in Western Provinces. The SIRAP2 PST is also able to recruit an additional CLO for the Western Provinces if needed.

For any additional support in areas of expertise that may be required by PST, the SIRAP2 International Safeguards Specialist is tasked with either providing that support directly or assisting with any procurement of additional expertise or capacity that may be required.

9.2.2 Environment and Conversation Department

Review process: the ECD have the technical capacity within their department to review and assess PER submissions for DC. However, they are understaffed, and this can delay the review process for submissions. It is advised that prior to the submission of the SIRAP2 PERs, the SIRAP2 PST liaise with the ECD to arrange an external reviewer for the review process, funded by the proponent.

Monitoring: Consultations with the ECD have revealed that although the ECD has monitoring responsibilities for development consents they issue, they often lack the financial resources to monitor projects off Guadalcanal. The SIRAP2 National Safeguard Advisor should liaise with ECD to ensure that the monitoring requirement are integrated with the ESMP monitoring to support compliance with the development consents.

9.2.3 Civil Works

Other parties to this ESMP who have implementation or monitoring responsibilities (Supervision Engineer, Contractor(s)) are required to be resourced with suitably experienced and qualified Safeguards Specialists.

It is the responsibility of the Contractor(s) and Supervision Engineer to ensure that they allocate budget lines to have the necessary tools and equipment for the mitigation and monitoring measures as stipulated in this ESMP.

A budget is being developed for the proposed training and capacity development activities relating to the prevention of HIV, GBV, Human Trafficking and CAE and will be included in updated versions of this ESMP prior to tender.

9.2.4 Training

The SIRAP2 PST shall undertake training for key stakeholders and project team members to ensure effective implementation and technical understanding of the ESMP requirements.

Areas recommended for training include the following:

- World Bank's Safeguards Policies, in particular, those triggered and relevant to the Project;
- Project responsibilities to GBV prevention and training;
- Roles and responsibilities of different key agencies in safeguards implementation;
- How to effectively integrate the ESMP into project management, implementation, monitoring, and reporting;
- Management of the GRM;
- How to facilitate meaningful community consultations;
- Monitoring for ESMP compliance; and
- Safeguard reporting requirements.

SIRAP2 PST will supply updates and status of training activities in their regular reports.

9.3 Grievance Redress Mechanism

During the course of these proposed works, it is possible that people may have concerns or grievances with the project's performance which may include any aspect of the implementation or an activity or a component of the project. Issues may occur during construction and again during operation. Any concerns will need to be addressed quickly and transparently, and without retribution to the affected person (AP) or group of people involved.

Complaints can be made through different channels, such as the traditional local practices (e.g. village chiefs), online, phone, in-person, the local GBV/Human Trafficking/CAE Service Provider, the manager(s), or the Police. Complaints should be able to be made in different ways such as online, via telephone or mail, or in person. Anonymity should be ensured if the complainant so desires it, especially about GBV/Human Trafficking/CAE.

This GRM has been developed to satisfy both SI legislative and WB GRM requirements as well as being developed in line with the Country Safeguard Systems. If there were a need to use the GRM then the following process is to be used.

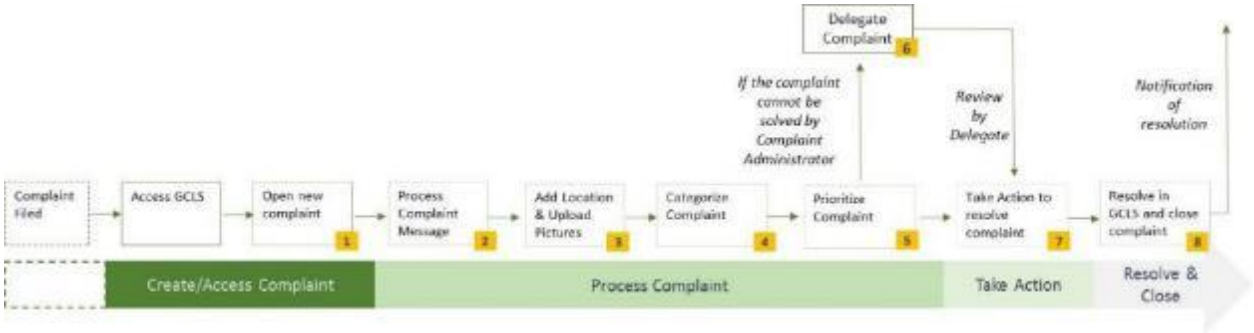
Complaints: Minor concerns or complaints that are given verbally to the Contractor(s) or Supervision Engineer on site, the process would commence with an attempt to sort out the problem directly at the subproject level between the Contractor(s) and the concerned individual or community.

Most complaints arise during construction are expected to be minor complaints concerning dust or noise that should be able to be resolved quite easily. All complaints arriving at the Contractor(s)'s Site Office are to be forwarded to the Contractor(s)'s community liaison personnel and entered into the complaints register that is maintained by the Contractor(s) and kept at the site. Details recorded will include dates, names, contact addresses and reasons for the complaint. A duplicate copy is given to the AP for their record at the time of registering the complaint. The register will show when the issue is to be dealt with and who has been directed to deal with the complaint, the date that the AP was informed of the decision and how the decision was conveyed to the AP. The register is then signed off by the person who is responsible for the decision and dated accordingly.

If immediate resolution is achieved and the complainant is satisfied, the matter will be recorded in the site diary and reported in the regular monthly report submitted and considered closed.

Grievances: If the issue cannot be resolved at the complaint level then it will be considered to be a grievance and will be addressed by being referred by the Contractor(s) or Supervision Engineer to the National Safeguards Advisor within the SIRAP2 PST. The NSA will log it into the 'Grievance and Complaints Logging System' (GCLS) database for tracking and reporting on resolution. In accordance with the World Bank's 'Citizen Engagement' commitments under IDA 17, key indicators from the GRM are published online at the SIRAP2 project website.

All complaints must be acknowledged within 24hrs. The following procedure is followed to address complaints:



If it is impossible to resolve the complaint, or the complainant is not satisfied with the resolution, the case may be first escalated to the Permanent Secretary (PS) of MCA who will appoint a third-party arbitrator to form part of a GRM committee. If the AP is dissatisfied with the recommendation of the GRM Committee and subsequent determination from the PS of the MCA, the AP may appeal to the court. This will be at the AP's cost but if the court shows that the PS has been negligent in making their determination, the AP will be able to seek reimbursement of costs.

GCT: The SIRAP2 Code of Conduct and Action Plan for the Prevention of GBV, Human Trafficking and CAE detail the specific GRM processes and responsibilities. The project shall establish a 'GBV Compliance Team' (GCT). The GCT will include, as appropriate to the project, at least four representatives as follows: the SIRAP2 PST National Safeguards Specialist, an appropriate Contractor(s)'s representative, the Supervision Engineer, and a representative from the GBV/Human Trafficking/CAE service provider.

WB Level Resolution: In addition to the above project level GRM, communities and individuals who believe that they are adversely affected by a WB-supported project may submit complaints to the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns.

Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the WB's attention, and WB Management has been given an opportunity to respond.

For information on how to submit complaints to the World Bank's corporate GRS, please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

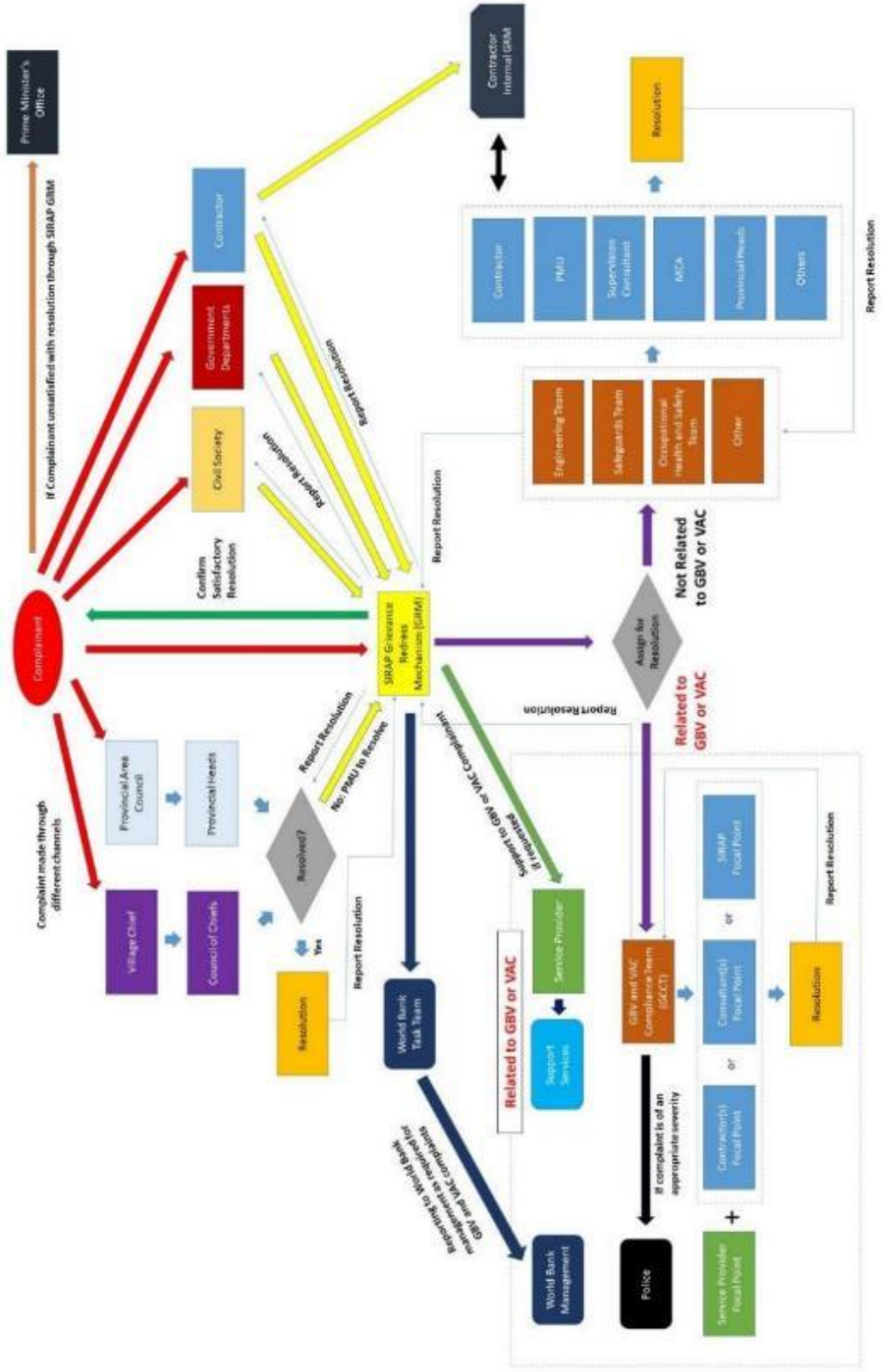


Figure 14: Flow chart for grievance management under SIRAP

10 Contingency Planning

The SIRAP2 Project Manager is the contact person for emergency situations that may arise during the implementation of the SIRAP2 works on Malaita. The SIRAP2 PM will be available 24 hours a day, seven days a week, and has a delegated authority to stop or direct works. In the event of an environmental emergency, the procedures outlined below are recommended for SIRAP2 to consider for implementation.

As part of their CESMP, the Contractor(s)'s are required to prepare a Contingency Plan encompassing tsunami, earthquake, 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)'s staff should undergo training/induction to the plan.

While it is preferable to undertake construction works outside of the wet season, it is probable that storm and heavy rain events will occur while works are underway.

The Contractor(s) 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 Contractor(s)s 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 Supervision Engineer if there are any concerns associated with the measures in place.

Appendix A: CESMP Monitoring Checklist

PROJECT:	Solomon Islands Roads and Aviation Project	**IMPLEMENTING AGENCY:**	
DATE:		**CONTRACTOR(S):**	
PREPARED BY:		**SUPERVISION CONSULTANT**	
DISTRIBUTION LIST:			

Inspection Participants: (insert names and positions

CESMP Items (edit as necessary based on approved CESMP)	**Applicable**		**Compliance**	**Issues**	**Status (R)/(O)**	**Action Required/Taken**	**Target/ Actual Date**
	Yes	**No**					
1. Mitigation & Management Measures: Construction Phase							
General: The contractor(s) is undertaking weekly monitoring and reporting using a monitoring form approved by Supervision Engineer in CESMP.							
Solid and Hazardous Waste: - Approved Solid Waste Management Plan effectively implemented. - Waste collection at laydown area is secure, well signed and clean. - Hazardous waste is stored according to SWMP. - Good housekeeping around project sites and workers accommodation. - All hazardous waste is disposed of offshore - Contaminants of Concern (COC) documentation in place and reviewed.							

CESMP Items (edit as necessary based on approved CESMP)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
Community Infrastructure, health and safety: - Approved Traffic Management Plan is under effective implementation - Public signage of complaints procedure - Signs and fences restrict or direct pedestrians and public where appropriate. No damage to public or community infrastructure - Dust suppression is effective Noise is within permitted limits Required signage is in place							
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.							
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							

CESMP Items (edit as necessary based on approved CESMP)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
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							
Noise: - Workers wearing ear protection as required - Noise level maximum of 45dB between 2200-0700 - No complaints received relating to noise							
Air Pollution: - Equipment operating without excessive emissions							
Fuel and Oil 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							
<u>OHS</u> - Workers have access to and are using appropriate, PPE for the task. - All workers have undergone appropriate OHS training. - Proper briefing of staff before undertaking work activities.							
TMP Implementation: - Traffic Management Plan (TMP) under effective implementation							

CESMP Items (edit as necessary based on approved CESMP)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
Community and Local Business Consultation: - Public signage of complaints procedure - Signs and fences restrict or direct pedestrians and public where appropriate.							
Materials Supply: - Quarry establishment and operations in fully compliance with ESMP - All quarries licensed to supply materials - All imported materials with appropriate biosecurity clearances							
Laydown 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 - Refueling occurring over drip trays in dedicated areas - No stockpiling within 100m of waterways Bunding is functional at a stockpile site							
Workers Camp (if applicable): - Camp established in accordance with Code of Practice in ESMP 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, Human Trafficking, CAE and other information available							

CESMP Items (edit as necessary based on approved CESMP)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
Monitoring - Weekly safeguards compliance report completed							

Compliant, Minor Non-Compliance, Significant Non-Compliance Status: (R) Resolved Issues, (O) Ongoing Issues

Notes:

Required Actions:

Environmental Specialist: **Signed:** **Date:**

Photos (attach as appropriate)

Appendix B: Codes of Practice and Guidelines

- Solid Waste Management Plan
- OHS Management Plan
- Worker and Labour Influx Management Plan
- Quarry Management Plan

Other Guidelines

IFC Workers Accommodation Standards and Guidelines[23]

Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced Labour Influx[24] World Bank Good Note Practice: Environment & Social Framework for IPF Operations, Road Safety[25]

WB General ESH Guidelines[26]

WB EHS Guidelines for Construction Materials Extraction[27]WB EHS Guidelines for Ports, Harbours and Terminals (for construction works along waterways)[28]

WB COVID-19 Guidance [29]

[23] https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_gpn_workersaccommodation

[24] http://pubdocs.worldbank.org/en/497851495202591233/Managing-Risk-of-Adverse-impact-from-project-labor- influx.pdf

[25] http://pubdocs.worldbank.org/en/648681570135612401/Good-Practice-Note-Road-Safety.pdf

[26] https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainab ility-at-ifc/publications/publications_policy_ehs-general

[27] https://www.ifc.org/wps/wcm/connect/dad17995-66be-4280-86da-b438cf9fbefc/Final%2B-%2BConstruction%2BMaterials%2BExtraction.pdf?MOD=AJPERES&CVID=jkC-EN.&id=1323162191491

[28] https://www.ifc.org/wps/wcm/connect/ddfac751-6220-48e1-9f1b-465654445c18/20170201-FINAL_EHS+Guidelines+for+Ports+Harbors+and+Terminals.pdf?MOD=AJPERES&CVID=lD.CzO9

[29] http://pubdocs.worldbank.org/en/324831581700447537/COVID-19-Guidance-for-Contractor(s)s-CO-Final.pdf

Solid Waste Management Plan Guidelines

The key objectives of this solid waste management plan (SWMP) guideline is to assist the Contractor(s) to develop a SWMP that:

1. Maximize the amount of material, which is sent for reuse, recycling or reprocessing.
2. Minimize the amount of material sent to the landfill.
3. Satisfies the national waste management legislations.
4. Satisfies the EHS requirements of the World Bank

When developing, and implementing a SWMP the following key elements should be considered:

1. Waste streams: identify which waste streams are likely to be generated and estimate the approximate amounts of materials.

Undertake inventory of materials that can be reused, recycled or recovered from the construction site:

- Specific types of materials: a full list of options is provided in the assessment table below.
- Amount of material expected.
- Possible contamination by hazardous materials like asbestos or lead: these materials will limit reuse/recycling options and require special disposal.

Waste and/or Recyclable Materials		Destination		
		Reuse and Recycling		Disposal
Possible Materials Generated	Estimated Volume (m3) or Area (m2) or Weight (t)	On-site (How will materials be reused and/or recycled on site)	Off-site (Specify the proposed destination and/or recycling facility)	Specify the disposal site and permit if required.
Timber (specify type)				
Wood waste (e.g., MDF, plywood)				
Cardboard				
Ferrous materials (e.g., iron, steel)				
Nonferrous materials (e.g. copper wiring)				
Concrete				
Roofing tiles				
Ceramic tiles				
Gravel				
Gypsum board (e.g., drywall)				
Plaster				
Plumbing fixtures and fittings				
Carpet and underlay				
Stone				
Asphalt				
Glass				
Sand/fill				
Topsoil				

Green waste				
Asbestos				
Fluorescent light bulbs				
Hazardous materials (e.g., oils, paints, solvents)				
Plastics				
PVC				
Co-mingled recyclables (e.g. paper, cans, glass and plastic bottles, carboard, etc.)				
General waste (e.g., food waste, contaminated food packaging, non-recyclable plastics)				
Mixed waste				

2. Services: identify an appropriately equipped waste management contractor(s) who will provide compliant services for disposal of the waste streams generated.
3. On-site: understand how the waste management system (sorting and storage) will work on-site, including bin placement and access.

Determine storage requirements (separate bins or co-mingled), things to consider include:

- Ease of use: ensure that containers are easily accessible by workers and that storage areas are clearly sign posted
- Safety: ensure that the containers and storage can be managed safely, including limiting public access to the site and protecting against FOD
- Hazardous waste materials storage
- Aesthetics: ensure that the site appears orderly and will not raise concern from local residents or businesses – for example screening for dust and litter containment and daily collection of windblown material
- Establish a collection/delivery plan in collaboration with waste contractor(s)s for waste and recyclable materials generated on-site.

4. Clearly assign and communicate responsibilities: ensure those involved in the project are aware of their responsibilities in relation to the construction waste management plan.
5. Training: be clear about how the various elements of the WMP will be implemented.
6. Monitor: to ensure the plan is being implemented, monitor on-site as per the ESMP monitoring plan.

OHS MANAGEMENT PLAN GUIDELINES

1. Objective

The objective of this Sub-plan is to provide guidance on the:

- key principles involved in ensuring the health and safety of workers is protected;
- preparation of Health and Safety Sub-plans and associated Job Safety Analyses (JSA); and

- implementation of Health and Safety Sub-plans during project implementation.

The key reference document for this Guideline is the World Bank Group's *Environmental, Health, and Safety (EHS) Guidelines* (April 2007) together with the relevant Industry Sector EHS Guidelines available at www.ifc.org/ehsguidelines.

2. Principles

Employers must take all reasonably practicable steps to protect the health and safety of workers and provide and maintain a safe and healthy working environment. The following key principles are relevant to maintaining worker health and safety:

2.1 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.

2.2 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.

2.3 Training and supervision

Each employer must take all reasonably 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 extend to the correct use of PPE and providing employees with appropriate incentives to use PPE.

2.4 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.

2.5 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.

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. 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;
- prioritising 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.

3.1 Job Safety Analysis

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.

This Guideline includes a template for a JSA that must be completed and included as an attachment to the Health and Safety Sub-plan.

4. Implementation

4.1 Documentation

A Health and Safety Plan must be prepared and approved prior to any works commencing on site. The H&S Plan must demonstrate the Contractor(s)'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, contractor(s)s, 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 EH&S Guidelines and the relevant country health and safety legislation.

4.2 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.

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.

4.3 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.

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.

5. 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.

All reported occupational accidents, occupational diseases, dangerous occurrences, and incidents together with near misses should be investigated with the assistance of a person knowledgeable and competent in occupational safety. The investigation should:

- Establish what happened.
- Determine the cause of what happened.
- Identify measures necessary to prevent a recurrence.

Job Safety Analysis (JSA)

Add Organisation Name:

Ref: Version:

Business details			
Business name:			
ABN:		Contact person:	
Address:		Contact position:	
Contact phone number		Contact email address:	
Job Safety Analysis details			
Work activity:		Location:	
Who is involved in the activity:		This job analysis has been authorised 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.

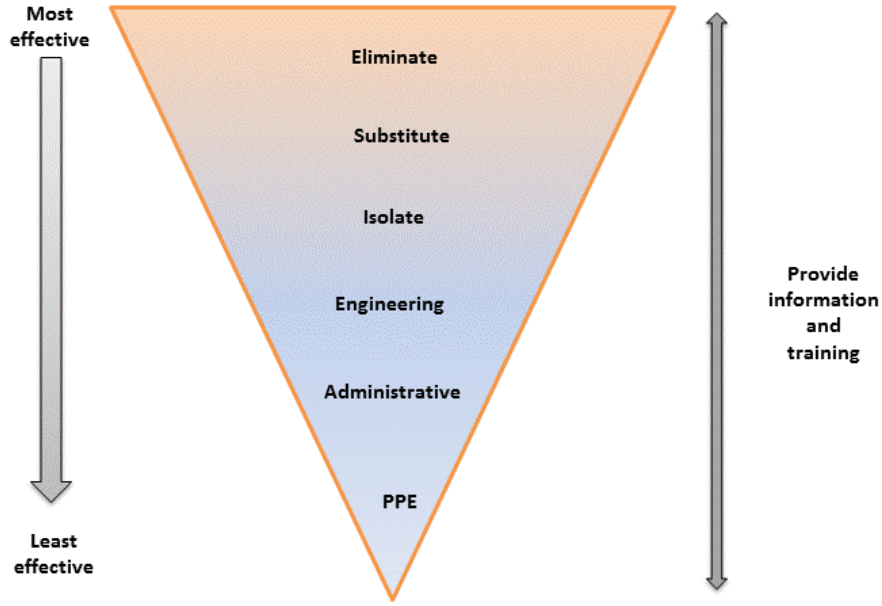
1. **Eliminate** – if it is possible, the hazard should be removed completely. For example, get rid of dangerous machines.

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

Review number: Version:

Review number: Version:

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:								

Worker Planning and Management Guidelines

GENERAL

The Workers' Camp Management Plan will be compliant with the specific prescriptions of the ESMP.

OBJECTIVES

To provide guidelines on the recruitment of workers and the selection, development, management, maintenance and restoration of workers accommodation camp sites in order to avoid or mitigate against significant adverse environmental and social effects, both transient and permanent.

WORKER RECRUITMENT

The Contractor(s) is/are required to minimise the number of skilled workers that are recruited from overseas. No unskilled labour will be sourced from overseas. The Contractor(s) will maximise the number of skilled and unskilled workers that are recruited from the community.

The Contractor(s) will be required to provide justification for any skilled workers that the wish to recruit from overseas and explain why this position cannot be filled locally on Malaita Island or Honiara.

WORKERS CAMP FACILITIES

All facilities in the Workers Camp must be compliant with the stipulations of the ESMP and the IFC Workers Accommodations and Standards. The camp shall be provided with the following minimum facilities:

- Canteen, dining hall and dormitories as required shall be constructed of suitable materials to provide a safe healthy environment for the workforce and which facilitate regular cleaning and the provision of ventilation and illumination.
- Ablution block with a minimum of one water closet toilet, one urinal and one shower per 10 personnel engaged either permanently or temporarily on the project. Separate toilet and wash facilities shall be provided for male and female employees.
- A sick bay and first aid station.
- Sewage collection facilities to allow for the treatment of black and grey wastewater discharge from toilets, washrooms, showers, kitchens, laundry and the like. The management of all camp wastewater water shall be as prescribed in the ESMP.
- All camp facilities shall be maintained in a safe clean and or appropriate condition throughout the construction period.
- The contractor(s) shall provide, equip, and maintain adequate first aid stations and erect conspicuous notice boards directing where these are situated and provide all required transport. The contractor(s) shall comply with the government medical or labour requirements at all times and provide, equip and maintain dressing stations where directed and at all times have experienced first aid personnel available throughout the works for attending injuries.
- Throughout the period of the contract the employer, the engineer, or their representatives shall have uninterrupted access to and from the camp for the purpose of carrying out routine inspections of all buildings, facilities, or installations of whatever nature to ensure compliance with this specification.

WORKERS' CAMP OPERATIONS

- The Contractor(s) will be required to provide calculations of the amount of freshwater needed for the number of workers accommodated at the camp and is to demonstrate how they will provide this water.
- The Contractor(s) will be required to provide adequate provisions for the workers for the duration of the project so as not to deplete the available food sources of the community.
- All wastewater, solid waste, freshwater usage, noise levels, handling and storage of hazardous materials shall be as prescribed in the ESMP.

MANAGEMENT OF OFF DUTY WORKERS

- The Contractor(s) will prepare a specific Code of Conduct to describe the expected behaviours of their project worker in relation to the local communities and their social sensitivities.
- The Contractor(s) is to ensure that all overseas project staff undergo a cultural familiarisation session as part of their induction training. The purpose of this induction will be to introduce the project staff to the cultural sensitivities of the local communities and the expected behaviours of the staff in their interactions with these communities. The MICRO PMU shall provide to the Contractor(s) a list of approved service providers which shall include recognized NGOs and others for conducting this training.
- The Contractor(s) is to stipulate the conditions under which visitors may attend the workers camp. Strict visiting hours should be enforced, and all visitors will be required to sign in and out of the worker's camp.
- The Contractor(s) shall ensure that basic social/collective rest spaces are provided equipped with seating within the Workers Camp to help minimise the impact that the workers would have on the leisure and recreational facilities of the nearby communities. Provisions should also be made to provide the workers with an active recreation space within the camp.

WORKERS' CAMP MANAGEMENT PLAN

A Workers' Camp Management Plan shall be submitted as an annex to the CEMSP. The Workers Camp Management Plan shall describe how this document, the ESMP and the IFC Guidelines shall be implemented in the following:

- Recruitment strategy
- Accommodation
- Canteen and dining areas
- Ablutions
- Water supply
- Wastewater management system
- Proposed power supply
- Full Code of Conduct for Workers
- Recreational/leisure facilities for workers
- Visitors to the Workers Camp
- Interactions with the local communities

QUARRY MANAGEMENT SUB-PLAN GUIDELINE

1. Objective

The objective of this Sub-plan is to prescribe the safety requirements for the development and operation of quarries as well as to define procedures and works that shall be used to mitigate against adverse environmental effects.

2. Planning and Design

2.1 Quarry Sites

During the planning of a development project which will involve earthworks, potential quarry sites shall be identified. The potential sites shall be discussed during public consultations in regard to the project.

2.2 Land Acquisition

The Contractor(s) will make lease arrangements with the titled land owner prior to any quarrying. The lease agreement must be approved by the Supervision Engineer and included in the CESMP. The government issued land lease rates shall be applied and all lease agreements will be entered into knowingly and voluntarily.

The consultant shall define potential quarry sites that may be used for the construction of the project. Such potential sites shall be identified on plans drawn to an appropriate scale and the plans shall be displayed and discussed during public consultations.

2.3 Site Plans

Site plans for quarry development shall be included in drawings issued for tender and the specification shall define the requirements of the contract in relation to quarry development and operation. The following design directives shall apply:

It is desirable that no quarry boundary is located within 500 meters of a public area or town or village nor within 300 meters of any isolated dwelling. The designer shall provide site plans of potential quarry sites in the tender documents. Such plans shall show existing level contours, access road, natural watercourses and other relevant topographical features.

The area defined for quarry operation shall be based on the volume of aggregate to be quarried and hence the extent of quarry operation. It shall also provide the area necessary for stockpiling stripped overburden, the establishment of a crusher and screening plant, the stockpiling of crushed aggregate and the installation of stormwater cut off drains, silt retention ponds and staff amenities.

3. Construction

3.1 Quarry Management Plan

Prior to commencing any physical works on site, a quarry development plan shall be prepared and approved by the Engineer and ECD. The quarry management plan shall have due regard for the following:

- All operations shall comply with the laws of the Solomon Islands.
- Show the extent of overburden stripping and the stockpiling of same for later site restoration.

- Show the details and location of surface water drainage from the quarry site and the silt retention pond that will be constructed to settle silt and soil contaminated water prior to its discharge to a natural water course.
- Show details of catch drains installed to intercept overland flow of surface water to prevent its discharge into the quarry area.
- State safety precautions to be implemented.
- Show facilities such as guardhouse, amenities block and other facilities to be constructed.
- Show location of aggregate stockpiles.
- List plant and equipment to be used in the development and operation of the quarry.
- Show the site of the proposed magazine for the storage of explosives.

On no account shall physical works be commenced for development of the quarry until an agreed Quarry Management Plan has been submitted to the Engineer. Thereafter all quarry operation shall be the entire responsibility of the contractor(s) and shall be carried out in terms of the agreed management plan.

3.2 Safety Provisions

The following provisions shall be made in the operation of any quarry for the safety of all employees or persons on site:

- A daily register is to be maintained identifying all personnel who are engaged in or about the quarry.
- All persons engaged in the operation of the quarry shall be trained and have sufficient knowledge of and experience in the type of operation in which they are engaged.
- All persons engaged in the operation of the quarry shall be adequately supervised.
- Approved lighting shall be provided in inside working places where natural lighting is inadequate to provide safe working conditions.
- All personnel engaged in quarry operations shall wear a protective helmet of approved type at all times when on the quarry site.
- All personnel shall wear protective footwear while engaged in quarry operations.
- All employees engaged in operations on a quarry face at a height greater than 1.5 meters above the level of the quarry floor or bench floor shall be attached at all times to a properly secured safety rope by means of a safety belt.
- All persons whose duty it is to attend to moving machinery in or about any quarry shall wear close fitting and close fastened garments. Their hair shall be cut short or securely fixed and confined close to their head.
- All boilers, compressors, engines, gears, crushing and screening equipment and all moving parts of machinery shall be kept in a safe condition. Every flywheel and exposed moving parts of machinery shall be fitted with safety screens or safety fenced as appropriate.
- All elevated platforms, walkways and ladders shall be provided with adequate hand or safety rails or cages.
- Machinery shall not be cleaned manually while it is in motion nor oiled or greased while in motion.

Should any of the above safety measures be ignored or inoperative at any time then the engineer shall direct that quarry operations cease until all safety measures are provided and are in operating order.

3.3 Provision of First Aid

At every quarry there shall be provided the following first aid equipment:

- A suitably constructed stretcher with a warm, dry blanket.
- A first-aid box equipped to a standard acceptable to the Ministry of Health.

The quarry manager shall at least once every working week personally inspect the first-aid equipment to ensure that it complies with the requirements of this specification. Any supplies used from the first-aid box shall be replaced forthwith.

A person trained in first aid to the injured shall be available at the quarry during all operational periods of whatever nature.

3.4 Health Provisions

At every quarry a sufficient number of toilets and urinals shall be provided for the use of employees and shall be properly maintained and kept in a clean condition.

At every quarry a supply of potable water, sufficient for the needs of the persons employed, shall be provided. If persons are employed in places remote from the source of water supply, suitable clean containers of potable water shall be provided for their use.

Suitable facilities for washing shall be provided and maintained in a clean and tidy condition to the satisfaction of the employer, and those facilities shall be conveniently accessible for the use of persons employed in or about the quarry.

3.5 Quarry Manager

A manager who is experienced in all aspects of quarry operation and in particular safety procedures shall control every quarry. The manager shall be personally responsible for ensuring that all safety facilities are available and that safety procedures are followed.

The contractor(s) shall nominate an experienced quarry manager in the submission of the tender for the works. The quarry manager shall have a recognized current “A” grade quarry manager’s surface certificate and a recognized current quarry shot firer’s certificate.

In the submission of the quarry manager’s credentials with the tender documents, the contractor(s) shall ensure that the credentials include certified true copies of the following documents:

- Grade quarry manager’s surface certificate
- Quarry shot firer’s certificate.
- References from previous clients or employers demonstrating experience in:
    - The design and layout of quarries including the layout of benches, faces, access roads, drainage and crushing plant.
    - The method of working quarry faces with particular reference to face stability and the safety of persons employed in or about the quarry
    - The safety of the public at large
    - The provision for and application of first aid.

The quarry manager’s duties shall include:

- daily, within two hours immediately before the commencement of the first working shift of the day in any part of the quarry, inspect every working place and travelling road, and all adjacent places from which danger might arise, and shall forthwith make a true report of the

inspection in a record book kept for the purpose at the quarry. The record book shall be accessible to the engineer and the persons employed in or about the quarry.

- at least once in every 24 hours examine the state of the safety appliances or gear connected with quarrying operations in the quarry and shall record the examination in the record book.
- once in each week carefully examine the buildings, machinery, faces, benches, and all working places used in the quarrying operations, and shall forthwith after every such examination record in writing in the record book his opinion as to their condition and safety and as to any alterations or repairs required to ensure greater safety of the persons employed in the working of the quarry. The manager shall then ensure that any such alterations or repairs are carried out.

3.6 Vegetation

Vegetation shall be stripped from the proposed quarry development area. Before stripping any vegetation, a survey shall be undertaken to determine the presence of any rare plant species. All necessary steps shall be taken to save plants classified as important. Care shall be taken to avoid damage to any vegetation outside the defined quarry area. On no account shall burning of vegetation be permitted.

3.7 Overburden Stripping

Overburden stripped from any proposed quarry area shall be stockpiled clear of the quarry operation to be used for site restoration at the completion of operations. Stockpiles shall be shaped and smoothed to minimize ingress of rainwater.

Surface water runoff from stockpiles shall be intercepted by perimeter drains which shall be discharged to silt retention ponds.

Batters in overburden excavation shall be sloped to ensure they are safe and stable against failure.

The maximum height of any batter in overburden shall be 3 meters. Any higher batter in overburden shall have an intermediate bench at least 3.5 meters in width. Such benches shall be shaped and drained.

3.8 Blasting Operations

Blasting operations shall be conducted in a manner that will not cause danger to life or property.

All explosives shall be stored in purpose built locked magazines on a site within the quarry boundary but remote from blasting operations. Detonators shall be stored in a separate locked magazine but similarly sited.

A blasting operations manual shall be prepared for any quarry and such manual, which shall be maintained by the quarry manager, shall stipulate procedures for at least the following:

- Operation of magazines for the storage of explosives and for the storage of detonators.
- The quantity of explosive that may be removed from a magazine at any one time.
- The procedure for quarry explosive cases.
- Persons allowed to fire shots.
- Explosives to be carried in securely covered containers.
- Tamping of explosives.
- Diameter of drill holes.
- Time when charges are to be fired.
- Detonation delay.

- Firing warnings.
- Blasting shelters.
- Treatment of misfired charges
- Inspection of work site after each detonation by the quarry manager or an approved person appointed in writing by the quarry manager.

A person specially appointed in writing by the quarry manager for the purpose shall be in charge of every magazine and shall have keys to one of the locks. That person shall be responsible for the safe storage of explosives contained therein, for the distribution of explosives therefrom, and for the keeping of accurate records of stocks and issues in a book provided for the purpose. A second person, appointed by the employer shall have keys to the second lock. Both persons shall be present to unlock the magazine and note the removal of stock and ensure both locks are subsequently secured.

- Explosives shall be used in the same order as that in which they were received into the magazine.
- Naked lights shall not be introduced into a magazine or into any working place in a quarry where explosives are temporarily stored.
- Explosives shall not be taken from a magazine in quantities exceeding that required for use during one shift, and any surplus explosives shall be returned to the magazine at the end of that shift.
- No case or carton containing explosives shall be opened in the storage area of any magazine.
- Instruments made solely of wood, brass, or copper shall be used in opening cases or cartons of explosives, and the contractor(s) shall provide and keep suitable instruments for that purpose.
- The preparation of charges and the charging, tamping, and firing of all explosive charges in or about a quarry shall be carried out under the personal supervision of the quarry manager.

3.9 Dust Suppression

Operation of any quarry shall incorporate dust suppression measures. Dust generation during blasting operations shall be minimized. All haul roads shall be regularly dampened by spray bars fitted to water tankers or similar systems in order to minimize dust generation by traffic movements. Crushers, screens and stockpiles shall be dampened by appropriate water sprays to minimize dust generation.

4. Rehabilitation

A realistic Rehabilitation Plan will be developed, and rehabilitation planning shall begin as early as possible in the quarry life cycle in order to be fully effective. Once objectives are set, rehabilitation activities should be defined and performed in order to achieve these goals.

The objectives of a rehabilitation plan should be based upon the specific characteristics of the extraction site and should reflect:

- Legislative requirements
- Health and safety considerations
- Environmental and social characteristics of the quarry and surrounding area
- Biodiversity of area
- Ecosystem services provided within the site’s ecological boundaries.

- Operating plan for the quarry – technical feasibility of the rehabilitation objectives will be affected by the manner in which the quarry operates.
- Status of the quarrying area of existing operating site
- Characteristics of the deposit (geology and hydrology)
- Impacts arising from operation of the site.
- Post closure land use plan

Rehabilitation plans should adopt the following structure:

a. Context
b. Objectives
c. Action plans
d. Prioritized actions and schedule
e. Monitoring and evaluation
f. Rehabilitation and post-closure costs
g. Roles and responsibilities
h. Compatibility with biodiversity

5. Consent

5.1 Consent Required

In accordance with the Mines and Minerals Act 1996) and any other relevant legislation, any person who engages in quarry development or operations shall first obtain Building Materials Permit (BMP) for the proposed activity.

5.2 Application for Consent

Permit applications shall be on an approved form and shall be submitted by to the Commissioner. Applications shall be accompanied by such other documents as ECD may require. The Commissioner must not issue or renew any permit unless a copy of the application has been exhibited for a period of not less than 30 days at the headquarters of the area council of the local government council responsible for the land which is the subject of the application.

5.3 Special Conditions

The Commissioner may, by notice served on the applicant, require further information in respect of the application as the Commissioner considers relevant or necessary. The applicant must comply with the notice.

Appendix C: SIRAP2 Code of Conduct and Action Plan for the Prevention of GBV and SAE

CODES OF CONDUCT AND ACTION PLAN FOR IMPLEMENTING

ESHS AND OHS STANDARDS, AND

PREVENTING GENDER BASED VIOLENCE ON

PACIFIC ISLAND COUNTRY TRANSPORT PROJECTS

Background

The purpose of these *Codes of Conduct and Action Plan for Implementing ESHS and OHS Standards, and Preventing Gender Based Violence* is to introduce a set of key definitions, core Codes of Conduct, and guidelines for application on World Bank financed transport projects in Pacific Island Countries (PICs) that:

i. clearly define obligations on all project staff (including sub-contractor(s)s and day workers) with regard to implementing the project's environmental, social, health and safety (ESHS) and occupational health and safety (OHS) requirements, and;
ii. help prevent, report and address Gender Based Violence (GBV) within the work site and in its immediate surrounding communities.

The application of these Codes of Conduct will help ensure the project meets its ESHS and OHS objectives, as well as preventing and/or mitigating the risks of GBV on the project and in the local communities.

These Codes of Conduct are to be adopted by all those working on the project—including subcontractor(s)—and are meant to:

i. create awareness of the ESHS and OHS expectations on the project;
ii. create common awareness about GBV and:
    (a) ensure a shared understanding that GBV has no place on the project; and,
    (b) create a clear system for identifying, responding to, and sanctioning GBV incidents.

Ensuring that all project staff understand the values of the project, understanding expectations for all employees, and acknowledging the consequences for violations of these values, will help to create smoother, more respectful and productive project implementation thereby helping ensure that the project's development objectives will be achieved.

Definitions

The following definitions apply:

ESHS and General Project

- **Environmental, Social, Health and Safety (ESHS):** an umbrella term covering issues related to the impact of the project on the environment, communities, and workers.
- **Occupational Health and Safety (OHS):** Occupational health and safety is concerned with protecting the safety, health and welfare of people engaged in work or employment, and the surrounding communities. The enjoyment of these standards at the highest levels is a basic human right that should be accessible by each worker.
- **Key Documents:**
    - **Project Environmental and Social Management Plan (ESMP):** The safeguards document prepared prior to project approval by the World Bank identifying the activities to be undertaken, key risks (based on ESIA if available), and their mitigation measures.
    - **Contractor(s) Environmental and Social Management Plan (C-ESMP):** the plan prepared by the contractor(s) outlining how they will implement the works activities in accordance with the project's environmental and social management plan (ESMP). As shown in Figure 2, the C-ESMP also contains a number of management plans, in particular, the OHS Management Plan.
    - **Codes of Conduct:** the Codes of Conduct adopted for the project (or individual companies) covering the commitment of the company, and the responsibilities of managers and individuals with regards to ESHS, OHS and GBV.
- **Key Project Actors:**
    - **Consultant:** is as any firm, company, organization or other institution that has been awarded a contract to provide consulting services to the project and has hired managers and/or employees to conduct this work.
    - **Contractor(s):** is any firm, company, organization or other institution that has been awarded a contract to conduct infrastructure development works for the project and has hired managers and/or employees to conduct this work. This also includes sub-contractor(s) hired to undertake activities on behalf of the contractor(s).
    - **Manager:** is any individual offering labor to the contractor(s) or consultant, on or off the work site, under a formal or informal employment contract and in exchange for a salary, with responsibility to control or direct the activities of a contractor(s)'s or consultant's team, unit, division or similar, and to supervise and manage a pre-defined number of employees.
    - **Employee:** is any individual offering labor to the contractor(s) or consultant within country on or off the work site, under a formal or informal employment contract or arrangement, typically, but not necessarily (e.g. including unpaid interns and volunteers), in exchange for a salary, with no responsibility to manage or supervise other employees.

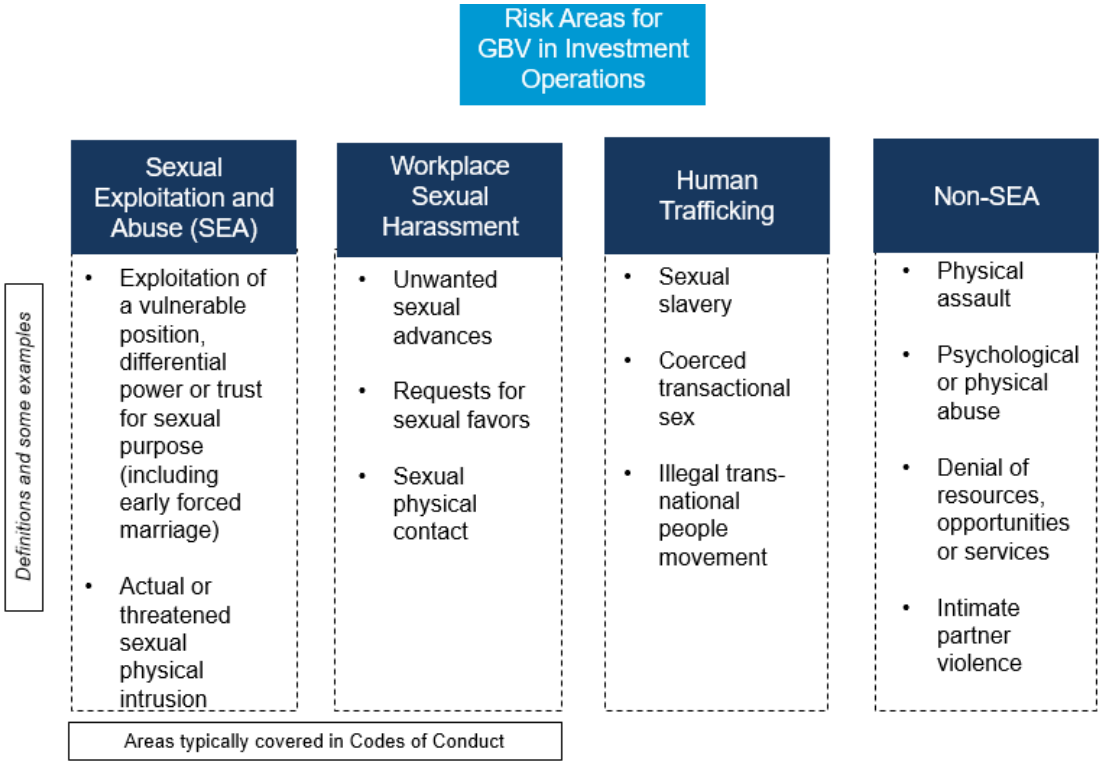
- **Grievance Redress Mechanism (GRM):** is the process established by a project to receive and address complaints related to the project—not just GBV but related to any aspect of the project. The GRM needs to: (i) allow for multiple channels to receive complaints; (ii) be readily accessible, allowing complaints to be made in different ways; and, (iii) have appropriate protocols to handle GBV complaints including empathetic listening and assurance of confidentiality.

- **Work Site:** is the area in which infrastructure development works are being conducted, as part of the project. Consulting assignments are considered to have the areas in which they are active as their work sites.

- **Work Site Surroundings:** is the 'Project Area of Influence' which are any area, urban or rural, directly affected by the project, including all human settlements found in it.

GBV

Key definitions: With reference to the focus areas for in Figure 1, there are a number of key definitions for understanding GBV:



Codes of Conduct Focus

These Codes of Conduct specifically focus on the following forms of GBV - Sexual Exploitation and Abuse (SEA) and Sexual Harassment as they represent high risk areas in the context of investment operations.

Figure 1: Types of GBV that may be Exacerbated by Investment Operations

- **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 (that is, gender) differences between male and female individuals. GBV includes acts that inflict physical, mental, or sexual harm or suffering; threats of such acts; and coercion and other deprivations of liberty, whether occurring in public or in private life.
- **Sexual Exploitation and Abuse (SEA):** Sexual exploitation is a facet of GBV that is defined as any actual or attempted abuse of a 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 the context of World Bank supported projects, SEA occurs against a beneficiary or member of the community.
    - **Sexual abuse** is further defined as the actual or threatened physical intrusion of a sexual nature whether by force or under unequal or coercive conditions.
    - **Child sexual abuse:** is defined by the age of the survivor. It includes different forms of sexual violence, involves either explicit force or coercion or cases in which the survivor cannot consent because of his or her age. Sexual activity with anyone below the age of 18, except in cases of pre-existing marriage, constitutes child sexual abuse. Mistaken belief regarding the age of the child and/or receipt of consent from the child is not a defense.
- **Sexual harassment:** occurs between personnel and staff on the project and involves any unwelcome sexual advance or unwanted verbal or physical conduct of a sexual nature. (e.g. looking somebody up and down; kissing; whistling and catcalls; in some instances, giving personal gifts). The distinction between the SEA and sexual harassment is important so that agency policies and staff trainings can include specific instruction on the procedures to report each.
    - **Sexual favors:** is a form of sexual harassment and includes making promises of favorable treatment (e.g., promotion) or threats of unfavorable treatment (e.g., loss of job) dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.
- **Child protection (CP):** Is an activity or initiative designed to protect children from any form of harm, particularly arising from child abuse and exploitation.
    - **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.
    - **Child Abuse and Exploitation (CAE):** the physical, sexual, or psychological harm of children 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.
    - **Grooming:** are 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 to a recipient who the sender believes to be a minor, with the intention of developing a relationship of trust

that can be abused by procuring the recipient to engage in or submit to sexual activity with another person, including but not necessarily limited to the sender. This includes engaging in online sexual activities, such as messages, videos and photos with sexual content either sent to or procured from a child.

Other definitions: In addressing the issues raised above related to GBV there are a number of considerations which need to be clearly defined:

- **Rape:** non-consensual penetration (however slight) of the vagina, anus or mouth with a penis, other body part, or an object.
- **Consent:** refers to when an adult makes an informed choice to agree freely and voluntarily to do something. 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 if national legislation of the country into which the CoC is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense. There is **no** consent when agreement is obtained through:
    - The use of threats, force or other forms of coercion, abduction, fraud, manipulation, deception, or misrepresentation,
    - The use of a threat to withhold a benefit to which the person is already entitled, or,
    - A promise made to the person to provide a benefit.
- **Perpetrator:** the person(s) who commit(s) or threaten(s) to commit an act or acts of GBV.
- **Survivor/Survivors:** the person(s) adversely affected by GBV. Women, men and children can be survivors of GBV.
- **GBV Service Provider:** is an independent organization trusted by the local communities with the skills and resources to provide support to survivors of GBV, as well as training to reduce the risks of GBV.
- **Third-Party Monitor (TPM) or Independent Verification Agent (IVA):** an organization commissioned to independently monitor and report on the effectiveness of the implementation of the GBV activities on the project. TPMs are financed independent of the project; IVAs are financed by the project.
- **Investigation and resolution of GBV allegations:**
    - **GBV Allegation Procedure:** is the prescribed procedure to be followed when reporting incidents of GBV.
    - **Accountability Measures:** are the measures put in place to ensure the confidentiality of survivors and to hold contractor(s), consultants and the client responsible for instituting a fair system of addressing cases of GBV.
    - **Response Protocol:** are the mechanisms set in place to respond to cases of GBV.
    - **GBV Complaints Team (GCT):** a team established by the project to address GBV issues.

Codes of Conduct

This chapter presents three Codes of Conduct for use:

i. **Company Code of Conduct:** Commits the company to addressing EHSH, OHS and GBV issues;
ii. **Manager's Code of Conduct:** Commits managers to implementing the Company Code of Conduct, as well as those signed by individuals; and,
iii. **Individual Code of Conduct:** Code of Conduct for everyone working on the project, including managers.

Company Code of Conduct

Implementing ESHS and OHS Standards

Preventing Gender Based Violence

The company is committed to ensuring that the project is implemented in such a way which minimizes any negative impacts on the local environment, communities, and its workers. This will be done by respecting the environmental, social, health and safety (ESHS) standards, and ensuring appropriate occupational health and safety (OHS) standards are met. The company is also committed to creating and maintaining an environment where children under the age of 18 will be protected, and where Sexual Exploitation and Abuse (SEA) and sexual harassment have no place. Improper actions towards children, SEA and sexual harassment are acts of Gender Based Violence (GBV) and as such will not be tolerated by any employee, sub-contractor(s)s, supplier, associate, or representative of the company.

Therefore, to ensure that all those engaged in the project are aware of this commitment, the company commits to the following core principles and minimum standards of behavior that will apply to all company employees, associates, and representatives, including sub-contractor(s)s and suppliers, without exception:

General

1. The company—and therefore all employees, associates, representatives, sub-contractor(s)s and suppliers—commits to complying with all relevant national laws, rules and regulations.
2. The company commits to full implementing its 'Contractor(s)s Environmental and Social Management Plan' (C-ESMP) as approved by the client.
3. The company commits to treating women, children (persons under the age of 18), and men with respect regardless of race, colour, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status. Acts of GBV are in violation of this commitment.
4. The company shall ensure that interactions with local community members are done with respect and non-discrimination.
5. Demeaning, threatening, harassing, abusive, culturally inappropriate, or sexually provocative language and behaviour are prohibited among all company employees, associates, and its representatives, including sub-contractor(s)s and suppliers.
6. The company will follow all reasonable work instructions (including regarding environmental and social norms).
7. The company will protect and ensure proper use of property (for example, to prohibit theft, carelessness, or waste).

Health and Safety

8. The company will ensure that the project's OHS Management Plan is effectively implemented by company's staff, as well as sub-contractor(s)s and suppliers.

9. The company will ensure that all person's on-site wear prescribed and appropriate personal protective equipment, preventing avoidable accidents, and reporting conditions or practices that pose a safety hazard or threaten the environment.
10. The company will:
    i. prohibit the use of alcohol during work activities.
    ii. prohibit the use of narcotics or other substances which can impair faculties at all times.
11. The company will ensure that adequate sanitation facilities are available on site and at any worker accommodations provided to those working on the project.
12. The company will not hire children under the age of 18 for construction work, or allow them on the work site, due to the hazardous nature of construction sites.

Gender Based Violence

13. Acts of GBV constitute gross misconduct and are therefore grounds for sanctions, which may include penalties and/or termination of employment and, if appropriate, referral to the Police for further action.
14. All forms of GBV, are unacceptable, regardless of whether they take place on the work site, the work site surroundings, at worker's camps or within the local community.
15. Sexual harassment of work personnel and staff (e.g. making unwelcome sexual advances, requests for sexual favours, and other verbal or physical conduct of a sexual nature) are acts of GBV and are prohibited.
16. Sexual favours (e.g. making promises of favourable treatment such as promotions, threats of unfavourable treatment such as losing a job, payments in kind or in cash dependent on sexual acts) and any form of humiliating, degrading or exploitative behaviour are prohibited.
17. The use of prostitution in any form at any time is strictly prohibited.
18. Sexual contact or activity with children under 18—including through digital media—is prohibited. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.
19. Unless there is full consent[30] by all parties involved in the sexual act, sexual interactions between the company's employees (at any level) and members of the communities surrounding the workplace 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 (including prostitution). Such sexual activity is considered "non-consensual" within the scope of this Code.
20. In addition to company sanctions, legal prosecution of those who commit acts of GBV will be pursued if appropriate.
21. All employees, including volunteers and sub-contractor(s)s are highly encouraged to report suspected or actual acts of GBV by a fellow worker, whether in the same company or not. Reports must be made in accordance with project's GBV Allegation Procedures.

[30] **Consent:** refers to when an adult makes an informed choice to agree freely and voluntarily to do something. There is **no** consent when agreement is obtained through the use of threats, force or other forms of coercion, abduction, fraud, manipulation, deception, or misrepresentation; the use of a threat to withhold a benefit to which the person is already entitled, or; a promise made to the person to provide a benefit. 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 if 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.

22. Managers are required to report and act to address suspected or actual acts of GBV as they have a responsibility to uphold company commitments and hold their direct reports responsible.

Implementation

To ensure that the above principles are implemented effectively the company commits to:

23. Ensuring that all managers sign the project's 'Manager's Code of Conduct' detailing their responsibilities for implementing the company's commitments and enforcing the responsibilities in the 'Individual Code of Conduct'.
24. Ensuring that all employees sign the project's 'Individual Code of Conduct' confirming their agreement to comply with ESHS and OHS standards, and not to engage in activities resulting in GBV, child endangerment or abuse, or sexual harassment.
25. Displaying the Company and Individual Codes of Conduct prominently and in clear view at workers' camps, offices, and in in public areas of the workspace. Examples of areas include waiting, rest and lobby areas of sites, canteen areas and health clinics.
26. Ensuring that posted and distributed copies of the Company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.
27. Ensuring that an appropriate person is nominated as the company's 'Focal Point' for addressing GBV issues, including representing the company on the GBV Complaints Team (GCT) which is comprised of representatives from the client, contractor(s), the supervision consultant, and local GBV Service Provider.
28. Ensuring that an effective GBV Action Plan is developed in consultation with the GCT which includes as a minimum:
    i. **GBV Allegation Procedure** to report GBV issues through the project Grievance Redress Mechanism (Section 4.3 Action Plan);
    ii. **Accountability Measures** to protect confidentiality of all involved (Section 4.4 Action Plan); and,
    iii. **Response Protocol** applicable to GBV survivors and perpetrators (Section 4.7 Action Plan).
29. Ensuring that the company effectively implements the agreed final GBV Action Plan, providing feedback to the GCT for improvements and updates as appropriate.
30. Ensuring that all employees attend an induction training course prior to commencing work on site to ensure they are familiar with the company's commitments to ESHS and OHS standards, and the project's GBV Codes of Conduct.
31. Ensuring that all employees 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 project's ESHS and OHS standards and the GBV Code of Conduct.

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

Company name: _____

Signature: _____

Printed Name: _____

Title: _____

Date: _____

Manager's Code of Conduct

Implementing ESHS and OHS Standards

Preventing Gender Based Violence

The company is committed to ensuring that the project is implemented in such a way which minimizes any negative impacts on the local environment, communities, and its workers. This will be done by respecting the environmental, social, health and safety (ESHS) standards, and ensuring appropriate occupational health and safety (OHS) standards are met. The company is also committed to creating and maintaining an environment where children under the age of 18 will be protected, and where Sexual Exploitation and Abuse (SEA) and sexual harassment have no place. Improper actions towards children, SEA and sexual harassment are acts of Gender Based Violence (GBV) and as such will not be tolerated by any employee, sub-contractor(s)s, supplier, associate, or representative of the company.

Managers at all levels have a responsibility to uphold the company's commitment. Managers need to support and promote the implementation of the Company Code of Conduct. To that end, managers must adhere to this Manager's Code of Conduct and to sign the Individual Code of Conduct. This commits them to supporting the implementation of the Contractor(s)'s Environmental and Social Management Plan (C-ESMP), the OHS Management Plan, and developing systems that facilitate the implementation of the GBV Action Plan.

Managers need to maintain a safe workplace, as well as a GBV-free environment at the workplace and in the local community. Their responsibilities to achieve this include but are not limited to:

Implementation

1. To ensure maximum effectiveness of the Company and Individual Codes of Conduct:
    i. Prominently displaying the Company and Individual Codes of Conduct in clear view at workers' camps, offices, and in public areas of the workspace. Examples of areas include waiting, rest and lobby areas of sites, canteen areas and health clinics.
    ii. Ensuring all posted and distributed copies of the Company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.
2. Verbally and in writing explain the Company and Individual Codes of Conduct to all staff.
3. Ensure that:
    i. All direct reports sign the 'Individual Code of Conduct', including acknowledgment that they have read and agree with the Code of Conduct.
    ii. Staff lists and signed copies of the Individual Code of Conduct are provided to the OHS Manager, the GBV Complaints Team (GCT), and the client.
    iii. Participate in training and ensure that staff also participate as outlined below.
    iv. Put in place a mechanism for staff to:
        (a) report concerns on ESHS or OHS compliance; and,

(b) confidentially report GBV incidents through the Grievance Redress Mechanism (GRM)

v. Staff are encouraged to report suspected or actual ESHS, OHS, GBV issues, emphasizing the staff's responsibility to the Company and the country hosting their employment, and emphasizing the respect for confidentiality.

4. 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 nor ordinarily resident in the country where the works are taking place.
5. Ensure that when engaging in partnership, sub-contractor(s), supplier or similar agreements, these agreements:
   i. Incorporate the ESHS, OHS, GBV Codes of Conduct as an attachment.
   ii. Include the appropriate language requiring such contracting entities and individuals, and their employees and volunteers, to comply with the Individual Codes of Conduct.
   iii. Expressly state that the failure of those entities or individuals, as appropriate, to ensure compliance with the ESHS and OHS standards, take preventive measures against GBV, to investigate allegations thereof, or to take corrective actions when GBV has occurred, shall not only constitute grounds for sanctions and penalties in accordance with the Individual Codes of Conduct but also termination of agreements to work on or supply the project.
6. Provide support and resources to the GCT to create and disseminate internal sensitization initiatives through the awareness-raising strategy under the GBV Action Plan.
7. Ensure that any GBV complaint warranting Police action is reported to the Police, the client and the World Bank immediately.
8. Report and act in accordance with the agreed response protocol any suspected or actual acts of GBV.
9. Ensure that any major ESHS or OHS incidents are reported to the client and the supervision engineer immediately, non-major issues in accordance with the agreed reporting protocol.
10. Ensure that children under the age of 18 are not present at the construction site or engaged in any hazardous activities.

Training

11. The managers are responsible to:
    i. Ensure that the OHS Management Plan is implemented, with suitable training required for all staff, including sub-contractor(s)s and suppliers; and,
    ii. Ensure that staff have a suitable understanding of the C-ESMP and are trained as appropriate to implement the C-ESMP requirements.
12. 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 GBV elements of these 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 GBV Action Plan for addressing GBV issues.
13. Managers are required to attend and assist with the project facilitated monthly training courses for all employees. Managers will be required to introduce the trainings and announce the self-evaluations, including collecting satisfaction surveys to evaluate training experiences and provide advice on improving the effectiveness of training.
14. Ensure that time is provided during work hours and that staff prior to commencing work on site attend the mandatory project facilitated induction training on:
    i. OHS and ESHS; and,
    ii. GBV required of all employees.

15. During civil works, ensure that staff attend ongoing OHS and ESHS training, as well as the monthly mandatory refresher training course required of all employees to on GBV.

Response

16. Managers will be required to take appropriate actions to address any ESHS or OHS incidents.

17. Regarding GBV:
    i. Provide input to the GBV Allegation Procedures and Response Protocol developed by the GCT as part of the final cleared GBV Action Plan.
    ii. Once adopted by the Company, managers will uphold the Accountability Measures set forth in the GBV Action Plan to maintain the confidentiality of all employees who report or (allegedly) perpetrate incidences of GBV (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 GBV by one of his/her direct reports, or by an employee working for another contractor(s) on the same work site, s/he is required to report the case using the GRM.
    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 to sanction was made by the GCT.
    v. If a manager has a conflict of interest due to personal or familial relationships with the survivor and/or perpetrator, he/she must notify the Company and the GCT. The Company will be required to appoint another manager without a conflict of interest to respond to complaints.
    vi. Ensure that any GBV issue warranting Police action is reported to the Police, the client and the World Bank immediately.

18. Managers failing address ESHS or OHS incidents or failing to report or comply with the GBV provisions may be 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:
    i. Informal warning.
    ii. Formal warning.
    iii. Additional Training.
    iv. Loss of up to one week's salary.
    v. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
    vi. Termination of employment.

19. Ultimately, failure to effectively respond to ESHS, OHS, and GBV cases on the work site by the company's managers or CEO may provide grounds for legal actions by authorities.

I do hereby acknowledge that I have read the foregoing Manager's Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, and GBV requirements. I understand that any action inconsistent with this Manager's Code of Conduct or failure to act mandated by this Manager's Code of Conduct may result in disciplinary action.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

Individual Code of Conduct

Implementing ESHS and OHS Standards

Preventing Gender Based Violence

I, _____, acknowledge that adhering to environmental, social, health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing Gender Based Violence (GBV) is important.

The Company considers that failure to follow ESHS and OHS standards, or to partake in activities constituting GBV—be it on the work site, the work site surroundings, at workers' camps, or the surrounding communities—constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment. Prosecution by the Police of those who commit GBV may be pursued if appropriate.

I agree that while working on the project I will:

- Consent to Police background check.
- Attend and actively partake in training courses related to ESHS, OHS, and GBV as requested by my employer.
- Will wear my personal protective equipment (PPE) at all times when at the work site or engaged in project related activities.
- Take all practical steps to implement the contractor(s)'s environmental and social management plan (C-ESMP).
- Implement the OHS Management Plan.
- Adhere to a zero-alcohol policy during work activities, and refrain from the use of narcotics or other substances which can impair faculties at all times.
- 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.
- Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not sexually exploit or abuse project beneficiaries and members of the surrounding communities.
- Not engage in sexual harassment of work personnel and staff —for instance, making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature is prohibited. E.g. looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; in some instances, giving personal gifts.
- Not engage in sexual favors —for instance, making promises of favorable treatment (e.g. promotion), threats of unfavorable treatment (e.g. loss of job) or payments in kind or in cash, dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.
- Not use prostitution in any form at any time.
- Not participate in sexual contact or activity with children under the age of 18—including grooming or contact through digital media. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.

- Unless there is the full consent[31] by all parties involved, I will not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex (including prostitution). Such sexual activity is considered "non-consensual" within the scope of this Code.
- Consider reporting through the GRM or to my manager any suspected or actual GBV by a fellow worker, whether employed by my company or not, or any breaches of this Code of Conduct.

With regard to children under the age of 18:

- Bring to the attention of my manager the presence of any children on the construction site or engaged in hazardous activities.
- Wherever possible, ensure that another adult is present when working in the proximity of children.
- Not invite unaccompanied children unrelated to my family into my home, unless they are at immediate risk of injury or in physical danger.
- Not use any computers, mobile phones, video and digital cameras or any other medium to exploit or harass children or to access child pornography (see also "Use of children's images for work related purposes" below).
- Refrain from physical punishment or discipline of children.
- Refrain from hiring children for domestic or other labor below the minimum age of 14 unless national law specifies a higher age, or which places them at significant risk of injury.
- Comply with all relevant local legislation, including labor laws in relation to child labor and World Bank's safeguard policies on child labor and minimum age.
- Take appropriate caution when photographing or filming children (See Annex 2 for details).

Use of children's images for work related purposes

When photographing or filming a child for work related purposes, I must:

- Before photographing or filming a child, assess and endeavor to comply with local traditions or restrictions for reproducing personal images.
- Before photographing or filming a child, obtain informed consent from the child and a parent or guardian of the child. As part of this I must explain how the photograph or film will be used.
- Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive.
- Ensure images are honest representations of the context and the facts.
- Ensure file labels do not reveal identifying information about a child when sending images electronically.

Sanctions

I understand that if I breach this Individual Code of Conduct, my employer will take disciplinary action which could include:

1. Informal warning.
2. Formal warning.
3. Additional Training.
4. Loss of up to one week's salary.

[31] **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 using 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 if 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.

5. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
6. Termination of employment.
7. Report to the Police if warranted.

I understand that it is my responsibility to ensure that the environmental, social, health and safety standards are met. That I will adhere to the occupational health and safety management plan. That I will avoid actions or behaviors that could be construed as GBV. Any such actions will be a breach this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, GBV issues. I understand that any action inconsistent with this Individual Code of Conduct or failure to act mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

GBV Action Plan

This GBV Action Plan outlines how the project will put in place the necessary protocols and mechanisms to minimize or eliminate GBV on the project, as well as to address any GBV issues that may arise. The following framework needs to be adapted to reflect the specific situation and implementation arrangements for each project.

The GBV Complaints Team

The project shall establish a 'GBV Complaints Team' (GCT). The GCT will include, as appropriate to the project, at least four representatives ('Focal Points') as follows:

a. A safeguards specialist from the client;
b. The occupational health and safety manager from the contractor(s)[32], or someone else tasked with the responsibility for addressing GBV with the time and seniority to devote to the position;
c. The supervision consultant;
d. A representative from a client approved service provider with experience in GBV—the 'GBV Service Provider' (GSP); and optionally,
e. Members representing the local community, government, etc.

It will be the duty of the GCT with support from the management of the contractor(s) and consultant(s) to inform workers about the activities and responsibilities of the GCT. To effectively serve on the GCT, members must undergo training by the GBV Service Provider prior to the commencement of their assignment to ensure that they are sensitized on GBV.

The GCT will be required to:

a. Approve any changes to the **GBV** elements of the **Codes of Conduct** contained in this document, with clearances from the client and the World Bank for any such changes.
b. Prepare the **GBV Action Plan** reflecting the Codes of Conduct which includes:
   i. **GBV Allegation Procedures** (See 4.2)
   ii. **Addressing GBV Complaints** (See 4.3)
   iii. **Accountability Measures** (See 4.4)
   iv. An **Awareness raising Strategy** (See 4.6)
   v. A **Response Protocol** (See 4.7)
c. Obtain approval of the GBV Action Plan by the Contractor(s)'s management;
d. Obtain client and World Bank clearances for the GBV Action Plan prior to full mobilization.
e. Receive and monitor resolutions and sanctions regarding complaints received related to GBV associated with the project; and,
f. Ensure that GBV statistics in the GRM are up to date and included in the regular project reports.

[32] Where there are multiple contractor(s)s working on the project, each shall nominate a representative as appropriate.

The GCT shall hold quarterly update meetings to discuss ways to strengthen resources and GBV support for employees and community members.

Making Complaints: GBV Allegation Procedures

All staff, volunteers, consultants and sub-contractor(s)s are encouraged to report suspected or actual GBV cases. Managers are required to report suspected or actual GBV cases as they have responsibilities to uphold company commitments and they hold their direct reports accountable for complying with the Individual Code of Conduct.

The project will provide information to employees and the community on how to report cases of GBV Code of Conduct breaches through the Grievance Redress Mechanism (GRM). The GCT will follow up on cases of GBV and Code of Conduct breaches reported through the GRM.

Addressing Complaints about GBV

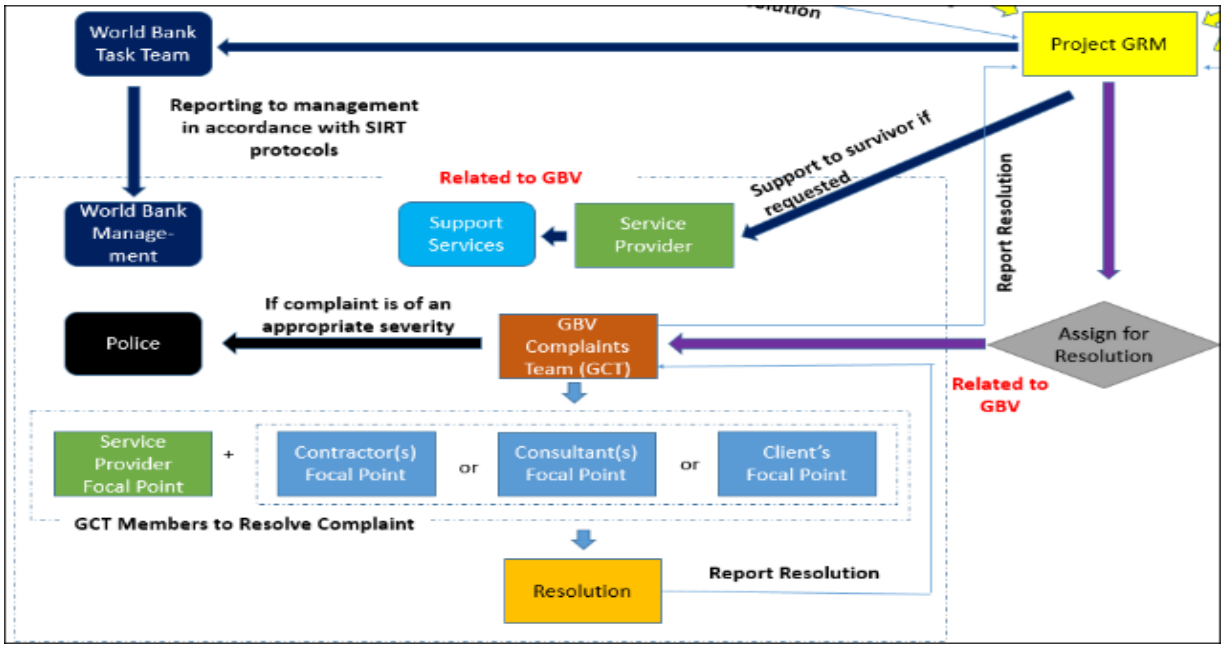
Each project needs to put in place appropriate protocols for addressing GBV complaints. The protocols will vary between projects based on local circumstances, but there are key principles which are required in all projects.

GRM

The project operates a GRM which is managed by a designated GRM operator with the project management unit or, ideally, an entity independent of the project implementation. The GRM must be designed to ensure that:

i. Complaints can be made through different channels, such as the traditional local practices (e.g. village chiefs), online, phone, in-person, the local GBV Service Provider, the manager(s), or the Police.
ii. Complaints should be able to be made in different ways such as online, via telephone or mail, or in person;
iii. Anonymity should be ensured if the complainant so desires it, especially about GBV;

There needs to be a specific workflow for handling GBV complaints. The figure below illustrates the work flow adopted in 2017 for the Vanuatu Aviation Investment Project (VAIP).



If the complaint to the GRM is made by an GBV survivor, or on behalf of a survivor, the complainant will be directly referred to the GBV Service Provider to receive support services (if so desired) while the GCT investigates the complaint in parallel.

The World Bank requires that all complaints regarding GBV must immediately be reported to the World Bank task team by the GRM operator. These complaints may be referred to the World Bank management in accordance with the World Bank's reporting protocols.

The GRM shall only collect two items of data related to GBV—to be inferred from discussions with the complainant:

i. The nature of the GBV; and,
ii. To the best of the knowledge was the perpetrator associated with the project.

Additional information shall be gathered by the GBV Service Provider using their existing survivor support protocols. This information shall be confidential and not part of the GRM process.

The GRM operator will refer complaints related to GBV to the GCT to resolve them. In accordance with the GBV Action Plan, the GCT through the GBV Service Provider and Focal Point(s) will investigate the complaint and ultimately provide the GRM operator with a resolution to the complaint, or the Police if appropriate. The victim's confidentiality should also be kept in mind when reporting any incidences to the Police.

The GRM operator will, upon resolution, advise the complainant of the outcome, unless it was made anonymously.

GBV Service Provider

The GBV Service Provider is a local organization which has the trust of the local community, experience and ability to support survivors of GBV. They will be identified by the client during project preparation, if necessary, with the support of the World Bank.
The client, the contractor(s) and consultant(s) must establish a working relationship with the GBV Service Provider, so that GBV cases can safely be referred to them. The GBV Service Provider will also provide support and guidance to the GBV Focal Points as necessary. The GBV Service Provider will have a representative on the GCT and be involved in resolving complaints related to GBV.
The contract for the GBV Service Provider shall include provision for financing costs around providing the necessary support to survivors.

GBV Complaints Team

The GCT is responsible for ensuring that GBV complaints are properly investigated and that appropriate sanctions are applied for any cases where sanctions are considered to be justified. The GCT is comprised of: (i) the GBV Service Provider; and (ii) 'Focal Points' from the contractor(s), consultant(s) and client; and optionally, (iii) members of the local community, government, etc.

All the Focal Points on the GCT must be trained and empowered to resolve GBV issues. It is essential that all staff of the GRM and GCT understand the guiding principles and ethical requirement of dealing with survivors of GBV. All reports should be kept confidential and referred immediately to the GBV Service Provider represented on the GCT[33].

[33] Survivors of GBV 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.

The GCT shall confirm that all complaints related to GBV have been: (i) referred to the client and the World Bank by the GRM operator; and (ii) are referred to Police (or other authorities) for investigation if of appropriate severity. In GBV cases warranting Police action; and (iii) management for further action.

The GCT shall consider all GBV complaints and agree on a plan for resolution. The appropriate Focal Point will be tasked with implementing the plan (i.e. issues with contractor(s)'s staff will be for the contractor(s) to resolve; consultant's staff the consultant; and client's staff the client). The Focal Point will advise the GCT on resolution, including referral to the Police if necessary. They will be assisted by the GBV Service Provider as appropriate.

Accountability Measures

All reports of GBV shall be handled in a confidential manner to protect the rights of all involved. The client, contractor(s) 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). The contractor(s) and consultant must prohibit discrimination or adverse action against an employee because of survivor's disclosure, experience or perceived experience of GBV (see Annex 1 for examples of actions to maintain accountability).

To ensure that survivors feel confident to disclose their experience of GBV, they can report cases of GBV through multiple channels such as: (i) online, (ii) phone, (iii) in-person, (iv) the local GBV Service Provider, (v) the manager(s), (vi) village councils; or, (vii) the Police. To ensure confidentiality, only the GBV Service Provider will be privy to information regarding the survivor. The GCT will be the primary point of contact for information and follow up regarding the perpetrator.

Monitoring and Evaluation

The GRM is to notify the client and the World Bank immediately of any complaints related to GBV.

The GCT 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

It is important to create an Awareness-raising Strategy with activities aimed to sensitize employees on GBV on the work site and its related risks, provisions of the GBV Codes of Conduct, and GBV 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 the related (expected) delivery dates. Awareness-raising activities should be linked with trainings provided by the GBV Service Provider.

Response Protocol

The GCT will be responsible for developing a written response[34] protocol to meet the project requirements, in accordance to national laws and protocols. The response protocol must include:

i. Mechanisms to notify and respond to perpetrators in the workplace;
ii. The GRM process to ensure competent and confidential response to disclosures of GBV, and;
iii. A referral pathway to refer survivors to appropriate services (See 4.8 Survivor Support Measures below).

The contractor(s), consultant(s) and client shall encourage notification through the GRM channels from employees and community members about perpetrators in the workplace through awareness raising activities. An employee who discloses a case of sexual harassment in the workplace shall be referred to the GRM for reporting to seek services.

Through the GCT, the companies and client shall oversee the investigation of these grievances, ensuring procedural fairness for the accused, and within the local laws. If an employee has breached the Code of Conduct, the employer will take appropriate action which could include:

i. Undertake disciplinary action up in accordance with sanctions in the GBV Codes of Conduct (see Section 4.9);
ii. Report the perpetrator to the Police as per local legal paradigms; and/or
iii. If feasible, provide or facilitate counselling for the perpetrator.

Survivor Support Measures

It is essential to appropriately respond to the survivor's complaint by respecting the survivor's choices to minimize the potential for re-traumatization and further violence against the survivor.

Any survivor will receive care regardless of whether the perpetrator is associated with the project will receive support/ The support will be provided by the GBV Service Provider—including medical and psychosocial support, emergency accommodation, transport fees necessary to receive services, security including Police protection and livelihood support—by facilitating contact and coordination with these services. See Annex 1 for examples of the types of support which could be considered under the project.

The contract with the GBV Service Provider shall explicitly detail the services to be provided, and how the associated costs shall be financed by the project.

If the survivor is an employee of the contractor(s), consultant(s) or client, to ensure the safety of the survivor, and the workplace in general, the client, contractor(s) or consultant, in consultation with the survivor, will assess the risk of ongoing abuse to the survivor and in the workplace. Reasonable adjustments will be made to the survivor's work schedule and work environment as deemed necessary (see Annex 1 for examples of safety measures). The employer will provide adequate leave to survivors seeking services after experiencing violence (see Annex 1 for details).

Sanctions

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

In accordance with the Code of Conduct, any employee confirmed as a GBV perpetrator shall be considered for disciplinary measures in line with sanctions and practices as agreed in the Individual Code of Conduct. Potential Sanctions to employees who are perpetrators of GBV include:

i. Informal warning
ii. Formal warning
iii. Additional Training
iv. Loss of up to one week's salary.
v. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
vi. Termination of employment.
vii. Referral to the Police or other authorities as warranted.

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 1 - Potential Procedures for Addressing GBV

Accountability Measures to maintain confidentiality can be achieved through the following actions:

1. Inform all employees that confidentiality of GBV survivors' personal information is of utmost importance.
2. Provide the GCT with training on empathetic and non-judgmental listening.
3. 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).

GBV Allegation Procedures should specify:

1. Who survivors can seek information and assistance from.
2. The process for community members and employees to lodge a complaint through the GRM should there be alleged GBV.
3. 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.

Financial and Other Supports to survivors can include:

1. No/low interest loans.
2. Salary advances.
3. Direct payment of medical costs.
4. Coverage of legal costs specifically related to the incident
5. Coverage of all medical costs related specifically to the incident.
6. Upfront payments for medical costs to later be recouped from the employee's health insurance.
7. Providing or facilitating access to childcare.
8. Providing security upgrades to the employee's home.
9. Providing safe transportation to access support services or to and from accommodation.

Based on the rights, needs and wishes of the survivor, survivor support measures to ensure the safety of the survivor who is an employee can include[35]:

1. Changing the perpetrator or survivor's span of hours or pattern of hours and/or shift patterns.
2. Redesigning or changing the perpetrator or survivor's duties.
3. Changing the survivor's telephone number or email address to avoid harassing contact.
4. Relocating the survivor or perpetrator to another work site/ alternative premises.
5. Providing safe transportation to and from work for a specified period.
6. Supporting the survivor to apply for an Interim Protection Order or referring them to appropriate support.
7. Taking any other appropriate measures including those available under existing provisions for family friendly and flexible work arrangements.

Leave options for survivors that are employees can include:

1. An employee experiencing sexual harassment should be able to request paid special leave to attend medical or psychosocial appointments, legal proceedings, and relocation to safe

[35] It is critical that a survivor centered approach be adopted. The survivor should be fully involved in the decision making. Except for exceptional circumstances the perpetrator should be required to take appropriate actions to accommodate the survivor (e.g. move, change hours, etc.), rather than the survivor changing.

accommodation among other services that may be needed.

2. An employee who supports a person experiencing sexual harassment may take care givers leave, including but not limited to accompanying them to court or hospital, or to take care of children.
3. Employees who are employed in a casual capacity may request unpaid special leave or unpaid care givers leave to undertake the activities described above.
4. The amount of leave provided will be determine by the individual's situation through consultations with the employee, the management and the GCT where appropriate.

Potential Sanctions to employees who are perpetrators of GBV include:

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

Referral to the Police or other authorities as warranted.

Appendix D: Community Consultations / Meeting Minutes

Appendix D.1: Alarua Meeting

MEETING MINUTES

Malaita (North & South Bridges)

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	29th August 2023	**Time:**	*12noon*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Alarua
		Bridge Site	Bira

1. Project Team

Name	Position	*Organization*
Salome Pita	National Safeguards Specialist	Project Support Team (PST)
Edwin Koveke	Environment and Social Safeguards Officer	Project Support Team (PST)
Joy Faulkner	Community Liaison Officer	Project Support Team (PST)
Rowena Toito'ona-Totori	Civil Engineer	Egis-Azimuth
Wendy Mark	Environment and Social Safeguards	Egis-Azimuth
Jaysie Boape	Environment and Social Safeguards	Egis-Azimuth
Lawrence Wawane	Regional Manager - Engineer	Ministry of Infrastructure & Development (MID)
Kelly	Works Supervisor-Malaita Province	Ministry of Infrastructure & Development (MID)

2. Agenda

Topic	Presenter	Organisation
1. Introducing the Project Team	Lawrence Wawane	MID
2. Project Background	Salome Pita	SIRAP-PST
3. Design Presentation (including Safeguards)	Jaysie Boape Rowena Toito'ona Wendy Mark	Egis- Azimuth

3. Meeting Notes/Questions/Comments	Responses

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	29th August 2023	**Time:**	*12noon*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Alarua
		Bridge Site	Bira

• The community people asked which bridge is the cheapest of the bridge of the options.	• Egis/Azimuth Team informed the community that concrete is the cheapest
• The bridge is what the people are looking forward to it. In the past, when the river floods, people especially women and children cannot cross the river to go to clinic and school. Therefore, building the bridge is good news to the people.	
• Are the bridge built to withstand climatic events such as cyclone? The last major climatic event in the area is cyclone Namu.	• Egis/Azimuth Team commented that the bridge is designed to withstand climatic/tectonic event. In the design, the past flooding experiences are factored in the design ie, past flooding events, earthquake etc)
• Thankened the team for meeting. He has heard about contructing the Bira Bridge many many years ago but nothing happened. Seeing the SIRAP team in the community, presenting the project designs, it gives them assurance that this bridge will now be constructed and are looking forward to the bridge when completed. The community people look forward to a strong bridge to be built.	
• Those of us that lived in the area and used the river for washing and bathing, during flood events, we have observed large logs being transported down stream. Please design a high bridge to avoid it damaging the bridge.	
• Does the bridge design have guard rails for safety purpurse?	Egis/Azimuth Team -Yes, bridge have guard rails for safety and also pedestrian walk.
• The bridge is very important for emergency situations for agriculture, police, medical and it is good that the engineer visits the site to actually see the bridge area and to design bridge that will serve its purpose.	
• The catchment area for bira river upstream is quite big compared to down stream and during flood event the volume of water produced is very high and the debris transported downsteam include logs.	So whatever bridge options selected will bring about change and improvement. The design takes into account all the climatic conditions in the area.
• The river has never changed its course during flooding event, even in 1986. However, there are gardens along the riverside upstream, of which, during gardening, the villagers cleared riverside vegetion have been removed causing erosion.	
• During flood events, the flood waters diverts to Su'u River therefore the velocity of the waterflow toward Bira is not strong. The river bifurcation is about 6km from the bridge site.	
• The highest flood level recorded was in 1986 during cyclone Namu. The flooding water does not enter the village and sees it similar to normal flooding.	
• The village elders have asked their people to be support to the project interms of allowing work to be undertaken in their land or should the project need additional land.	MID responded that should additional land will be required by the project, the contractor will communicate with land owners.

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	29th August 2023	**Time:**	*12noon*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Alarua
		Bridge Site	Bira

• The community people were asked where they'd want to put the detour and the community people highlighted that any detour during construction period to be within 30m road corridor.	PST thanked the community for highlighting this. The design team will design ensure that the detour will be within the 30m corridor (15m both sides from road centre line). PST CLO further commented that whatever work will be undertaken by contractor will be within the 30m corridor and within bridge /road location.
• The community people asked which of the two bridges (Su'u, Bira) will be constructed first?or will both be constructed simultaneously?	PST team clarified that Acess/detour for Bira or Su'u will be within the 30m corridor. Which bridge to construct first will be decided by the contructor. -
• The community informed the team that, there is an existing log pond where the contractor can access or use for landing.	MID informed the community that should the project require additional land/access, the contractor will communicate with land owners.
• The village elder further informed his people that no one will claim any compentation for any crop/plant that will be removed within the road corridor. This is because in the past, there was no compentation paid when road was initially constructed.	
• During constructrion, the community people want to be engaged to work as casuals for the project.	Egis/Azimuth Team/ PST team/MID have taken note
• How long will take before the project starts?	PST responsed and informed the community that currently Egis/Azimuth are finalising the designs and should be completed by Octomber. After this, then it will go through bidding and evaluation. Therefore, it will take sometime, so hopefully the project will start by early next year.
• An elder (Charles) have asked if his 19 logs at Su'u be transported back to his place. He used his logs to put up the temporary bridge that is currently being used for access after the bridge was damaged by logging trucks.	Egis/Azimuth Team/ PST team/MID have taken note of the elders request.
• Community elder have thanked the team for the visit and also information shared regarding the project. They are happy to share their views and concerns and are also have clear under standing about the project. He also further asked his community people to work with the project as this will benefit the people.	MID thanked the communty people for their attendance and participation.

Attendance Register

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

Date:	29/08/23	Start Time:	12noon	Community:	Alarua
		End Time:	2pm	Venue:	Alarua meeting Area

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
1	FRED DAUMAE	MALE	ALARUA	
2	RICHARD KAKASI	"	"	
3	SOSIMO FAALONGOMAESIA	"	"	
4	JAMES GAFUI	"	BATTLE FIELD (SDA)	
5	REX MAEA	"	SDA	
6	JOHN FOUFAIMAE	"	SEDEN	
7	NATHIAS INARAFERE	"	ALARUA	
8	JOHN LEFO (CATHECHIST)	MALE	ALARUA	
9	CHARLES FAALONAESIA	"	"	
10	ISAAC AGOLA	"	"	
11	ABRAHAM TALOINAO	"	"	
12	CHARLES SUAFIMAE	"	"	
13	AUSTIN MANDO	"	"	
14	STANELY WALE	"	"	
15	TERRY AKWAALA	"	ONEGALA	
16	MOSES FAIAFUNA	"	SEDEN	
17	CATHRINE SEDE	FEMALE	SEDEN	
18	WALTER MAEA	MALE	BATTLE FIELD (SDA)	

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
19	JUDITH WASICOKI	FEMALE	ALARUA	
20	PETER DAUMAE (CHIEF)	MALE	"	
21	SAM HILLARY GAIAFUNA	MALE	SELDEN VILLAGE	
22	EDRIN KASU	FEMALE	ALARUA	
23	DIANA SOSIMO	"	"	
24	SEKONDO FA'ALONGOMAESIA	MALE	"	
25	MORIS FOIFAIMAE	"	"	
26	ABILYN MAGA	FEMALE	BATTLEFIELD (SDA)	
27	ELLEN MAESUKEA	"	" " "	
28	CHARLES FUFABURI	MALE	ALARUA	
29	MOFFET DOURORA	"	ALARUA	
30	ELIZABETH OBIA	FEMALE	"	
31	JOHN MAETAOLO	MALE	ONEBALA	
32	Wendy Mark	F	Egis - Azimuth	
33	Sally Pita	F	PST	
34	Jaysie Boape	F	Egis - Azimuth	
35	Rowena. Tortoiona	F	Egis - Azimuth	
36	JOY Faulkner	F	PST	
37	EDWIN KOVEKE	M	PST	
38	LAWRENCE WAENANE	M	MD	
39	Kelly Wanefield	M	MD	

Appendix D.2: Bila Meeting

MEETING MINUTES

Malaita (North & South Bridges)

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	29 August 2023	**Time:**	3:03pm
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Bi*l*a
		Bridge Site	Bi*l*a

1. Project Team

Name	Position	*Organization*
Salome Pita	National Safeguards Specialist	Project Support Team (PST)
Edwin Koveke	Environment and Social Safeguards Officer	Project Support Team (PST)
Joy Faulkner	Community Liaison Officer	Project Support Team (PST)
Rowena Toito'ona-Totori	Civil Engineer	Egis-Azimuth
Wendy Mark	Environment and Social Safeguards	Egis-Azimuth
Jaysie Boape	Environment and Social Safeguards	Egis-Azimuth
Lawrence Wawane	Regional Manager - Engineer	Ministry of Infrastructure & Development (MID)
Kelly	Works Supervisor-Malaita Province	Ministry of Infrastructure & Development (MID)

2. Agenda

Topic	Presenter	Organisation
Introducing the Project Team	Lawrence Wawane	MID
Project Background	Sally Pita	SIRAP-PST
Design Presentation (including Safeguards)	Rowena Toito'ona Wendy Mark	Egis- Azimuth

3. Meeting1 Notes/Questions/Comments	Responses
• The Community elder informed that the design presentation is clear and see the importance of constructing the bridge as it is providing access and service for the people.	
• An elder asked why option 3 of the design is very expensive?	Egis-Azimuth responded that it is quite expensive because it will be procured oversease. Steel girder bridges can be expensive to build and maintain due to the high cost of steel and the specialized construction equipment required for their construction. Also since Bira is close to the coast, steel girder bridges may require regular inspections and repairs, which can be costly.
• During flooding event, flood water level rises and it usually flooded the village and including the roads. Therefore, bridge height in the design needed to be taken into account of the experiences.	Egis-Azimuth Engineer took note of the comment.
• Also, take note, the eastern side of the bridge approach is eroding.	Egis-Azimuth Engineer took note of the comment.
• Before construction, it is good to do some community awareness.	Egis-Azimuth responded that the the contractor will undertake community consultation and awareness prior to actual contractions.

Attendance Register

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

Date:	29/08/23	Start Time:	3pm	Community:	Bira Community
		End Time:	4 pm	Venue:	Bira Village

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
1	Primo Jack	M	Bira	
2	Pr Revelation Tom	M	Bira	
3	Ben Bono	M	Bira	
4	Mark Hugo	M	Bira	
5	Judith Boifuana	F	Bira	
6	Joseph Warakca	M	Bira	
7	Mofat Gau Gau	M	Bira	
8	Duddley Maniania	M	Bira	
9	JOHN AKO	M		
10	Alister Lulamo	M	Bira	
11	Margreth Irimae	F		
12	Cilvia	F		
13	Joe Kwaremaca	M	Bira	
14	Wendy Mark	F	Egis - Brisbane	
15	Rowena Tafoiana	F	Egis / Aus	
16	Jaysie Boape	F	Egis / AUS	
17	EDWIN KOVEKE	M	PST	
18	Lawrence Wawesure	M	MID	

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

	No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
19	40	Joy Faulkner	F	PST	
20	41	Kelly Wanegiolo	M	MID	
	42				

Appendix D.3: Kwariekwa Meeting

MEETING MINUTES

Malaita (North & South Bridges)

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	*30/08/2023*	**Time:**	*10am*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Kwari*e*kwa
		Bridge Site	Bira

1. Project Team

Name	Position	*Organization*
Salome Pita	National Safeguards Specialist	Project Support Team (PST)
Edwin Koveke	Environment and Social Safeguards Officer	Project Support Team (PST)
Joy Faulkner	Community Liaison Officer	Project Support Team (PST)
Rowena Toito'ona-Totori	Civil Engineer	Egis-Azimuth
Wendy Mark	Environment and Social Safeguards	Egis-Azimuth
Jaysie Boape	Environment and Social Safeguards	Egis-Azimuth
Lawrence Wawane	Regional Manager - Engineer	Ministry of Infrastructure & Development (MID)
Kelly	Works Supervisor-Malaita Province	Ministry of Infrastructure & Development (MID)

2. Agenda

Topic	Presenter	Organisation
Introducing the Project Team	Lawrence Wawane	MID
Project Background	Salome Pita/Edwin Koveke	SIRAP-PST
Design Presentation (including Safeguards)	Jaysie Boape Rowena Toito'ona Wendy Mark	Egis- Azimuth

3. Meeting1 Notes/Questions/Comments Responses

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	*30/08/2023*	**Time:**	*10am*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Kwar*i*ekwa
		Bridge Site	Bira

• Will the be safety rails and footpath	• In the design, safety rails and foothpath is included.
• The Aebareo river, during flooding event, the flood level is not too high.	• The village people responded they use well for bathing and drinking they use rain water.
• The community are ok with the design.	• The team take note of this comment and will inform the design team.
• The community informed the team that in 1987, there is tsunami after an earthquake and it caused waves to come into the harbour. Therefore, it is good to take note of this.	• The team take note of this comment.
• Sea level rise is also affecting the coastal areas therefore coastal instrution and inudation is evident and it is getting closer to the road. Can the engineers design any means to protect the shoreline?	• The comment is noted and will provide feedback to the designers.
• Will the contract get local materials? Stones or Gravels etc	• MID responded, If the contractor needed local materials , the contractor will communicate with the local resource owners. • Egis-Azimuth further elaborated that, during construction, the contractor will need materials for activities such as slope protection where it will need local materials to do gabions such as stones etc, with this the contractor will get this from approved quarry site as specified in the design document. Then the contractor will look for where it will source the local materials from , collect samples for testing and if it suitable as per the specifications then contractor will visit the resource owner to communicate and dicuss about getting the materials.
• What time will the construction start/timeframe for construction?	• PST clarified to the community that, for now, the project is at the design phase and data collection. The project team are doing site visit, collecting data/local knowledge inorder to update the current design. Then, will finalise the desing and send the final design to MID and PST for review and approval. Then, the procurement and evaluation period will take place before awarding. Once all this processes are completed before you will all expect the contractor to come for construction. It is likely the project will start early next year. With this, PST will also visit again with the contractor to introduce them to the community.
• Is there concern or consideration for a bridge for Su'u River?	• MID responded informing the community that, a bridge for Su'u River will be a project of its own. MID is still looking for donor to provide funding. Su'u River is quite wide and big and will need a big bridge and will require a lot of work. Once, funding are available, then MID will address this.
• The community are happy to be consulted and informed about the project.	• MID on behalf of the team thank the community for their time and participation and contributions in the meetings.

Attendance Register

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

Date:	30/08/2023	Start Time:	9am	Community:	Kwairiekwa
		End Time:	10:15am	Venue:	Market

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
1	DAVID OASUTHU	M		
2	Mantias Oiuru	M		
3	MAGARETH BAILAU	F		
4	MARY DONA	F		
5	RUTH	F		
6	ROSA UAKA	F		
7	Selina Bumae			
8	Florence Oasutu	F		
9	Betsy Suana	F		
10	Michael	M		
11	Glenda Oiuru	F		
12	Noemi Suqai	F		
13	Janet Daurobo	F		
14	Sifiréi	F		
15	JOHN SUIGA	M		
16	LORINA SOUKIDIA	F		
17	JOE ABIA	M		
18	SAE KENIEROA	M		

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
19	FRANCIS Tolamauri	M	Kwarieksw9	
20	Pius Arui	M	"	
21	Michael No'oka	M	"	
22	Junior Vini	M	"	
23	Warlton Arui	M	"	
24	Emmanuel Foq'Fou	M	"	
25	William Gora'ara	M	"	
26	Neithaniel Kwailifu	M	"	
27	will Fved	M	"	
28	Charlse Fonagau	M	"	
29	Prichard Likok	M	"	
30	Richard Toisuta	M	"	
31	Aloysio Tofuiuna	M	"	
32	Junior Hovi	M	"	
33	Nelson Aolamo	M	"	
34	Simon Dagi	M	"	
35	Helen GARI	F	"	
36	BENJAMEN GUARAE'	M	"	
37	Teresa Kwatafoni	F	"	
38	JBy Faulkner	F	"	
39	Matthias Olofia	M	"	

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
40	Pdyn orinna	F	Kwarekwa	
41	Patricia Dongai	F	"	
42	Junior peter	M	"	
43	Prichard charles	M	"	
44	Samuel Kwalomae	M	"	SK
45	TOME DAE	M	Sulu harbour	TD
46	EDWIN KOVEKE	M	PST	
47	Jaysie Boape	F	Egis - tz	
48	Wendy Mark	F	Egis - Azimuth	
49	LAWRENCE WAWANE	M	MID	
50	Rowena Tootoiona	F	Egis - Azimuth	
51	Sally Pita	f	PST	
52	Kelly Wanefolo	M	MID	
53				
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Appendix D. 4: Aibareo Meeting

MEETING MINUTES

Malaita (North & South Bridges)

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	30th August 2023	**Time:**	*12noon*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	*Aibareo*
		Bridge Site	*Suú Harbor*

1. Project Team

Name	**Position**	***Organization***
Salome Pita	National Safeguards Specialist	Project Support Team (PST)
Edwin Koveke	Environment and Social Safeguards Officer	Project Support Team (PST)
Joy Faulkner	Community Liaison Officer	Project Support Team (PST)
Rowena Toito'ona-Totori	Civil Engineer	Egis-Azimuth
Wendy Mark	Environment and Social Safeguards	Egis-Azimuth
Jaysie Boape	Environment and Social Safeguards	Egis-Azimuth
Lawrence Wawane	Regional Manager - Engineer	Ministry of Infrastructure & Development (MID)
Kelly	Works Supervisor-Malaita Province	Ministry of Infrastructure & Development (MID)

2. Agenda

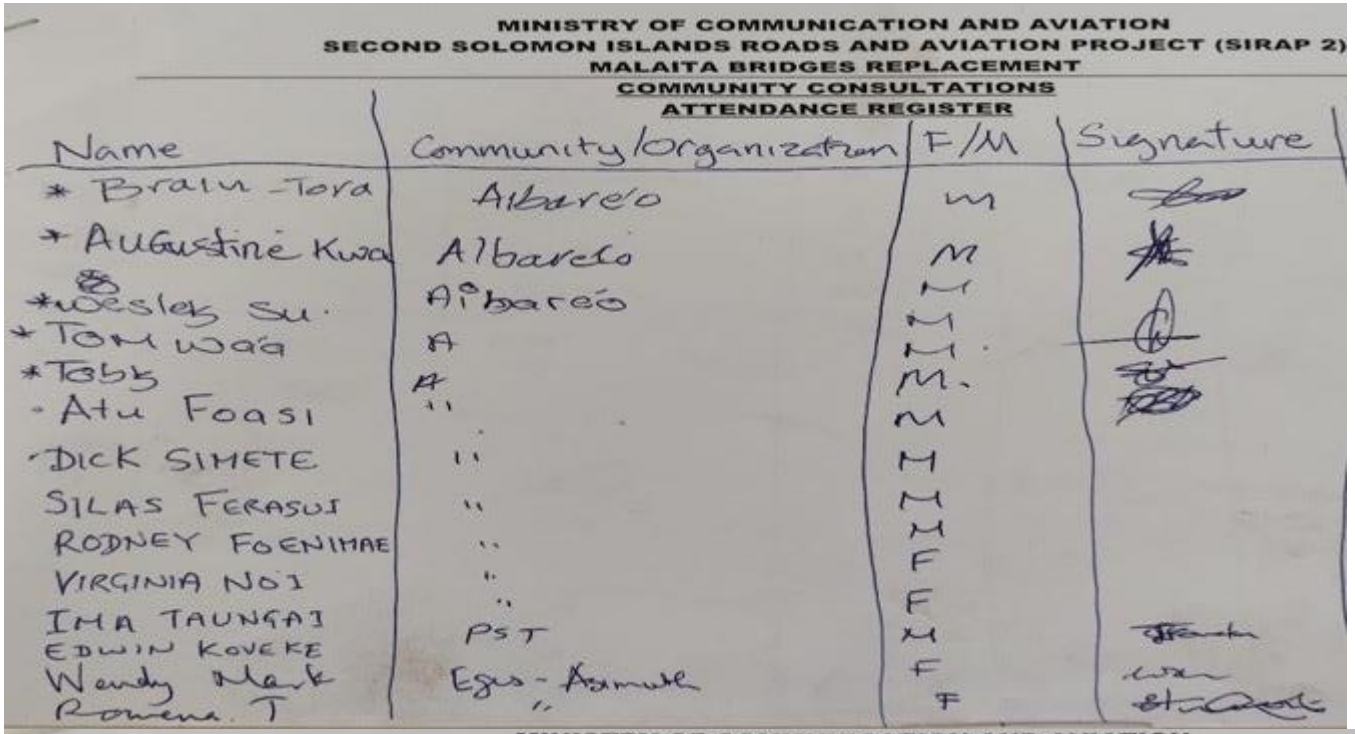
Topic	**Presenter**	**Organisation**
Introducing the Project Team	Lawrence Wawane	MID
Project Background	Salome Pita	SIRAP-PST
Design Presentation (including Safeguards)	Jaysie Boape Rowena Toito'ona Wendy Mark	Egis- Azimuth

3. Meeting1 Notes/Questions/Comments Responses

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	30th August 2023	**Time:**	*12noon*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	*Aibareo*
		Bridge Site	*Suú Harbor*

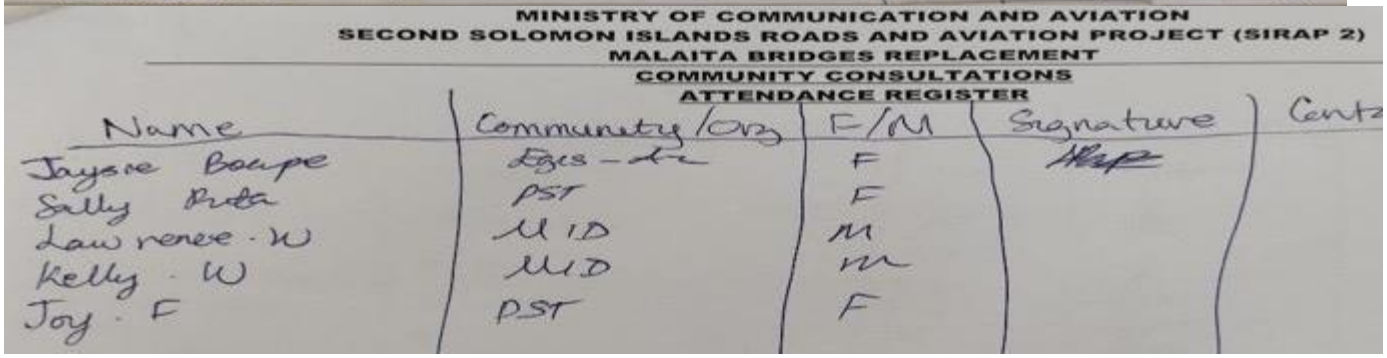
• What is the timeframe for construction?	• MID responded that at the moment, the design consultant is working on the design. By end of October, the Consultant will submut the final design. It is likely that construction will start early next year.
• Where will local materials (gravel and Stones) be sourced from?	• MID responded Local materials will be of required standards/specifications. If contractor require to source local materials, they will consult and negotiate with landowning groups.
• Coastal flooding during high tides and bad weather events is common along the vicinity to the temporary bridge location.	• Egis/Azimuth Team asked, when was the community experienced high high tide? and the community responded: December and June, the community always experience high tide. December 2022 is the when the community experince the highest tide and it also flooded the village. During the trade winds, high tides sometimes flooded the roads. • Where the old bridge was, it was safer.
• What will happen to the market stalls along the roadside or near the bridge? Will it be compensated?	• MID responded, during construction, work will be on the existing alignment and the ROW is 30m (15m from centreline on both sides). Therefore, if any betel nut stall is within the ROW, then owner will need to voluntary remove it then rebuild it outside of the ROW.
• Will there be recruitment of local unskilled workers?ie security officers etc	• Yes, the contractor will need local unskilled worker. if the contractor needed local unskilled workers, the contractor will let the community know and they will recruit.

Attendance Register



MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

Name	Community/Organization	F/M	Signature
* Braiu -Tora	Albareo	M	
* Augustine Kwa	Albareo	M	
*Wesley Su.	Albareo	M	
* Tom Waa	A	M	
*Tobb	A	M.	
- Atu Foasi	"	M	
- Dick Simete	"	M	
Silas Ferasui	"	M	
Rodney Foenimae	"	M	
Virginia Noi	"	F	
Ima Taungai	"	F	
Edwin Koveke	PST	M	
Wendy Mark	Egus - Asamuta	F	
Rowena T	"	F	



MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

Name	Community/Org	F/M	Signature	Cent
Jaysee Boupe	Egus - Asa	F		
Sally Pita	PST	F		
Lawrence W	MID	M		
Kelly W	MID	M		
Joy F	PST	F		

Appendix D.5: Canan Meeting

MEETING MINUTES

Malaita (North & South Bridges)

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	*30/08/2023*	**Time:**	*2pm*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Canan
		Bridge Site	*Suú Harbor*

1. Project Team

Name	Position	*Organization*
Salome Pita	National Safeguards Specialist	Project Support Team (PST)
Edwin Koveke	Environment and Social Safeguards Officer	Project Support Team (PST)
Joy Faulkner	Community Liaison Officer	Project Support Team (PST)
Rowena Toito'ona-Totori	Civil Engineer	Egis-Azimuth
Wendy Mark	Environment and Social Safeguards	Egis-Azimuth
Jaysie Boape	Environment and Social Safeguards	Egis-Azimuth
Lawrence Wawane	Regional Manager - Engineer	Ministry of Infrastructure & Development (MID)
Kelly	Works Supervisor-Malaita Province	Ministry of Infrastructure & Development (MID)

2. Agenda

Topic	Presenter	Organisation
Introducing the Project Team	Lawrence Wawane	MID
Project Background	Salome Pita	SIRAP-PST
Design Presentation (including Safeguards)	Jaysie Boape Rowena Toito'ona Wendy Mark	Egis- Azimuth

3. Meeting1 Notes/Questions/Comments	Responses
• The community confirmed that the name of the river which the bridge will be built across is 'Aebareo'	• The team take note of this as it is good to be consistent with names.
• The team asked the community where they source water from?	• The village people responded they use well for bathing and drinking they use rain water.
• During high tides, the roads are flooded with salt water therefore if the road approaching the bridge be raised?	• The team take note of this comment and will inform the design team.
• When the bridge was damaged by logging truck, it also affected the children as to get them across to the other side, they have to pay for $2 every day. And as the project will be constructing a new bridge, it will be very helpful as it will provide better bridge and safe crossings for school children.	

Attendance Register

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

Date:	30/08/23	Start Time:	2pm	Community:	Canan
		End Time:	2:45pm	Venue:	Su'a harbor wharf Area

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
1	Thomas Tom	M	Canaian	
2	Harry KaBoni	M	Canaian	
3	Grace Noabata	F	Canaan	
4	Eddy Kakasi	M	Canaan	
5	Juliee Sufiona	F	Canaian	
6	Margret Kato	F	Canaian	
7	Beverlyn Moos	F	Canaan	
8	Tom Aufooa	M	Canaian	
9	Peter Toasi	M	Canaian	
10	Kevin Sufiona	M	Canaian	
11	Cynta Sufiona	F	Canaian	
12	Jenifer Feresu	F	Canaian	
13	Desika	F	Canaian	
14	Cecilia Aaoko	F	Canaian	
15	Wendy Mark	F	Egis-Azimuth	
16	Sally Pita	F	PST	
17	Jaysie Boupe	F	Egis - Az	
18	Rowena Toitoiona	F	Egis-Azimuth	

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
19	Kelly Wanefisi	M	MID	
20	EDWIN KOVEKE	M	PST	
21	Faulkner	F	PST	
22	LAWRENCE WANAANE	M	MID	
23				

Appendix D.6: Kolofe Meeting

MEETING MINUTES

Malaita (North & South Bridges)

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	1st September 2023	**Time:**	*12noon*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Kolofe
		Bridge Site	Kolofe 1 & 2 (Ru'u)

1. Project Team

Name	**Position**	***Organization***
Salome Pita	National Safeguards Specialist	Project Support Team (PST)
Edwin Koveke	Environment and Social Safeguards Officer	Project Support Team (PST)
Joy Faulkner	Community Liaison Officer	Project Support Team (PST)
Rowena Toito'ona-Totori	Civil Engineer	Egis-Azimuth
Wendy Mark	Environment and Social Safeguards	Egis-Azimuth
Jaysie Boape	Environment and Social Safeguards	Egis-Azimuth
Lawrence Wawane	Regional Manager - Engineer	Ministry of Infrastructure & Development (MID)
Kelly	Works Supervisor-Malaita Province	Ministry of Infrastructure & Development (MID)

2. Agenda

Topic	**Presenter**	**Organisation**
4. Introducing the Project Team	Lawrence Wawane	MID
5. Project Background	Edwin Koveke	SIRAP-PST
6. Design Presentation (including Safeguards)	Rowena Toito'ona Wendy Mark	Egis- Azimuth

3. Meeting1 Notes/Questions/Comments	Responses

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	1st September 2023	**Time:**	*12noon*
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Kolofe
		Bridge Site	Kolofe 1 & 2 (Ru'u)

• Is there a rough 3d design of the two bridges for the community people can see how the bridge will be like?	• Egis- Azimuth team responded that there are no 3D designs pictures to see the complete bridge . Currently, the team is collecting data, however, once the bridge design is finalised, the team can request for a 3-D photo of the bridges to share in the next visitation.
• Can the bridge level/height (Kolofe 1) be high, above the 1m freeboard? In 1993, that is the only year, that the community have witnessed flooding the rised above its normal level and almost reaching the bridge height. This is during normal rain season. However, after 1993, this did not occur again.	• Egis- Azimuth team noted the comment.
• It is best to construct the bridge at the origional bridge site as it has a strong foundation, rocks on both approaches.	• Egis- Azimuth team noted the comment.
• MID informed the community people on the Road Act - ROW (15m on both sides of the road from centreline).The construction of the bridge will be within origional bridge location. If there are market stalls built within the ROW, owners will have to remove it before the start of Projects actual construction works.	• The community people take note of the information provided by MID.
• For Kolofe 2 (Ru'u), flood level is always high and sometimes flood water goes over the bridge., similar to Kolofe 1.	• Egis- Azimuth team noted the comment.
• The Community people were asked about what some of the river uses are because during construction, the down stream will be temporarily disturbed.	• The community people mentioned that they use the rivers for swimming, bathings etc. During construction, they can move upstream for bathings and swimming.
• Is the bridge design takes into account the climatic events	• The bridge is designed for a 100 years life span and during the design, all rainfall data including seismic data are collected from relevant departments and the data are analysed and provides basis for the design.
• MID advised the community people also to not cut trees along edges of the rivers as this will cause scour related problems and have great impacts to the bridges.	• The community people take note of the information provided by MID.
• The community people thanked the team for project awareness and also for sharing the design. It is for their good and benefit and appreciative of the project.	

Attendance Register

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

Date:	1/9/23	Start Time:	1:30pm	Community:	~~Kolofe~~ At Kolofe (A'akwa Bridge)
		End Time:	2:15pm	Venue:	Kolofe Community Hall

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature	Mobile Phone #
1	JUNIOR · DOLOFERA	M	KOLOFE		
2	REGINA · KWAMANI	F	"		
3	~~THEP~~ TERESIA · KOFUI	F	"		
4	ELIJAM Arutaki	F	"		
5	Timothy Difio	M	"		
6	BONIS Joseph	M	"		
7	Joe Alaisio	M	"		
8	Clement Oiau	M	"		
9	LIONEL IKETEA	M	Kolofe		
10	PETER LEDI	M	"		
11	RICKSON IRO	M	Kolofe		
12	SIMON ONAI	M	"		
13	Reginal [illegible]	M	"		
14	SILAS FRANCIS	M	"		
15	Reginal Som	M			
16	Reuben Labufunu	M			
17	Christina Ladoi	F			
18	Hellen FAFMODA	F			

MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

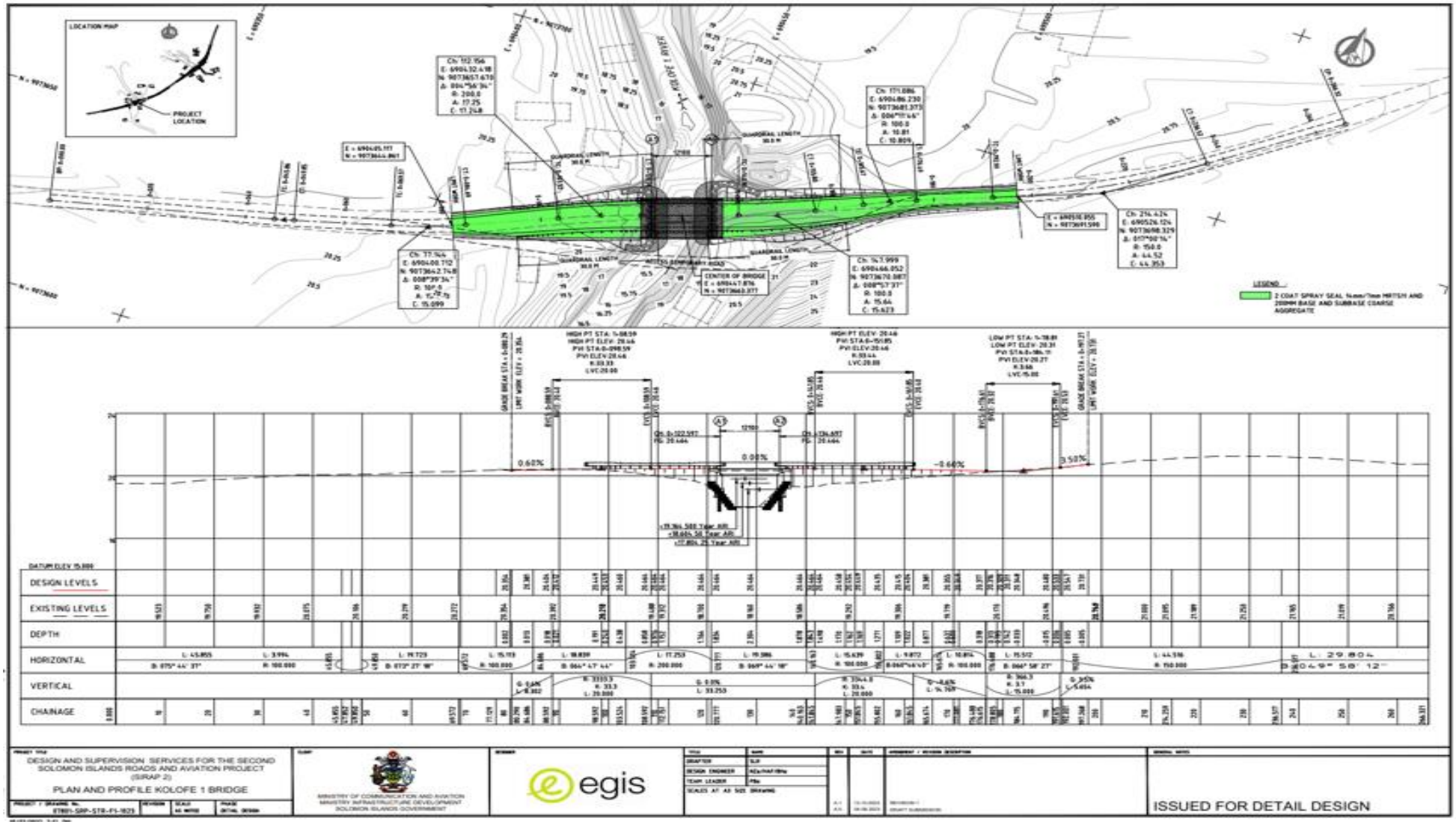
No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
19	ETHEL Simon	F		
20	PHILIP	M		
21	Theresia Maetabu	F		
22	marry	F		
23	JOSEPH	M		
24	Obed Obi	M	Kafodalo	
25	Lawrence Ikotea	M	Kolofe	
26	Ellen Tony	F	Kolofe	
27	Davis Rofeta	M	Kolofe	
28	~~LOUIS~~ Kotea	M	Kolofe	
29	Im ~~Ito~~	M	Kolofe	
30	Simon L	M	Kolofe	
31	Dola	M	Kolofe	
32	Johnson	M	Kolofe	
33	Philip	M	Kolofe	
34	Joseph Oneálanga	M	Kolofe.	
35	Edward Talakwai	M	Kolofe	
36	Monica Kekete	F	Kolofe	
37	Solomon Kala	M	Kolofe	
38	Lawrence Guigmani	M	Kolofe	
39	John Robert	M	Kolofe	

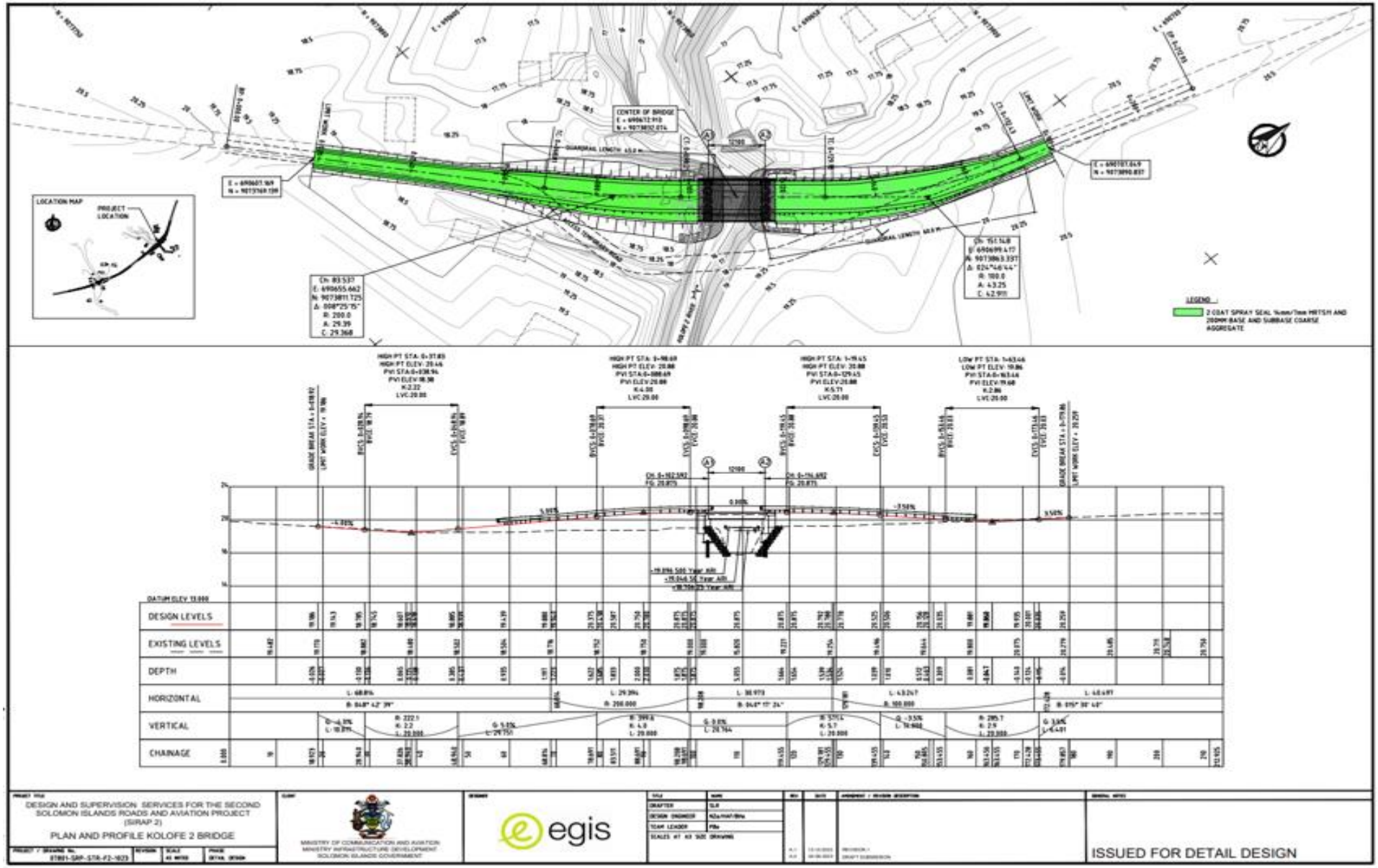
MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
MALAITA BRIDGES REPLACEMENT

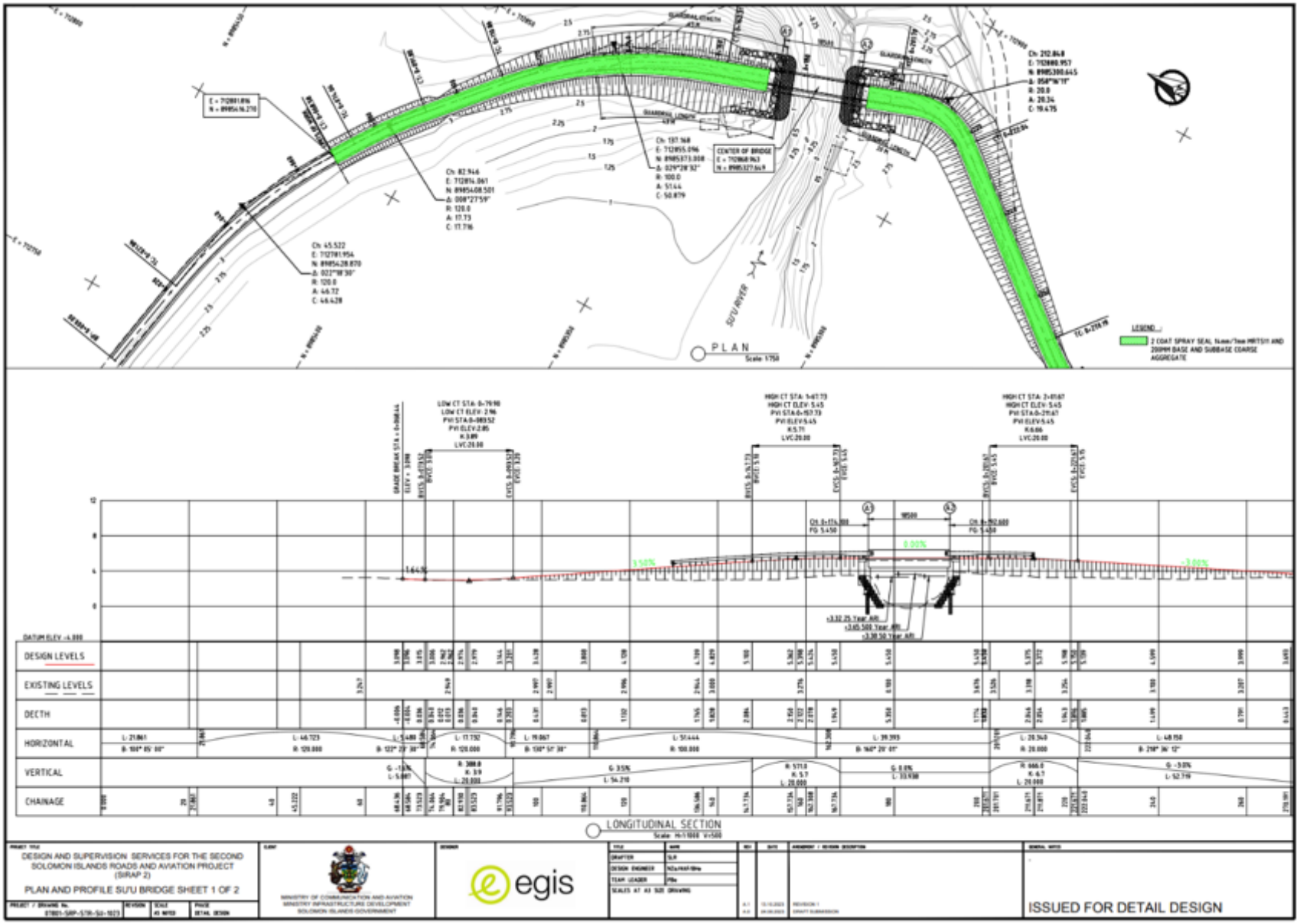
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

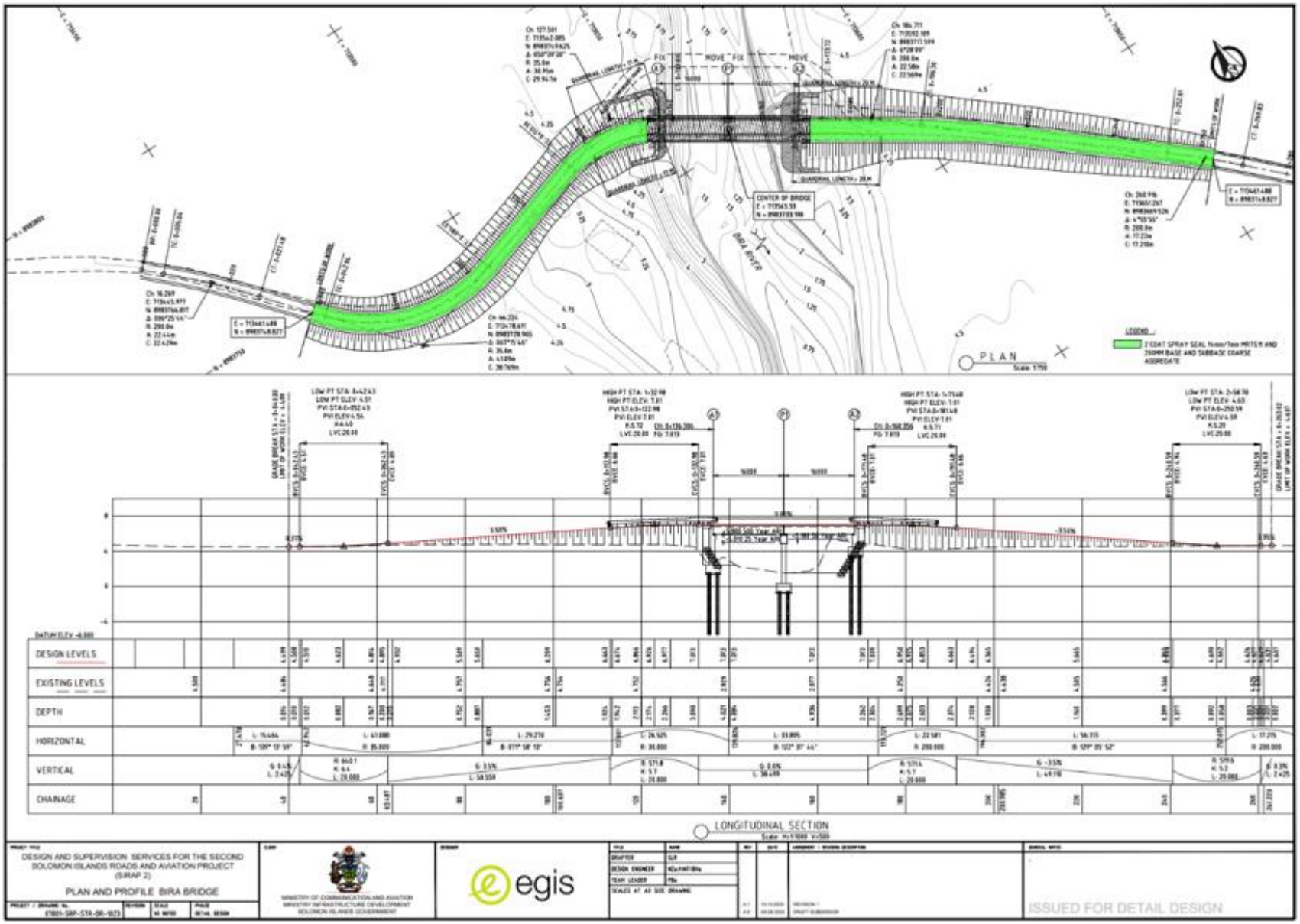
No.	Name	Male (M)/ Female (F)	Community/ Village	Signature
40	Rowena Taoto'ona	F	~~Kotofe~~ Egas-Az	
41	Wendy Mark	F	Egas - Azimuth	
42	Jaysie Boape	F	Egas - Azimuth	
43	Sally Puta	F	PST	
44	Kelly Wane	M	MID - Auki	
45	Lawrence - Wauwne	M	MID	
46	Jay Faulkner	F	PST	
47	Edwin Kaveke	M	PST	
48				
49				

Appendix E: Technical Designs




LOCATION MAP
PROJECT LOCATION
CENTER OF BRIDGE
LEGEND
2 COAT SPRAY SEAL
DESIGN LEVELS
EXISTING LEVELS
DEPTH
HORIZONTAL
VERTICAL
CHAINAGE
DESIGN AND SUPERVISION SERVICES FOR THE SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
PLAN AND PROFILE KOLOFE 2 BRIDGE
MINISTRY OF COMMUNICATION AND AVIATION
MINISTRY INFRASTRUCTURE DEVELOPMENT
SOLOMON ISLANDS GOVERNMENT
egis
ISSUED FOR DETAIL DESIGN


PLAN
Scale 1:750
LONGITUDINAL SECTION
DESIGN LEVELS
EXISTING LEVELS
DEPTH
HORIZONTAL
VERTICAL
CHAINAGE
DESIGN AND SUPERVISION SERVICES FOR THE SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
PLAN AND PROFILE SUʻU BRIDGE SHEET 1 OF 2
egis
ISSUED FOR DETAIL DESIGN


PLAN
LONGITUDINAL SECTION
DESIGN LEVELS
EXISTING LEVELS
DEPTH
HORIZONTAL
VERTICAL
CHAINAGE
DESIGN AND SUPERVISION SERVICES FOR THE SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
PLAN AND PROFILE BIRA BRIDGE
egis
ISSUED FOR DETAIL DESIGN