Second Solomon Islands Roads and Aviation Project (SIRAP2)

Noro Roads Improvement, Environmental and Social Management Plan (ESMP), New Georgia Island

Version 1.4 (Final), October 2023

Prepared by SIRAP Project Support Team

Version Control

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Glossary and Abbreviations

AP	Affected Person/People
CESMP	Contractors 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
IA	Implementing Agency
IFC	International Finance Corporation
GBV	Gender Based Violence
GRM	Grievance Redress Mechanism
IUCN	International Union for Conservation of Nature
LMP	Labour Management Procedure
MCA	Ministry of Communication and Aviation
MID	Ministry of Infrastructure and Development
MUA	Munda International Airport
NGOs	Non-government organisations
OHS	Occupational Health and Safety
PCCSP	Pacific Climate Change Science Program
PER	Preliminary Environmental Report
PIB	Public Information Bulletin
PPE	Personal protective equipment
PSC	Project Steering Committee
PST	Project Support Team
PWD	Public Works Department
RP	Resettlement Plan
RWY	Runway
SEP	Stakeholder Engagement Plan
SIG	Solomon Islands Government
SIWA	Solomon Islands Water Authority
STD	Sexually transmitted diseases
SWM	Solid Waste Management
SWMP	Solid Waste Management Plan
TMP	Traffic Management Plan
WB	World Bank

Executive Summary

The Solomon Islands Roads and Aviation Project (SIRAP) has been established to improve the climate resilience and safety of the Solomon Islands roads and aviation sector. Following the implementation of SIRAP, the second phase of works is starting (SIRAP2). Through SIRAP and SIRAP2, the Solomon Island Government (SIG) and the World Bank (WB) are working together 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). The participating locations in SI are:

- Honiara International Airport (HIR) located in Honiara, Guadalcanal.
- Munda International Airport (MUA) located in Munda, New Georgia Island.
- Existing road network on Malaita Island and Noro Town on New Georgia Island.
- Sealing of the Santa Cruz Airport runway on Nendo Island.

SIRAP2 is a 'substantial' risk project under WB Environmental and Social Framework and requires the development of a site-specific Environmental and Social Management Plan (ESMP). 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 1.4 (Final), focuses on upgrading works for identified sealed and unsealed roads in Noro town on New Georgia Island and includes information on mitigation, monitoring, responsibilities and institutional capacity. The scope of upgrade works is described in detail in Section 2 and summarised below:

- Sealing of 4.4 km of gravel roads,
- Resealing of 5.5 km of sealed roads, and
- Appropriate pothole/edge repairs, basecourse corrections, culvert/drainage improvement, and road safety improvements.

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. 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, and
- Water demand management for freshwater resources.

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 D,
- Regular supervision and monitoring of the implementation of the ESMP (refer ESMP monitoring plan), and
- Meaningful and ongoing consultations with the Noro communities during the design and construction phases of this project.

1 Introduction

1.1 Background

The SIG, with WB financing, is implementing SIRAP to improve the climate resilience and safety of the 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 of 9.9 km graveled and sealed sections of Noro town roads and towards Munda Airport as a high priority in the National Transport Plan (NTP) 2017-2036. Located in New Georgia Island, Western Province, the Noro Roads upgrading will contribute to improved connectivity through the Noro port.

SIRAP and SIRAP2 are also undertaking improvements to infrastructure and the runway at Munda Airport, 18km away from Noro and the upgrades to the road are complimentary to and will build on the achievements of SIRAP, with the development objective of improving the climate resilience and safety of the communities' 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
- Road resealing for sealed roads
- Subbase upgrade and sealing of unsealed roads
- Aggregate extraction
- Construction / installation of road and road safety infrastructure
- Management of road construction traffic
- Management of local traffic at the construction interface
- Decommissioning of laydown site

The objective of the ESMP is to provide a set of stipulations for managing the road rehabilitation, sealing and resealing 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 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 consultation. The mitigation measures associated with the impacts identified above are detailed below.

This ESMP is limited to the scope of works for the Noro Roads upgrades 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, 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 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 Noro Roads ESMP will be made available on the WB external website, on the SIRAP2 project website and in hard copy at the PST office in Kukum near HIR.

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 Project Descriptions

2.1 Current Situation

The total road network in Western Province is 150.3km and under SIRAP 2, 9.9km of this road network particularly in Noro, was selected for upgrading. Noro is located on the northwestern part of New Georgia island in Western Province. It is one of the most populous peri urban centers in Solomon Islands. The town hosts the second largest industrial port and is about 18km from the country's second largest and international airport in Munda. Noro is also within the tourism hub of Western Province. The road improvement will directly provide access to daily employment as well as access to social, health and education services.

Noro road has deteriorated over the past years, sealed sections of the road has been damaged and conditions of unsealed sections has worsened. The project has selected Noro roads for upgrading as it is a high priority road for upgrading since the road is at its end of service life and is failing. Therefore, there is a need to strengthen road durability and connectivity is essential during rainy seasons.

2.2 Overview of the Proposed Works

Component 2 of SIRAP2 provides for climate resilience and safety investments in the road sector. It provides for the Noro Roads improvement which will include:

a) Upgrade subbase and seal 4.4 km of gravel roads,
b) Resealing of 5.5 km of sealed roads, and
c) Appropriate pothole/edge repairs, base courses corrections, culvert/drainage improvement, and road safety improvements.

The proposed works is expected to improve the current road conditions and have a lasting impact on the road's usability taking into account increased frequency of severe weather events resulting in fast deteriorating of the roads, drains and causing flooding. Table 1 below shows the road sections under the Noro Roads upgrading under SIRAP2.

Table 1: Sealed and Unsealed Noro Roads sections Under SIRAP 2

Road No.	Name of Road	Type Length (m)		Total Length (m)
		Sealed	Unsealed	
1	**Noro Highway + Tausinga Road** - Soltuna to Church Access Rd	3,435	780	4,215
2	**Mobile Road** - Road 1 to Oil Depot		438	438
3	**Kitano Road** - Noro-Munda Road to Road 1	296		296
4	**Noro-Munda Road** - town section	551		551
5	**Noro Industrial Site Road** - Munda Road to Industrial Estate		1,494	1,494
6	**Ports Exit Road** - Road 1 to Port Exit		362	362
7	**Ports Entry Road** - Road 1 to Port Entrance		157	157
8	**Customs Road** - Custom Circuit	330		330
9	**Town Council Drive** - Road 1 to commercial area	235		235
10	**Market Road** - Town Council Road to market		138	138
11	**COC Road** - Road 1 to Bonito Drive		600	600
12	**Baru Feeder Road** - Road 1 to Bonito Drive		138	138
13	**Catholic Road** - Bonita Drive to community		270	270
14	**Bonito Drive** - loop from Road 1 to Road 1	626		626
	TOTAL	**5,473**	**4,377**	**9,850**

Figure 1: Proposed sealed (blue) and unsealed (green) roads targeted for improvement under this project

Roads in Noro Town can be generally classified as primary roads or main roads, secondary roads (feeder roads) and tertiary roads (residential roads). There are 14 sections of road to be improved or

upgraded and most of which are linked to the Noro Highway as a primary road. The remaining sections are secondary and tertiary roads that connect to the main road or Noro Highway.

The road will not be widened, works will be undertaken on the existing road footprint. The section of Noro 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.

A standard road and pavement width of 4 to 10m with a road shoulder width of 1m (on either side of the road) is proposed. The typical road cross section for most roads is as shown in **Error! Reference source not found.** below.

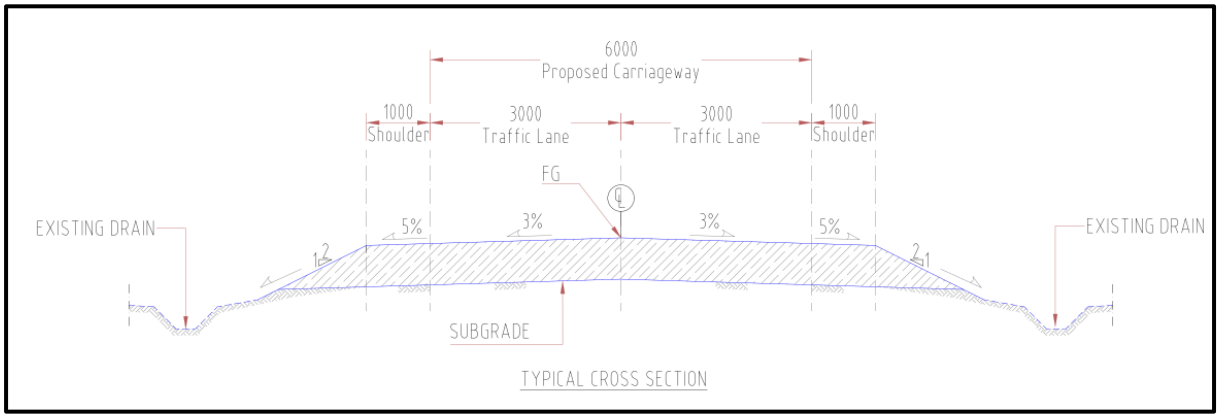


Figure 2: Typical cross section

Existing drainage systems are generally insufficient and lacking along most of the road sections. Remedies include unlined and lined trapezoidal drainage systems. These are open drainage on the side of the road which will assist in keeping water away from the pavement layers and maximizing the pavement life. The drains will be designed to fit within the existing road footprint so that existing property boundaries are not impacted by the works. There is one particular area identified as susceptible to flooding, which is along the Noro – Munda Road (Ch. 00 to Ch. 340) where the existing drainage is not functioning efficiently and often results in flooding of the surrounding areas north of Noro Highway. A typical cross section of the road and drainage is as shown in **Error! Reference source not found.**.

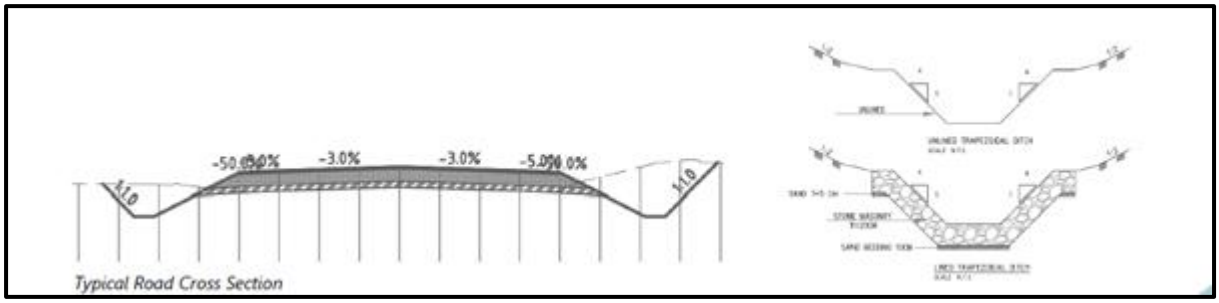


Figure 3: Typical Drainage Cross Section

The civil works of the reseal subproject will consider the need to provide climate resilient infrastructure solutions that are fit for purpose and have appropriate road safety enhancements.

2.2.1 Types of Proposed Road Pavement

The major road construction activities include the construction of drainage systems and flexible and rigid pavements. Four types of pavements are proposed depending on the traffic level and road usage. These pavements are divided into 3 types of flexible pavements and 1 type of rigid pavement which is

of the plain concrete pavement (PCP). A summary of the types of proposed pavements including layers and materials that will be used is shown in the table below, Table 2.

Table 2: Summary of the types of proposed pavement layers and materials

Pavement Types	Surfacing	Asphalt	Prime	Seal	Base	Sub Base	Design Subgrade
Flexible Pavement (Type 1)	✓	✓	✓	✓	✓	✓	✓
Rigid Pavement (Type 2)	✓				✓	✓	✓
Flexible Pavement (Type 3)	✓		✓	✓	✓	✓	✓
Flexible Pavement (Type 4)	✓		✓		✓	✓	✓

Type 1 and Type 2 pavements is proposed for high volume of traffic roads and roads which are mainly used by heavy machineries and used most of the time. For light volume traffic and residential roads, pavement Type 3 and Type 4 is proposed. Details of the proposed pavements layers, materials and thickness of layers is attached in Appendix G.

A summary table of the existing condition and proposed works for each of the sections of the Noro Roads for upgrading based on preliminary detailed design information is shown below.

Table 3: Existing Road conditions and proposed pavement

No.	Code	Name of Road	Chainage (CH)		Length	Existing Condition	Proposed Pavement (Type)	REMARK	Pavement Width (m)		Road Shoulder (both side)	Space Drainage & Batter Slope (both side)	Total
			From	To	(m)				EXISITING	PROP.			
1	NR01	Noro Highway + Tausinga Road - SolTuna to Church Access Road											
1a.	NR01A	Noro Highway (Port Entry Road to SolTuna)	4243.00	3020.00	1223.00	Sealed	1A	High Strength Flexible	6.00	6.00	2.00	7.00	15.00
1b.		Noro Highway (Port Entry Road to Coc Road Junction)	3020.00	2360.00	660.00	Sealed	3B	Low Strength Flexible	6.00	6.00	2.00	7.00	15.00
1c.		Noro Highway (Coc Road Junction to Tausinga Road)	2360.00	780.00	1580.00	Sealed	3A	Low Strength Flexible	6.00	6.00	2.00	7.00	15.00
1d.	NR01B	Tausinga Road	780.00	700.00	80.00	Unsealed	4C	Spray Seal	4.00	6.00	2.00	7.00	15.00
1e.	NR01B	Tausinga Road (Transition From 3.5 To 6.0m Road)	700.00	680.00	20.00	Unsealed	4C	Spray Seal	3.50	3.50-6.00	1.50	7.00	12.00-14.50
1f.	NR01B	Tausinga Road	680.00	180.00	500.00	Unsealed	4C	Spray Seal	3.50	3.50	1.50	7.00	12.00
2	NR02	Mobile Road - Road 1 To Oil Depot	0.00	430.00	430.00	Unsealed	4C	Spray Seal	5.00	6.00	2.00	7.00	15.00
3	NR03	Kitano Road - Noro-Munda Road to Road 1	0.00	303.50	303.50	Sealed	1B	High Strength Flexible	4.00	6.00	2.00	7.00	15.00
4a	NR04	Noro-Muda Road- Town Section	0.00	340.00	340.00	Sealed	1B	High Strength Flexible	6.00	6.00	2.00	7.00	15.00
4b	NR04	Noro-Muda Road- Town Section	340.00	551.00	211.00	Sealed	3C	Low Strength Flexible	6.00	6.00	2.00	7.00	15.00
5a	NR05	Noro Industrial Site Road - Munda Road to Industrial Estate	0.00	1492.00	1492.00	Unsealed	3B	Low Strength Flexible	5.00	6.00	2.00	7.00	15.00
5b	NR05	Noro Industrial Site Road - Munda Road to Industrial Estate	0.00	1492.00	1492.00	Unsealed	4B	Spray Seal	5.00	6.00	2.00	7.00	15.00
6	NR06	Ports Exit Road - Road 1 To Port Exit	180.00	391.00	211.00	Unsealed	2A	High Strength Rigid	6.00	6.00	2.00	7.00	15.00
7	NR07	Ports Entry Road - Road 1 To Port Entrance	0.00	351.00	351.00	Unsealed	2A	High Strength Rigid	6.00	6.00	2.00	7.00	15.00
8	NR08	Customs Road - Custom Circuit	0.00	336.00	336.00	Unsealed	4A	Spray Seal	4.00	4.00	2.00	7.00	13.00
9	NR09	Town Council Drive - Road 1to Commercial Area											
9a.		Town Council Drive (Existing Concrete Section)	0.00	60.00	60.00	Concrete	Existing concrete		6.00				0.00
9b.		Town Council Drive (Extend to Jetty)	60.00	142.60	82.60	Sealed	3E	Low Strength Flexible	6.00	6.00	2.00	7.00	15.00
9c.		Town Council Drive (Extend to Market)	80.00	181.00	101.00	Sealed	3E	Low Strength Flexible	10.00	10.00	0.00	7.00	17.00
10	NR10	Market Road - Town Council Road to Market	0.00	130.00	130.00	Unsealed	3D	Low Strength Flexible	10.00	10.00	0.00	7.00	17.00
11	NR11	Coc Road - Road 1 To Bonito Drive											
11a.	NR11	Coc Road (Existing Concrete)	0.00	40.00	40.00	Concrete	Existing concrete		5.00				0.00
11b.	NR11	Coc Road (Steep Gradient)	40.00	60.00	20.00	Unsealed	2A	High Strength Rigid	4.00	6.00	2.00	7.00	15.00
11c.	NR12	Coc Road (Transition from Steep To Flat Section)	80.00	160.00	80.00	Unsealed	2A	High Strength Rigid	4.00	6.00	2.00	7.00	15.00
11c.	NR11	Coc Road (Flat)	160.00	200.00	40.00	Unsealed	4C	Spray Seal	4.00	6.00	2.00	7.00	15.00
11c.	NR11	Coc Road (Existing Slab at Steep Section)	200.00	290.00	90.00	Unsealed	4C	Spray Seal	4.00	6.00	2.00	7.00	15.00
11c.	NR11	Coc Road (Ch.290 To Bonito Drive)	290.00	600.00	310.00	Unsealed	4C	Spray Seal	4.00	6.00	2.00	7.00	15.00
12	NR12	Baru Feeder Road - Road 1 To Bonito Drive	0.00	273.50	273.50	Unsealed	4C	Spray Seal	4.00	6.00	2.00	7.00	15.00
13	NR13	Catholic Road - Bonita Drive to Community	0.00	288.32	288.32	Unsealed	4B	Spray Seal	4.00	6.00	2.00	7.00	15.00
14	NR13	Bonito Drive - Loop from Road 1 To Road 1	0.00	970.86	970.86	Sealed	4B	Spray Seal	5.00	6.00	2.00	7.00	15.00

2.3 Construction Methodology

2.3.1 Aggregate Supply

Base and sub-base courses will be constructed of local river gravel and local coronus material where this is found to be suitable (based on testing).

The improvement of the roads will require a significant amount of coronus and river gravel materials for filling and for concrete and asphalt concrete production. There are known existing sources of coronus and river gravel materials that had been used by MID in Guadalcanal Province and known sources of coronus along Noro – Munda Road but no river gravel sources within the proximity of Noro.

Necessary arrangements will be made by the contractor to source or quarry, crush and transport river aggregates and if needed coronus from Honiara. 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 D. 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 of coronus at areas closer to Noro 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 area for the installation and operation of a crusher to crush river gravel to specified sizes for the works. Surrounding the crusher proper drainage system must be constructed and silt or sediment fences must be installed to avoid siltation into the surrounding environment.

Supply of bitumen and hard rock aggregate for asphaltic concrete and sealing will be sourced from overseas.

2.3.2 Equipment and Workforce

The construction activities will require site establishment facilities and road construction equipment such as rollers, backhoes, track mounted excavators, gravel delivery trucks or tipper trucks, water cart, bitumen sealing trucks, asphalt pavers and other equipment. Heavy plant as well as specialized equipment to prepare DBST seals will be required to undertake the civil works.

Workforce required will include plant operators, skilled and unskilled labor, managers and site supervisors, engineers, and ancillary staff such as cooks and security guards. This is expected to reach at least 25-30 workers or more. The contractor shall manage and recruit skilled and unskilled labors according to the requirements of the Workers and Labor Influx Management Plan attached in Appendix D. The supervision engineer will ensure that all workers and personnel including the contractor and subcontractor involved in the project complies with the Code of Conduct attached in Appendix E.

2.3.3 Temporary Areas

2.3.3.1 Laydown Area

Laydown sites for staging of the civil works, preparation of DBST, processing of aggregate and producing concrete will be needed along the route. Separate stockpile sites may also be required for aggregates along the route. This temporary laydown area will be established in close proximity of Noro Town. The site will generally consist of the project offices, storage and stockpiling areas, asphalt and batching plant, crusher and other relevant facilities. At this stage a suitable location has not been confirmed and this will be identified and described by the contractor in the CESMP which will be subjected to WB clearance.

Establishment of the site will be in accordance with the requirements of the ESMP. Hence, it should be kept to a workable minimum area, the perimeter of the area must be fenced to secure materials and equipment and prevent entries from unauthorized access. Contractor will ensure that the site is manned by local security guards provided by a local security firm or personnels recommended by the Noro Town Council or Community Elders.

Before the establishment of the site the contractor must take into account locations within the site that the crusher, asphalt and batching plant will be located. Since these plants can produce nuisances such as noise and bad odor but this can be managed by proper consultations with communities and ensuring that work is undertaken during acceptable hours of work between 7am and 6pm. Setting up of the laydown area and management of activities within the area will comply with all the requirements of the ESMP and implementation of these mitigations. Additional mitigations identified by the Contractor, will also be detailed in the CESMP.

2.3.3.2 Contractor's Workers' Camp

The contractor's workers will comprise of both skilled and unskilled workers recruited from the surrounding communities, other islands in the country and international workers (managers and site supervisors). It is anticipated that there will be a need to establish a worker's camp for workers who are not from the surrounding communities.

To establish a workers, camp the contractor must ensure to comply with the steps required in the International Finance Corporation (IFC)/WB Workers Accommodation: Process and Standards Codes of Practice, that appropriate negotiations and consultations be done with the rightful landowner and appropriate land lease arrangements using rates approved by the Commissioner of Lands (CoL) are made with the landowner. This shall be approved by the Supervision Engineer and PST.

The contractor will be required to prepare A Workers Camp Management Plan in compliance with the guidelines provided in Appendix D. The 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 an influx of skilled workers. This plan is prepared to ensure that nonlocal workers are inducted on the local culture and to manage an inappropriate contact between the non-locals and the residents of the area and haulage routes that may result in GBV, sexual abuse and other miss conduct.

2.3.4 Traffic Management

Transportation of materials and equipment to and from the laydown area and the camp will be along the existing road. Measures to prevent accidents, dust, spillages, noise and vibration nuisances, impact on pedestrian and vehicle traffic shall be implemented by the contractor. Deviations from the approved routes will not be accepted unless approved by the supervising engineer.

One-lane traffic operations may be required for short, planned durations during construction works. Given the current width of the existing road corridor and vehicle usage, it is expected that traffic flow can be typically maintained. The contractor will be required to maintain access to houses, businesses and other services along the Noro Road for the duration of the construction, this approach will be detailed in the traffic management plan (TMP) for this project.

The haulage route for material transportation is not known at this stage. This will be determined by the contractor and will be reflected in the CESMP and detailed in the TMP. Required measures to mitigate anticipated impacts during the transportation of materials and equipment, and construction works will form part of the TMP.

2.3.5 Hazardous Substances

It is anticipated that hazardous or harmful wastes produced during the works will be from concrete asphalt sludge that needs to be disposed-off properly at an approved site including spills and leakages from other substances such as fuel, lubricants and oil. To contain the potential risk that hazardous substances will have on the environment hardstand areas must be prepared for storage of the hazardous substances and other equipment. This hardstand area must be bunded and runoffs shall be collected and treated by an oil-water separator to prevent contamination of soil or water bodies.

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 CESMPs appropriate management plan including Hazardous Materials Management Plan, Spill Prevention and Emergency Response Plan, within the Occupational Health and Safety (OHS) Plan and Waste Management Plan.

2.3.6 Waste Management

During the project activities solid wastes will be generated at the laydown and camp area and the construction areas or road sections. Solid wastes include general waste, recyclable and non-recyclable wastes inorganic waste, organics biodegradable waste, hazardous waste and other construction waste.

The contractor is responsible to liaise with the Noro Town Council to assess the possibility for disposing non-hazardous wastes at the Noro dumpsite. While other wastes deemed not allowed or permitted to be disposed at Noro dumpsite must be transported for disposal at the Ranadi landfill in Honiara. The Honiara City Council (HCC) should be contacted by the Contractor to assess this possibility of using this landfill.

Other wastes such as organic and biodegradable wastes and recyclable wastes can be stored on site at a location approved by the supervision engineer. However, if this waste is useful to the local community people with the approval of the supervision engineer the contractor can give this to the local community people.

The Contractor must develop a Solid Waste Management Plan (SWMP) according to the Solid Waste Management Plan guidelines attached in Appendix D for all generated waste, 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.

The contractor is responsible 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.

Spoil and excavated wastes as well as debris generated from the clearance, grubbing and excavation works shall be disposed at an approved location in consultation with Noro Town Council and approved by the Supervision Engineer. But excavated fill materials which are useful can either be used to backfill areas or used for rehabilitation and restoration of site. 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), 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.

2.3.7 Occupational Health and Safety

The contractor is required to adhere to all the occupational health and safety (OHS) requirements of the donor, World Bank, as per the donors Environmental Health and Safety (EHS) Guidelines. Including the Solomon Islands Government (SIG) legislation, Safety at Work Act, which safeguards all workers (full time, part time, permanent or casual) and those who work in connection with the development works. It is also important that workers must be trained in crucial methods to control, correct and respond to risks and hazards.

The OHS Management Plan Guidelines in Appendix D 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. Civil works shall not commence until the Supervision Engineer has approved the OHS Plan, the Safety Officer is mobilized and on-site, and the staff has undergone induction training.

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.

In light of 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.

2.3.8 UXO Clearance

According to the Protection of Wrecks and War Relics Act (Cap 150) Western Province is listed as a restricted area. Noro like Honiara and Munda were the sites of WW2 conflict and there will be possibility to discover numerous UXO's in the vicinity of the work sites. UXO clearance for the Noro Roads was undertaken for the Geotech Investigation test pit locations by the design and supervision

consultant. This was undertaken in August 2023 for 35 nominated test pit locations in which no UXO's were discovered. Further UXO Clearances will be required for Noro roads.

The Contractor will need to review any previous works undertaken, previous UXO surveys and if required, undertake any further UXO survey prior to commencement of works. In particular, the Contractor Laydown and Camp Area which are not covered in the UXO surveys. Clearance of any laydown site external to the area of works will be the responsibility of the Contractor upon mobilization.

2.3.9 Duration and Timing of Construction Activities

It is likely that the construction will be occurring at several of the Noro Roads, at any one time. Time for completion of construction is estimated to take approximately 18 months (12 months physical work + mobilisation & demobilisation). The timing of the works will be a factor with respect to wet weather delays. Some delays will be experienced if an above-average wet season is encountered during the construction.

Before the commencement of works the contractor is required to prepare and submit a detailed work plan showing the stages of works required and a CESMP together with its subplans.

Construction works shall be undertaken during the daytime hours of 7am and 6pm from Monday to Saturday, and any work outside the specified hours including Sundays and public holidays will only be permitted if approved by MID. 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 Noro roads 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 to ensure that they are familiar with and compliant to these Acts.

Table 4: 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 New Georgia Island falling under the governance of the Western 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 5: Schedule of the Provincial Government Act

below:

Table 5: Schedule of the Provincial Government Act

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 6 Permitting Requirements for the Noro Works below.

Table 6 Permitting Requirements for the Noro 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	Noro Town Council
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	Noro Town Council

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. On 27 March 2020, the SOE was extended to four months. 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 until 25 November 2020.

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.

On 24 November 2020, Emergency Powers (Covid-19) Regulations (No. 4) was issued for extension of SOE until 24 March 2021.

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[1] 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

[1] http://pubdocs.worldbank.org/en/324831581700447537/COVID-19-Guidance-for-Contractors-CO-Final.pdf

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 7: Relevant ESS to SIRAP2

Standard	Relevance from ESRS
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	The project will present a number of environmental and social risks and/or impacts. To manage those risks, the project will assess and manage the risks and impacts associated with the project in a manner that is proportionate to the significance of the potential risks and impacts. 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 contractors. The preparation of a Labour Management Procedure (LMP) will be included in the Environmental and Social Commitment Plan (ESCP) and will be required to be prepared during implementation but prior to contract bid document release. The LMP will include appropriate terms and conditions of employment, non-discrimination and equal opportunity, workers organisations, restrictions on child and forced labour, and OHS in design, construction and operational phases.
ESS 3: Resource Efficiency and Pollution Prevention	ESS 3 is considered relevant. The infrastructure investments 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 SIRAP2, 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 contractors 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 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.
ESS 6: Biodiversity Conservation and Sustainable Management of Natural Resources	ESS6 is considered relevant. During a preliminary screening using the integrated biodiversity assessment tool (iBAT), it is found that some small sections of the minor road upgrades activities at Noro will be located within a key biodiversity area (KBA), namely the Roviana-Vonavona. The KBA is the home of *Cheilinus undulatus* (Humphead Wrasse fish) which is classified as Endangered (IUCN Red List), and *Melonycteris fardoulisi* (black-bellied fruit bat) classified as NT or Near Threatened. Further screening will be conducted as part of site specific ESMP for roads at Noro. This standard is also relevant to the areas adjacent to the airports and construction facilities (workers accommodation and laydown area) that may need land clearing, and potential haulage routes. The project will conduct a screening on environmentally sensitive receptors along these areas. Biodiversity risks will be screened using direct observations, iBAT, the BirdLife International Data Zone tool, and the World Database of Key Biodiversity Areas.
ESS 8: Cultural Heritage	The ESS8 on cultural heritage may be relevant depending on existing sensitive receptors along the ROW of the two road improvement sections, and excavation works to be conducted on the airports. 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 are also being 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, nondiscrimination and equal opportunity (which includes a safe work environment free from violence and sexual harassment), workers' organizations, restrictions on child and forced labor, and OHS in design, construction, and operational phases.

STAKEHOLDER ENGAGEMENT PLAN (SEP): The SEP outlines a structured approach for community outreach and two-way engagement with stakeholders, in appropriate languages, and adopting measures to include vulnerable and disadvantaged groups (poor, disabled, elderly, isolated communities), and 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 SIRAP2.

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

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

4 Project Setting

An assessment of the existing conditions has been carried out based on an initial site visit to the Noro Roads (August 2021) and follow up site visit in September 2023[3], and field observations and a number of secondary sources.

4.1 Site Description

This section provides a brief description of the location and conditions of the existing road alignments.

4.1.1 The Noro Highway

Noro Highway is the main road running north-southern direction and vise-versa covering a total of 3.4km in length. The highway road begins near Soltuna Cannery Factory at CH 4200 and extends to the southern section of Noro Town at CH 780. It is a two-lane that provided access to businesses, offices and residences along the road section. The pavement along this section is deteriorated with potholes, broken edges and lacking drainage systems.

Noro Highway Road provide links through Noro Tuna Processing Plant, Noro International Port, Customs and the Markets. It also provided connectivity to Munda and Munda international airport through the Noro-Munda turnoff.

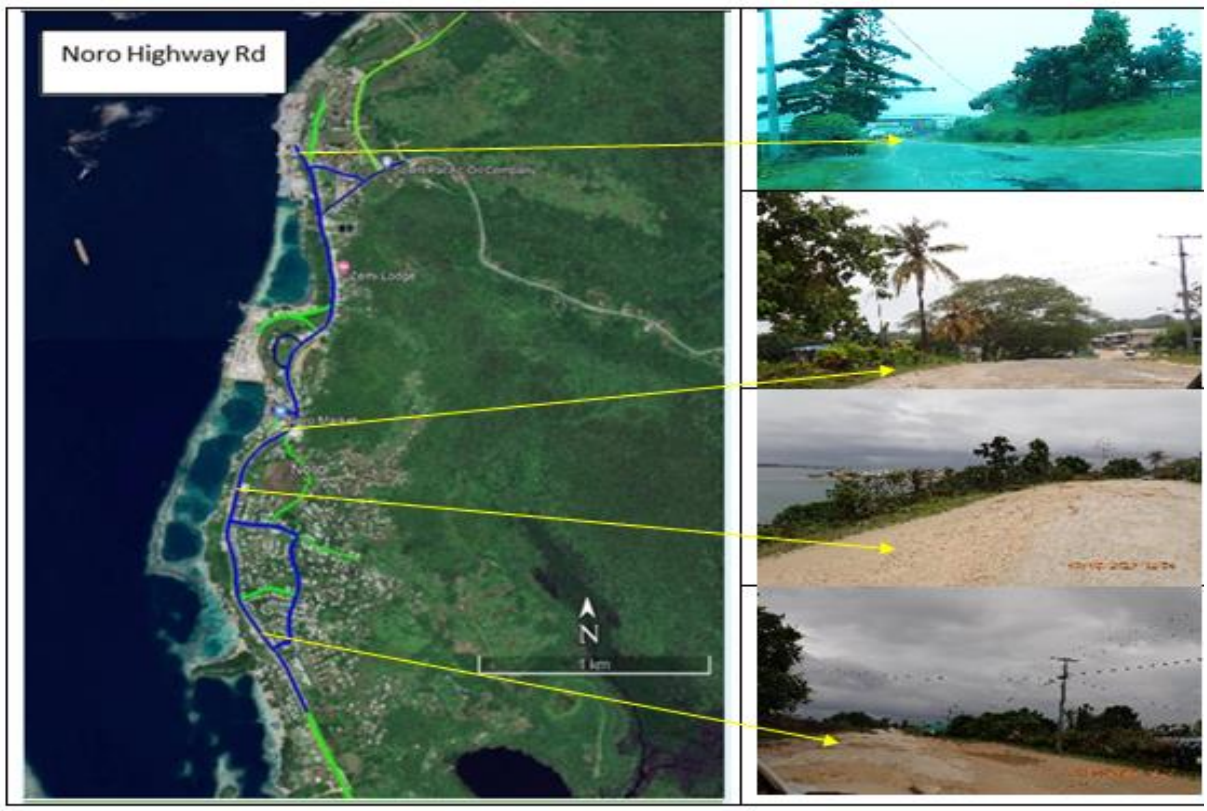


Figure 4: Sections along Noro Highway

4.1.2 Tausinga Road

Tausinga Road is a 600m of gravel road starting from CH 780 to ends at chainage 180. This road section provides connectivity to Noro Town for people residing along this area. This road segment also transverses into a key biodiversity area at the northern edge of the area, which is a developed peri-

[3] Site visits and community consultation activities by various members of the detailed design team to confirm conditions and provide engineering solutions, Egis in association with Azimuth Engineers.

urban setting with no areas of significance along the road or the road surroundings. Roadside vegetation along this road corridor includes but no limited to medium size trees forming the top canopy, ferns, ground orchids, vines and shrubs and grasses. Along residential areas are ornamental plants and fruit bearing plants.

Figure 5: Tausinga road condition

4.1.3 Mobil Road

Mobil road is a gravel road section that connects CH 4120 of Noro Highway to the oil depot in the north part of Noro Town. The start of this road section leading to the oil depot is at CH00 and terminates at CH430. The length of this road is 438m in total and is 2 lanes heavily traffic road that is in a very poor condition. This road provides access to residents living along the road section. Vegetation observed along this section consists mostly of fruit trees, ornamental plants and grasses.

Figure 6: Location and conditions of Mobil Road

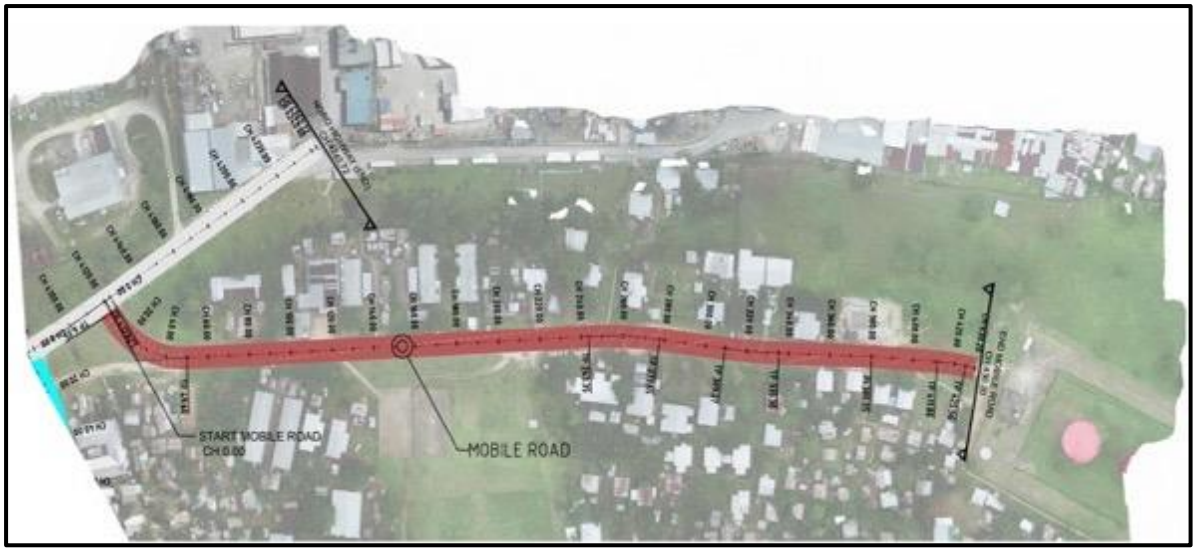


Figure 7: Map of Mobil Road

4.1.4 Kitano Road

Kitano Road is a small section linked from CH 4080 of Noro Highway and connect to Noro-Munda section at CH 320. The road section is a 2-lane road of 303.50m in length which provided access to SOLTUNA Pikinini Kea Haus and including the Cannery Workers residences. The road is a previously sealed section but, deteriorated overtime. Much of the vegetation along this road section is cleared away with only few trees such as *Morinda citrifolia* (noni), *Musa sp* (banana), terminalia *sp* (Alite) and ornamental plants.

Figure 8: Existing condition of identified Kitano Road

4.1.5 Noro Industrial Road

The Noro Industrial Site Road is a 1.5km of road that connects to the Noro-Munda Rd at CH 00 (T-section of the Noro-Munda Rd) and terminates at CH 1487.18. This two-lane, two-way gravel road section provides access to the South Pacific Oil Company, cannery workers settlements, private residences and the Marina Hotel. The road surface condition is variable and is in poor state. Typical

vegetation observed along the roadside include, Musa sp (banana), Cocos nucifera (young coconuts) ornamental plants, shrubs and grasses.

Figure 9: Location and existing condition of Noro Industrial Road

4.1.6 Noro-Munda Road

Noro-Munda Road section starts from the Noro Highway at CH3780 and extends back towards Munda to CH 430. The existing pavement is in good condition compared to other road sections, as shown in **Error! Reference source not found.** below. Roadside vegetation observed include ornamental plants within property boundaries. This section of road provides access to businesses and residents and also connectivity to and from Munda.

Figure 10: Location and existing condition of Noro-Munda Road

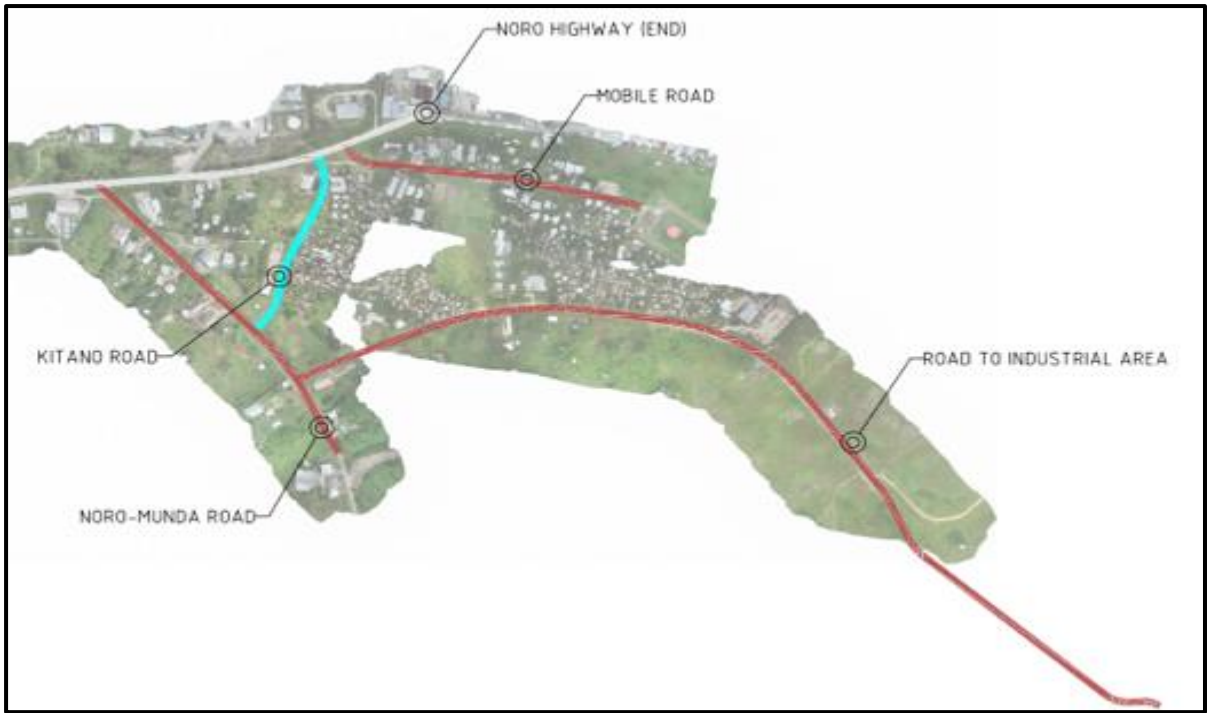


Figure 11: Map showing location of road sections

4.1.7 Ports Exit and Entry Road

The port exit road is a 211m section of road from Noro International Port gate to the main Noro Highway and port entry road is a 351m length of road beginning from the Noro Highway to the gates of the international Port. These roads connect CH 3020 of Noro Highway at the entry access and CH 3200 at the exit access. The road section is unsealed and often produces dust during dry conditions. The road provides access to Noro International Port, Noro Domestic Wharf and National Fisheries Development (NFD). Towards the southwestern side of the Noro Port Entry access road is a coral reef and is only about 200m. Typical vegetation along this segment is mostly secondary regrowth.

Figure 12: Location and existing condition of Noro Ports Entry and Exit Roads

4.1.8 Custom's office Road.

The custom road is linked from and to Noro Highway, looping from CH 2770 to CH 2930 (see figure 13). The approximate length of this section is 336 meters. The road provides access to the Customs Office, newly constructed Ministry of Fisheries and Marine Resources' Monitoring, Control, and Surveillance (MCS) Centre, foundation and Port Residence. This sealed road is in its deteriorating and roughened surface.

Figure 13: Location and existing condition of Customs Road

4.1.9 Town Council Drive

Town Council Drive includes the existing concrete section (53m), the extension to the jetty (81.22m) and extension to the market (north end, 100m). Town Council Drive connects with the Noro Highway at CH 2500 along the 53m of steep concrete paved section constructed by the World Bank-funded Community Access and Urban Enhancement Project from CH 0.00 to CH 53.00. The extensions to the jetty and market (north end) are gravelled road filled with potholes. People use the jetty road extension to access the boat bay whereas, people wanting to use the BSP bank, visit the betel nut market or do shopping will access the market extension towards the north end.

Figure 14: Location and existing condition of Town Council Drive

4.1.10 Market Road

Noro market road begins at CH 00 (spoon bay) and turns off at CH 130 (intersection). It is a 120m gravel road with wider width. Sections of the road is deteriorating and filled with potholes. The existing road pavement width is approximately 10 meters with the pedestrian footpath on one side of the road. The road provides access to business houses and Noro Main Market.

Figure 15: Location and existing condition of Market Road

Figure 16: Location map of Town Council Drive

4.1.11 COC Road.

The COC Road comprised of concrete and gravel road. The total length of the road section is about 602m. The concrete sections are from CH 00 to CH 40 and CH 200 to CH 290 (steep gradient section). Another steep gradient section is from CH 40 to CH 60 and the rest of the road section is gravel. The Steep gradient section from CH 40 to CH 60 may need more attention in the proposed pavement due to the steep terrain resulting in poor surface friction, erosion and poor subgrade. The road passes through residential areas from CH 00 to CH600. The existing road width is about 5 meters with 1 meter of gravel shoulder partially covered with grass. Sub-base upgrading and asphalt sealing is considered

to be designed along the gravel section as well as improvement in drainage along the road.

Figure 17: Location and existing condition of COC Road

4.1.12 Bonito Drive

Bonito Drive is 625m of road section along Noro Highway from CH 00 (Solomon Power Complex) and to CH 1800 (Noro Police Residences). The existing road structure was observed as a mix of sealed and non-sealed pavement with 5 meters width and 1 meter gravel shoulder partially covered with grass. Proper drainage facilities have not been constructed along the road. Bonito Drive provides access to Noro Primary and Secondary School and residences along the road section.

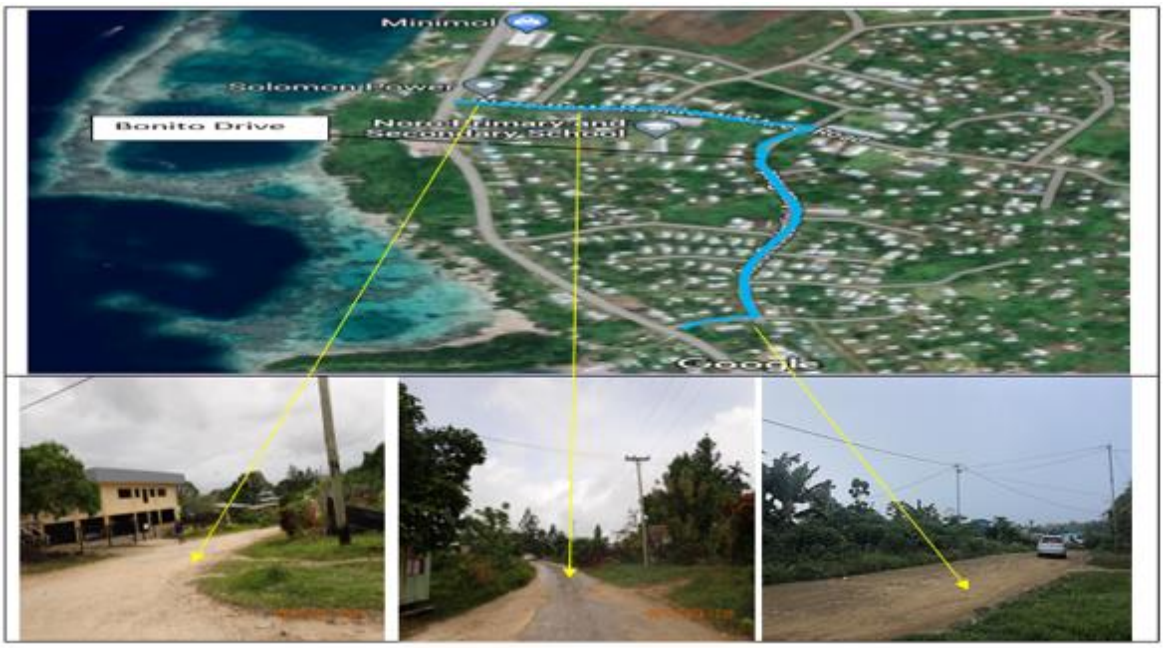


Figure 18: Location and existing condition of Bonito Drive

4.1.13 Baru Feeder

Baru Feeder Road is linked section from CH 1400 of Noro Highway to CH 640 of Bonito drive. The total length of the road is about 270m and it is an unsealed section with no drainages, filled with potholes and water ponding. The feeder road provides access to residences along the section.

Figure 19: Location and existing condition of Baru Feeder Road

4.1.14 Catholic Road.

Catholic road is an extension section from the northern edge of Bonito drive road from CH 320 to the community area in the eastern side. The length of this section is 290 meters and the existing pavement structure is gravel road without any proper road shoulder and drainage facilities along the road. The road section provide access to Catholic Church and surrounding residential areas.

Figure 20: Location and existing condition of Catholic Road

4.2 Sensitive Receptors

The target road section for improvement is divided into two types: sealed and unsealed. All of the roads are urban or semi-urban.

Noro has homes, schools, a port and a central market located very close to the road. Homes, schools (including pre-schools), and markets are categorised as sensitive receptors where people can be more susceptible to the adverse effects of exposure, like to traffic (safety), noise, dust and vibrations. Sensitive receptors do not usually include places of business or public open space. Environmentally sensitive areas also include but not limited to swamps, coral reef, wildlife habitat areas (KBA) and steep slopes.

The sensitive receptors that have been identified during initial screening for the ongoing and planned activities is presented in Figure 21 below and Appendix A.

Figure 21: Identified Sensitive Receptors along the target sealed (blue) and unsealed (green) roads in Noro

4.3 Physical Environment

The following sections provide a description of 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.

Noro Town is located on New Georgia Island which is the largest island in the Western Province of the Solomon Islands with an area of 2.037km^2 (**Error! Reference source not found.**). The island is approximately 85km long and 41km wide and forms part of the boundary of the New Georgia Sound. New Georgia is a volcanic island, surrounded in some places by coral reef deposits which are partly elevated to form raised barrier reef enclosing some reef on the north, and partly drowned to form a submerged barrier towards the south. The highest point is Mount Masse with an elevation of 860m.

Figure 22: Geographic location of New Georgia Island and Munda Town

Noro Town Figure 22 is located on the western side of New Georgia, towards the northern end, approximately 18km away from Munda Airport (MUA).

Figure 23:Location of Noro Town within the New Georgia group

4.3.2 Climate

Western Province has a climate that is largely controlled by the seasonal movement of the equatorial trough. The temperature and humidity in the Solomon Islands is relatively high and uniform with the former ranging from 22°C to 31°C throughout the year. The most variable of the climatic elements across the provinces is rainfall which can be abundant each month and is variable based on the different topographic features of the islands. The average rainfall is mostly within the range of 3000mm to 5000mm with the majority of monthly rainfall amounts in excess of 200mm.

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 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. Over the ocean, storms are more likely to occur in the night or early morning. 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 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 thing freshwater lens of underground aquifer of the small low-lying atolls and islets[4]. On the larger islands surface water in the form of streams, springs or rivers is the main drinking water. Some communities on the higher volcanic islands also use ground water for domestic purpose.

The Solomon Island Water Authority (SIWA) maintain and manage a reticulated water system in the town of Noro, close to Munda, with a single supply source, treatment centre and reservoir. The water is pumped from the nearby Ziata River at a small section of about 3m wide and a meter deep. This river is located between Noro and Munda and drains westward into the lagoon. This is the only water source that in the dry season is insufficient to provide 24-hour supply. Water treatment is by rapid gravity sand filter. There is no storage in operation for the distribution system, the only storage being at the SolTuna factory for their commercial operations.[5]

The SIWA 30-year plan estimates that 70% of existing houses in Noro are connected to the reticulated water system or have direct access via communal standpipes.

4.3.4 Land Resources and Soils

Soil fertility ranges widely between and within the islands, ranging from quite infertile and mildly toxic soils to highly fertile soils in limited areas derived from volcanic ash and alluvial deposits. Most upland soils have good structures, but either lack one or more major nutrients or have a strong nutrient imbalance. New Georgia Island is characterised by organic, young and slightly to strong weathered and leached soils with low base status.[6] The geology of Noro are mostly Holocene and Pleistocene which is the Roviana Formation.

4.3.5 Air Quality

There are no air quality or emissions standards or policies to control emissions in Solomon Islands. Air quality is generally very good in most islands due to no to very few industries and relatively low number of vehicles or machineries generating emissions. However, according to World Health

[4] IWCM diagnostic report

[5] SIWA Solomon Islands Urban Water Supply and Sanitation Sector Project Environmental Assessment and Review Framework, March 2019

[6] State of Environment 2008

Organization's guidelines, the air quality in the Solomon Islands is considered moderately unsafe. The air quality is slowly being impacted by vehicle emissions, mining and logging and waste burning. Most recent data indicates that Honiara is likely to experience high level of air pollution with an annual mean concentration of $PM_{2.5}$ is 8 to 12 µg/m^3, exceeding the recommended maximum of 10 µg/m^3[7].

There are vehicles, machineries and a cannery generating emissions at Noro but no available data on air quality. For the proposed works it is expected that the average concentration levels of common air pollutants such as particulate matter (PM - $PM_{2.5}$ and PM_{10}), carbon monoxide, ozone, nitrogen dioxide and sulfur dioxide will not exceed the WHO global air quality guidelines (AQG) which are 10 to 25 µg/m^3 ($PM_{2.5}$ and PM_{10}), 4 µg/m^3, 100 µg/m^3, 25 µg/m^3 and 45 µg/m^3 respectively.

4.4 Biological Environment

4.4.1 Coastal and Marine Environment

Some of the road proposed for improvements runs parallel to the coastline and at its closest is approximately 100m from the coast. Along the majority of the road, it is separated from the beach by buildings, except for two approximately 350m long sections where there is a 100m wide vegetated buffer zone between the road and the shorelines these are areas which steeply falls to the coast. The marine habitat in the immediate vicinity is shallow and used as an access point for small local fishing skiffs. The marine environment in this area is comprised of reef flats and shallow reef complexes.

A rapid marine assessment exercise conducted by The Nature Conservancy (TNC) conducted a comprehensive baseline survey of coral reefs in the Solomon Island and concluded that overall health was good. It has been highlighted that some of the SI most beautiful and largest coral reefs occur in the Western Province, specifically the Gizo – Vonavona – Rovina lagoon system on New Georgia Island which is just to the south of Noro (**Error! Reference source not found.**) and outside the project site.

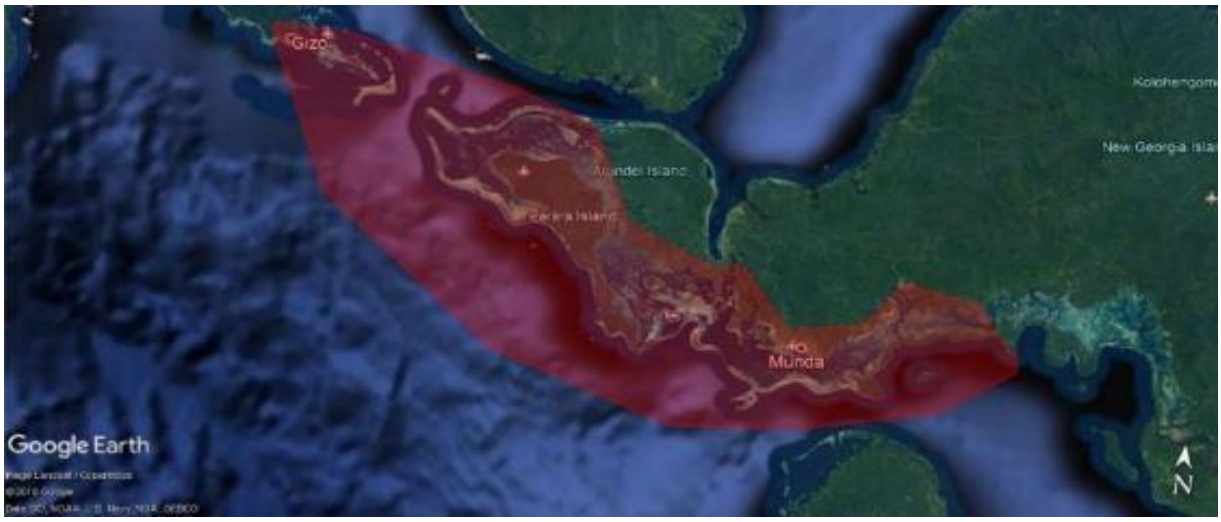


Figure 24: Western Province are denoting location of significant coral reefs with Noro highlighted in yellow

Coastal and marine ecosystems of Noro show a gradient of habitats which include shallow water platforms and estuarine, mangrove forests, mud flats, sea grass beds and coral reefs. At the subtidal and intertidal zones there are mangroves dominated by the Rhizophora species and seagrass beds or meadows which are predominantly subtidal with a narrow intertidal fringe, often adjacent to the mangroves. These areas are common feeding and breeding grounds for fish, dugongs and turtles and mainly supports subsistence fishery. Species commonly found at Noro are Thalassia hemprichii,

[7] WHO (https://cdn.who.int/media/docs/default-source/country-profiles/environmental-health/environmental-health-slb-2023.pdf)

Cymodocea rotundata, Cymodocea serrulata, Halodule uninervis, Enhalus acoroides and Halophila ovalis. The fringing reef at Noro occurs at most shallow coastal areas where the water is clear and warm. This ecosystem supports diverse fish species and crustaceans, protects the coast from coastal erosion and is also a major fishing ground for residents of Noro.

In terms of highly mobile and migratory species, there are 8 species of whales, 9 species of dolphins, 1 species of dugong, 5 species of turtles and a lot of species of sharks present in water of Solomon. Commercially, tuna species which include the yellow fin tuna, south pacific albacore tuna, skipjack tuna and bigeye tuna have huge contribution to country's economy.

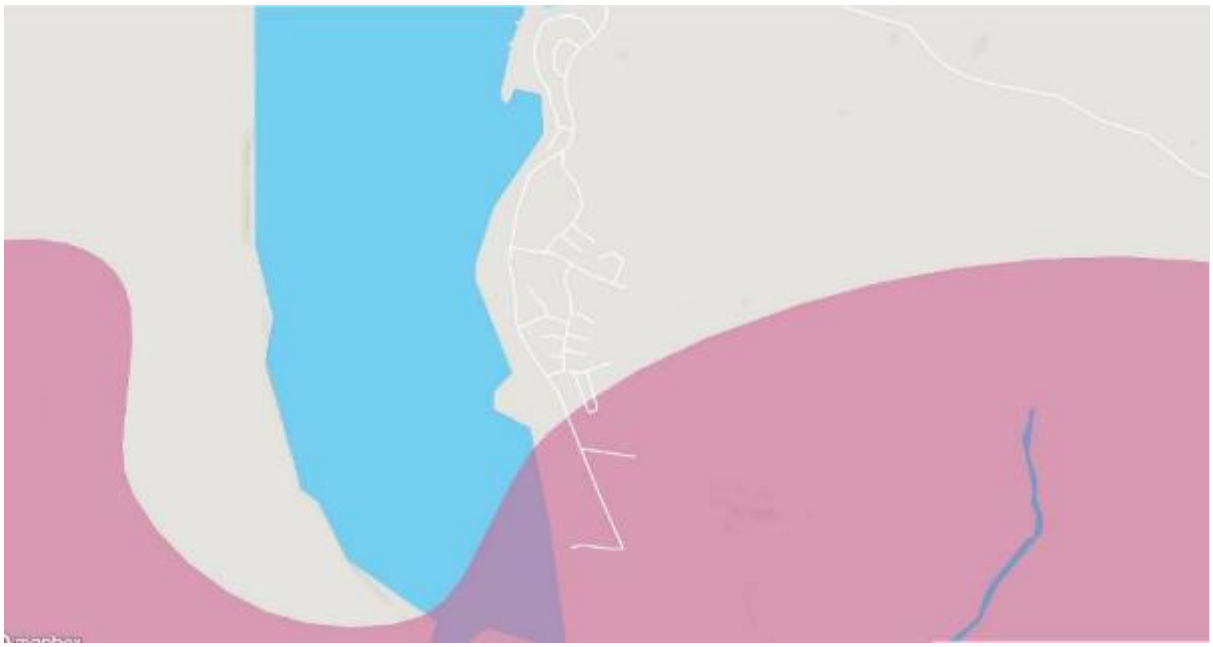
However, the coastal and marine ecosystems around Noro has been exposed to pollution from the tuna industry, international ports and from the residents in the area as well as from other activities such as backfilling of the coastal fronts at some locations. Subsistence fishing along the channel and nearby reefs is increasing cash income of the local people but it also poses a threat to the coral reef fisheries due to over harvesting.

4.4.2 Terrestrial Biodiversity

The proposed road upgrades are all within Noro Town which is characterized by urban and peri-urban areas. The roads within the urban range of Noro traverses a heavily modified environment with no primary, notable or critical habitats.

New Georgia Island hosts a Key Biodiversity Area (KBA)[8] (**Error! Reference source not found.**) which encompasses part of the southern end of Noro Town. The project interacts with the KBA for a 700m stretch of the targeted roads.

Figure 25: Key Biodiversity Area overlaid on Noro Town Street map



Source: https://www.ibat-alliance.org/country_profiles/SLB

The 600m section of road is referred to as Tausinga Road in the project. It is within the northern edge of the KBA and is a developed peri-urban setting with no areas of significance long the road or the road surrounds. The works in this area will not be changing the project footprint but will be improving

[8] https://www.ibat-alliance.org/country_profiles/SLB

the subbase and sealing the section of road. No construction camps, stockpile sites or laydown areas will be within the KBA.

Figure 26: Section of unsealed project road (green) within the KBA (red)

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 SOE report for the Western Province and only considered the immediate environment surrounding the project site.

For the Western Province, the 2008 International Union for Conservation of Nature (IUCN) Red list of endangered species lists 2 bird species (*Gallinula sylvestris* and *Pseudobulweria becki*) as critically endangered, along with 4 threatened bird species and 10 endemics at the provincial level.

The Dugong (*Dugong dugon*) is listed as vulnerable to extinction by the IUCN and is found in the Western Province. It is known to inhabit the southern lagoons of New Georgia Island and is occasionally spotted on boat rides between Munda and Gizo.[9]

The KBA described in Section 3.4.2 is home to the Humphead wrasse (*Cheilinus undulatus*) which is also classified as Endangered in the IUCN Red List, and the black-bellied fruit bat (*Melonycteris fardoulisi*) which is listed as near threatened. Site screening does not indicate that either of these species will be threatened by the proposed sealing of this section of road. There will be no direct habitat loss or degradation outside of the project footprint.

4.4.4 Invasive Species

Giant African Snails (GAS), *Lissachatina fulica*, previously known as *Achtinidia fulica*, arrived in the Solomon Islands on earthmoving or logging equipment that landed without biosecurity clearance and was first reported at Ranadi, Honiara in 2006[10].

To date, GAS has only been identified in two provincial areas: eradication appears to have been achieved at Noro while the response is in its early stages at Makira. However, due to limited surveillance and awareness in provincial areas, GAS may be distributed more widely than currently understood.[11]

[9] Dugong conservation website

[10] http://www.biosecurity.gov.sb/News-Resources/giant-african-snail

[11] http://phama.com.au/resources/technical-reports/report-on-giant-african-snail-in-solomon-islands/

Giant African Snail (GAS) was intercepted in 2009 at the wharf area where containers with building materials for Gizo hospital coming from Lae in PNG were stored. Upon interception of the snail, an immediate eradication programme was carried out by the quarantine staff in collaboration with Noro wharf management and communities. Blitzem baits were placed at the infested sites collecting the snails which were destroyed by burning and dipping in seawater. The whole wharf area was sprayed with seawater using the local fire truck. The last record of finding the snail was 29 June 2010, after which there has been no record of finding dead or alive specimens.[12]

A legislative framework supported by donors has been put in place – including the National Biodiversity Strategy Action Plan (2009), the Agriculture Policy (2010–2015), and the National Biosafety Framework (2012), which all recommended the development of pest eradication plans, and the drafting of the new Biosecurity Act 2013 (enacted in March 2015). However, the new framework has yet to result in any actual 'on-ground' actions to control GAS or other invasive species. Eradication plans are incomplete and unfunded, and resources allocated just do not match the scale of the threat.[13]

4.5 Socio-Economic Conditions

4.5.1 Land Tenure and Rights

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 (CoL) 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.

4.5.2 Population and Demographics

The last census for the Solomon Islands was undertaken in 2019 and data summary showed that the population of Western Province was 94, 106 (48,933-male and 45,173-female) with an average annual population growth rate from 2009 to 2019 being 2%. The population density is 12.5people/km2 which is lower than the national average of 23.7people/km2 and the total number of households recorded was 17,531 and the average household size is 5.1 people per household. With an urban population growth rate of 4% the urban population of the province is 14,608 which makes up 15.5% of the total provincial population. Noro is one of the four urban centers in Western Province and forms nearly half of the provincial urban population of 7,204 (male – 3646 and female – 3646) people with an annual growth rate of 7.6%. The total number of households is 1,446 with an average household size 5 persons per household.

Like other provinces, Western Province a young age structure with 37% of the population being less than 15 years of age, 32.5% between the ages of 15 and 30 years old, 31% between the ages of 30 and 59 years old and 6.5% are 60 years and above. The median age for the province is 21.7 years. For Noro

[12] Ministry of Agriculture and Livestock Solomon Islands Rural Development Program, Pest Management Plan Consultancy Report (December 2010).

[13] https://devpolicy.org/giant-african-snails-devastating-gardens-livelihoods-solomon-islands-20170822/

32% of the population are less than 15 years old, 33% between the ages of 15 and 30 years, 34% between 30 and 59 years of age and 2% are over 60 years old. [14]

4.5.3 Education and Health

Education is not compulsory in the Solomon Islands. In 2019, with respect to population in the Western Province aged 5-15 years, 77% were enrolled in school from which76% are males and 78.2% of females. For those aged between 15 and 19 years of age 60.9% are enrolled in school and 58.2% are males and 63.9% are females. 5.9% of the population aged group 12 years and older has not completed school. Enrolment rates in the Western Province were higher than other provinces. Based on the 2019 census data on the highest level of education completed, 56.1% of the population 12 years and older responded that they had completed primary school, 28.5% had completed secondary school, 6.2% had completed tertiary education and 1.8% had completed vocational and professional qualifications.

The Ministry of Health and Medical Services is the key health provider in the Solomon Islands. Health services are concentrated in urban centers 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 have 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 do 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.[15]

In Western Province, there are one faith-based hospital, one provincial hospital, three area health centers, 23 rural health centers, and 31 nurse aide posts. The new Gizo Hospital run by Solomon Islands Government is a 60-bed facility and is the country’ s second referral hospital. The Helena Goldie Hospital in Munda is managed by the United Church.

The province has extended its health services and facilities to most people in the rural areas. About 95% of the population in the province has access to basic health services. The most common health problems in the province are malaria, pneumonia, and diarrhea.

4.5.4 Livelihoods and Economic Activity

Solomon Islands economy is dominated by subsistence agriculture, fisheries and logging related activities, which support around three-quarters of the total population, including almost the entire rural population. It was observed that the main economic activities that residents are involved in include marketing of local farmed produces, marketing of betel nut and tobacco products, selling cooked foods, running private businesses such as canteens and transport services. Women in particular are mostly involved in selling cooked food, clothes and other items such as necklaces, bracelets and earrings.

The Solomon Islands’ per-captia GDP of USD600 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

[14] SIG, 2019 Population and Housing Census Report National Report, September 2023

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

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.

Labor force and working age group in Solomon Islands comprised of all persons 12 years and over. In Western Province, the employment population ratio in 2019 is 40.4% with 55% being males and 45% are females. . While the total unemployment is 6%. By occupation the 72.4% of the labor force are employed in agriculture, fisheries and forestry, 8.9% are employed in industry and 18.7% are employed in services.

Noro is a fishing town with an economy strongly reliant on SolTuna. Indeed, the township was largely developed to support the fish cannery now operated by SolTuna, located on the northern edge of the town. Most of the people at Noro are employed by SolTuna, NFD, Ports and other government and private agencies.

4.5.5 Cultural Sites

In Solomon Islands, special, sacred, or restricted sites, or 'tambu' areas represent the history, lineage and society of different clans and lines. The National Solomon Islands Museum keeps a National Tambu Site Register, which records several thousand sites of Solomon Islands.
There is no heritage item within the vicinity of the study area.
Noise
There are no available noise level data for Noro. Environmental standards for noise level are still under development in Solomon Islands. In general, the areas of Noro, where proposed components of the subproject will be located, have no major sources of noise generators. For these areas, it is therefore expected that the average noise level will not exceed 55 dB (A) and 45 dB (A) near the residential area during daytime and nighttime, respectively and 70 dB (A) near industrial and commercial area[16].

4.5.6 Community Infrastructure and Services

4.5.6.1 Waste and Rubbish Management

In Western Province it was reported that 49.1% of households dispose waste or rubbish in their backyard, 8% of households use government or formal waste collection services while 42.9% of households dispose rubbish by way of burning, burying, dumping at sea, river or streams and other means[17].

Noro Council operates a landfill in Noro. There is no hazardous waste disposal facilities on the island. There are no formally permitted landfills on the island, however the Honiara City Council operates the permitted Ranadi Landfill in Honiara on Guadalcanal. At all times, the Contractor is responsible for the safe and sound disposal of all solid waste generated by the Works. Prior approval for the utilization of Ranadi Landfill will be undertaken by MID will seek approval from Honiara City Council for the use of Ranadi Landfill for SIRAP2's project use. The approval documents will be made available by MID to the Supervision Engineer and the Contractors.

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).

[16] IFCGuidelines (EHS Guidelines – 2007)

[17] Ref at Footnote 14

- Inorganic non-recyclable waste (i.e. waste that cannot decompose / break down and which cannot be recycled).
- Hazardous waste (i.e. bitumen, waste oil etc.).

In terms of improved sanitation, Western Province is one of the provinces with the highest number of households, with improved sanitary facilities. It was reported in the 2019 Census Report that 2904 households have flush to septic toilet systems[18]. In Noro, residential and commercial properties are served by septic tanks only.

4.5.6.2 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 thing freshwater lens of underground aquifer of the small low-lying atolls and islets[19].

Drinking and household use in both rural villages and in urban centres account for the largest water withdrawal in the country. There is limited agricultural water demand because most crops are rainfed. The industrial sector 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 drinking water. Some communities on the higher volcanic islands also use ground water for domestic purpose. The Solomon Island Water Authority (SIWA) have a reticulated water system in the town of Noro pumped from Ziata stream (water source) to a reservoir tank with chlorination system and a pumping station that supplies water to the rest of the Noro town. The water supply system is connected to both domestic and commercial customers (factories, hotels and institutions). However, areas owned by SolTuna do not receive the portable water. The highest water consumers in Noro are the commercial customers which overall consumption of 72% although they only form 12% of the total water supply customers at Noro.

4.5.6.3 Energy / Electricity Supply

In Western Province 2265 households access electricity provided by Solomon Power a state-owned enterprise which provides electricity at Honiara and eight provincial centers including Noro. The electricity supply in Solomon Islands is characterized by low in-service coverage area and high cost. This is due to its geography and high dependency on imported fossil fuel. The low service coverage is mostly from the informal settlements area.

4.5.6.4 Information and Communication Technology

Access to affordable, good quality broadband internet-based services, has so far remained out of the reach for a significant proportion of the population with only 131566 households having access. The limited capacity and high cost of international bandwidth is caused by a total dependence on satellite connectivity, which is also the principal constraint to higher broadband penetration is an issue. Introduction of new telecommunications services, and new market entrants is a way forward. Landline and cellular or mobile phone services networks are available in Noro this is provided by Our Telekom.

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.

[18] Ref at Footnote 14

[19] IWCM diagnostic report

Annual and seasonal mean temperatures at Munda 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 extreme rainfall days are likely to occur more often and be more intense.

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.

Satellite date 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 project to rise between 8-18cm under all emission scenarios (Table 8). This sea level rise combined with natural year-to-year changes will increase the impact of storm surges and coastal flooding (**Error! Reference source not found.**).

Table 8: Sea-level rise projections for the Solomon Islands. Values represent 90% of the range of the model results and are relative to the period 1986-2005

	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

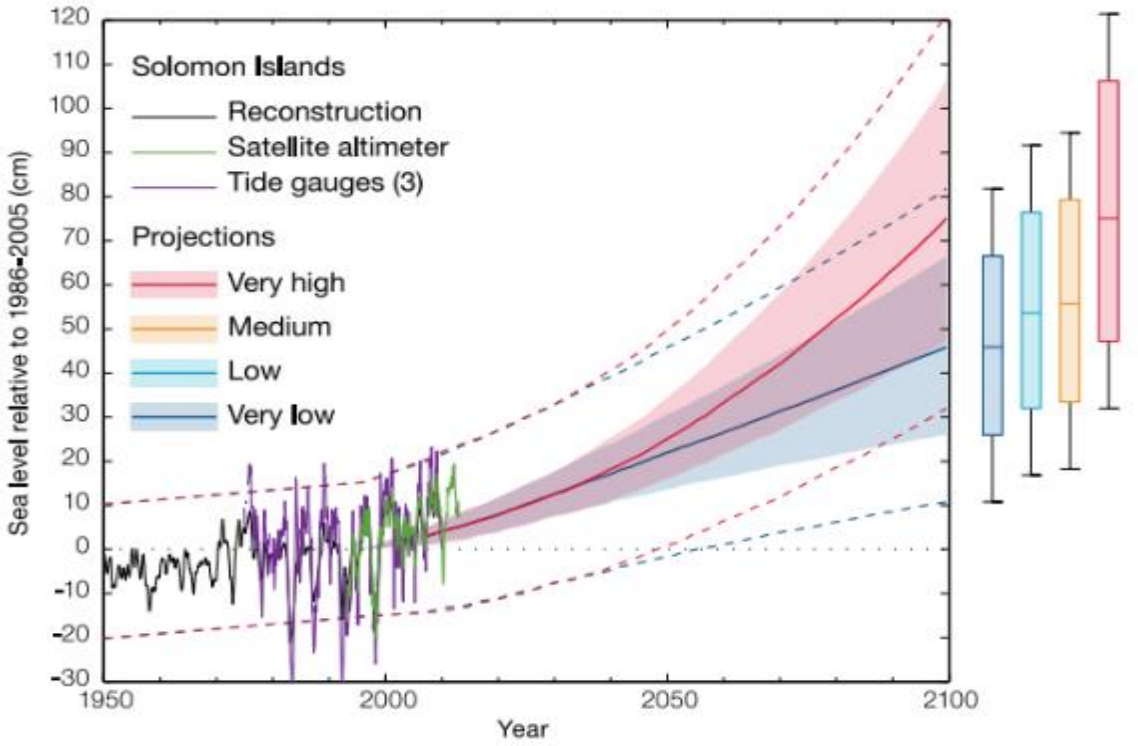


Figure 27: Observed and Projected sea level rise near Solomon Islands

The projected design life of the proposed works for the Noro Roads is 20 years, however, it is most likely that the climate predictions for 2050 are applicable for SIRAP2 and should therefore be considered within the designs.

5 Consultation and Stakeholder Engagement

The SIRAP2 Stakeholder Engagement Plan (SEP) will be implemented for the Noro Roads improvement 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

Initial consultations have been conducted with Noro stakeholders in August 2021. The purpose of the meeting was to conduct the initial consultation for the road improvements in Noro Town. The project team consist of MCA Director Aviation (Mr Trevor Veo) and SIRAP2 PST National Safeguards. It is vital that communities are pre-informed on the proposed activities that will be undertaken and see if there are potential key impacts on the local communities and people of such a development. Also, to identify if there are sensitive receptors that should be disadvantaged by the proposed activities.

The key stakeholders that attended the initial consultations were representatives from:

- Noro Town Council
- Customs
- Immigration
- Biosecurity
- Quarantine
- Health
- National Fisheries Development (NFD)
- SOLTUNA
- Ports
- Police
- Church Leaders
- Provincial Administration Officers

The attendance list for the consultations is included in Appendix B.

5.1.1 Consultation Outcomes

The team started with a courtesy call at the Noro Town Clerk and the President on 19th August 2021 updating them on SIRAP to date activities and as well as the proposed activities for SIRAP2. The SIRAP2 (Noro Town Road) was the highlight of the meeting. The President and Clerk stated that SIRAP2 is a timely project for Noro Town.

They observed that the current road condition around Noro is not good. Noro international port is the face of Solomon Islands. Thus, improving such key infrastructure as the road is a very important. Also, their office has been pushing the road for maintenance for years, and it was never addressed. The President emphasised that, rehabilitating the roads in Noro Town is also important, since they accommodate the second international seaport in the Solomon Islands. Noro Town is a mini–Solomon

Islands, where it also has the gateway for international entrance and exit at the port. Their office is looking forward to working together with MID on this very important and timely project (SIRAP2) for their town.

Figure 28: Meeting with the Noro Town Clerk and President

The stakeholder meeting with the identified key stakeholders was also held on 19th August 2021.

During the meeting, the following were raised:

- Road shoulders for reconstruction before the resealing.
- The road was gazetted in 1988 and was confirmed by the Lands Officer which also present at the meeting.
- Strategic locations for parking area, bus stops, and taxi stands can be included in the road upgrading works.
- The actual loading for the road leading down to ports area is approximately 40-50 tonnes.
- Noro town as an industrial town expects bigger plants and vehicles so road size should cater for such users.
- Road distance markers be established, so that the travelling public when charges for travel (taxi fare and bus fare) can be guided by them when commute on buses and taxis.
- Road signs must be placed at appropriate locations.
- Appropriate Road names
- Locations of buildings and other developments must conform to the road regulations
- When the actual design of the road, the consultant must consult with the key stakeholders and users of the road so that the safety and comfort of the road be incorporated into the design.
- Speed limits to some critical areas that will cause accidents due to unnecessary speeding.
- Proper road drainages and pavements along the road to be improved
- The road in Noro has been maintained by NFD for the past years. If a maintenance program can be established as well for sustaining the life of the rehabilitated road.

5.2 Follow-up Consultations

Follow up consultations were conducted in September 2023 during the detailed design to inform the stakeholders of the status of the project implementation and hear from them any issues and concerns prior to eventual project implementation. The project team consist of representatives from MID (Western Region – Engineer, Mr. Ben Maenu), SIRAP2 PST National Safeguards Specialist, and National Safeguards Specialists and Engineer responsible for Noro Roads project of the design and supervision team[20] engaged for the project.

5.2.1 Consultation Outcomes

A courtesy call at the Noro Town Council Office was held on the 6th of September 2023 with the Noro Town Council and the Lands Officer. An update on SIRAP to date activities as well as the proposed activities for SIRAP2 which include Noro Roads Improvement works including status of the Noro Road and issues hindering widening of Noro Roads.

During the meeting, the following were raised:

- Design of Noro Roads to accommodate for footpath since most people at Noro are pedestrians and do not have a vehicle;
- Encroachment by people into the road reserve – market houses, fences and some permanent buildings within the road reserve;
- New development east of the Noro Town Council Office which its fencing is blocking drivers view, MID to assist with removal;
- Guardrails to be considered in the design for areas along the road that is steep towards the coast;
- Construction of road humps at some road sections;
- Localized flooding at the lower areas of the town such as the areas surrounding the wetland north of Noro Highway;
- Importance of drainage along the road sections;
- Installation of speed limits and other safety signages when the road will be completed;
- Importance of road safety to be discussed with communities when carrying out community consultations and awareness;
- Status of Noro Road – if it is gazetted or not;
- Importance of consultations with stakeholders – Council requested the team to hold another consultation with the stakeholders when the detailed designs are ready. Important for Noro Stakeholders to make comments on the design; Project timeframe and the design and procurement process of the works is clarified by PST.

[2020] Egis in association with Azimuth Engineers.

Figure 29: Meeting at Noro Town Council Office

5.3 Community Consultations and Awareness

Planned community consultations during the visit were supposed to be held at the Noro Base Area (8/09/2023), United Church at Baru (6/9/2023), Noro CHS (7/09/2023) and Noro Town Council Area (8/09/2023). However, consultations was only carried out at the Noro Community High School (Noro CHS) and two public awareness about the project was done at the Noro Town Council Area and at the Noro Market Area. The team was accompanied by the Noro Town Council Clerk Mr. Gavin Totu to do the awareness at the Market and the Council Area. Other consultations were cancelled due to community commitments to community programs scheduled during the week.

For the consultations undertaken at the Noro CHS area the team met with the school teachers and students (both primary and secondary). Due to high attendance of school aged children, the team first discussed the importance of road safety awareness. Discussions about the Noro Roads project designs was done with the teachers and the secondary school students.

Several issues relating to safety of children, pedestrian crossings, the need for footpaths and how the contractor will control the traffic during construction were raised. Concerns regarding other road sections (gravel) were also discussed during the meetings. Other issues of concern are no proper drainages, poor road conditions and increasing usage of the roads.

Figure 30: Consultations and Awareness at Noro CHS

The minute of the Council Meeting and the consultations at the Noro CHS are attached in Appendix F.

During the awareness and consultations at the Noro Town Council Area, Market and Noro CHS participants also queried about the timeframe of works and the procurement process of the project. Therefore, PST clraified the project procurement process and the project timeframe.

Figure 31: Noro Town Council Office Area Public Awareness

Figure 32: Noro Market Public Awareness

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. As more detailed design information becomes available, these impacts will be revisited and updated where necessary.

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 and hot bituminous products (between 120 and 190 °C)
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 contractors 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

Road resealing and upgrade works will lead to the generation of excess soil and asphalt 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. The impact on the current Noro bore hole water supply and infrastructure could be significant if not properly controlled through good resource planning. The source of water supply for the Noro roads works has yet to be confirmed,

however it is likely that the project will utilize both the Noro town reticulated water supply and water trucks from the SIWA water supply system in Noro. The water source for the Noro system is fed by a local river and is insufficient to provide 24-hour water services during dry season and therefore may not be suitable for high water demands depending on the time of year. This may have impacts on the availability of reticulated water for the Noro community.

In term of construction impacts on the quality of the water supply, the river is approximately 1.5km inland from the targeting road network and construction activities will not cause any impacts to the river or the river water quality.

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.

Bitumen, 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

Sediment has the potential to be generated during any vegetation clearance and excavations. As the roads run close to the coastal environment in some parts, there is the potential to create short term sedimentation in the nearshore environment although this is expected to be a minor impact due to the natural protective measures that is afforded by the vegetated buffer between the road and the coastal area (Figure 33) combined with the mitigation measures in this ESMP which prevents vegetation clearance in close proximity to the marine environment.

Figure 33: Section of main Noro Highway separated from marine environment by vegetated buffer

It is anticipated that removal of some small shrubs and vegetation will be necessary along the road reserves and to establish lay down areas (construction and stockpile). These sites will be at least 150m from any waterbody or shoreline. The impacts on vegetative cover will be short-term and reversible through natural regeneration. There is only a thin topsoil layer in most areas and runoff is easily percolated through to the underlying groundwater table. Where topsoil is required to be cleared this will be set aside for use in restoration of disturbed areas.

6.2.5 Dust and Air Pollution

Air pollution is likely to arise from improper maintenance of equipment, dust generation along the road, at the quarries and at the crushing plant and the bitumen smoke / fumes arising from application of the new road surface. Impacts are expected to be experienced along the length of the road works and could cause a significant nuisance and health hazard in settlements and village.

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

6.2.6 Noise and Vibration

Noise and vibration disturbances are particularly likely during construction related to the transportation of construction materials and operation of road works machinery (graders, compactors, excavators). These impacts will be short-term and affect different people at different times.

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 lagoon and coral reef habitats, and contamination 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 sewage treatment facilities, and the sensitivity of the receiving water environment. Some sections of road are located along the coastline therefore any release could be significant. 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:

- 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.
- Dust is a major issue at quarry sites and can travel some distance and affect a large number of people if not properly managed.
- Health and Safety of quarry workers

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. Biosecurity

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 Noro community. It will also result in increased pressure on pedestrians along roadside where there is no walkway and where traffic and pedestrians may compete for space.

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.

If imported aggregates are landed at any of the Port in Noro the impacts on the already roads through the town could be significant in the short term from dust generation, pedestrian and vehicle safety, and road damage.

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 Pedestrian Safety

As well as the increased risk to pedestrian safety during the construction phase from construction traffic, there is a risk to the safety of pedestrians on completion of the project from the predicted increased traffic volume and driving speeds during the operational phase.

There will also be risks from the events involving high rainfall if the shoulders and drainage works are planned with future climactic events in mind.

The project will mitigate this by ensuring that technical/engineering road design will include solutions to mitigate risks of natural disasters such as integrated flood control and climate resilience.

6.3.3 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, vehicles exhaust and burning of waste 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.

6.3.4 UXO

There is a risk to the community and residents residing close to the roads or construction areas from chance finds of UXO. Clearance of UXO was undertaken for geotechnical investigation test pits (35No.) but there will be chances of discovering this during the construction phase hence chance find measures required for the Contractor shall be implemented.

6.3.5 Influx of Workers

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

While it is not yet known if 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. However, it is probable 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. It is possible that these workers are likely to be from both overseas and from other areas of the SI and the Contractor must therefore be aware of the potential impacts that this influx of outside labour can have on the local community, and manage these impacts and interactions appropriately which includes adherence to the GBV, CAE and HV codes of conduct outlined in Appendix D.

In terms of the vulnerability of the Noro community to external influences, in the context of Noro these communities can be considered to be low-risk due to the location of the works and influx of workers from outside Nor. . Continuous consultations and information sharing with the communities shall be undertaken. Section 7.2.3 provides for mitigation measures against these potential impacts.

6.3.6 Human Trafficking

A US Department of State Report released in April 2017 has concluded that within the SI, children and young girls are regularly subjected to sex trafficking and forced labour. The report said local children were forced to do labour or commercial marriages in exchange for money or goods, particularly near foreign logging camps, on foreign and local fishing vessels, and at hotels and entertainment establishments. In a survey conducted by the American Bar Association Rule of Law Initiative, 77% of survey respondents indicated that they 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. The second highest response rate was from Western Province, with the primary form being forced commercial sex.

In the context of the proposed Noro roads works, the main risk area would be from the use of local hotels by the expatriate work force. It is anticipated that the risk posted during the construction phase

of the works will be low and relevant mitigation measures shall be complied with to avoid or control the impact that this may have on the communities.

6.3.7 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 accepts that gender-based violence might occur as an unintended consequence of economic development. As such, it is the Contractors 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 a list of approved service providers which shall include recognized NGOs and others for conducting training on GBV. From the provided list, the Contractor 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. The contractor shall make staff available for a total of at least 0.5 days per month for formal training, including GBV.

6.3.8 Business Impacts

.During the construction phase it is anticipated that there will be impacts on businesses houses and street vendors along the road sections. Impacts will be mainly on disruption to access, traffic, dust noise and vibration. Good construction management practices will be complied with and applied to mitigate the impacts to an acceptable level.

6.3.9 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 operation of bitumen spray truck and the handling of hazardous substances create the potential for these risks to occur during the construction phases.

The Contractor 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 runway 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; *Achatina 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 sites on New Georgia Island.

6.4.2 Coastal and Marine Impacts

Sections of the target roads run in parallel and close to the coastline in several places, but most specifically along two approximately 350m long sections of road which run less than 100m away from the shoreline without any buildings as a buffer (see Figure 34).

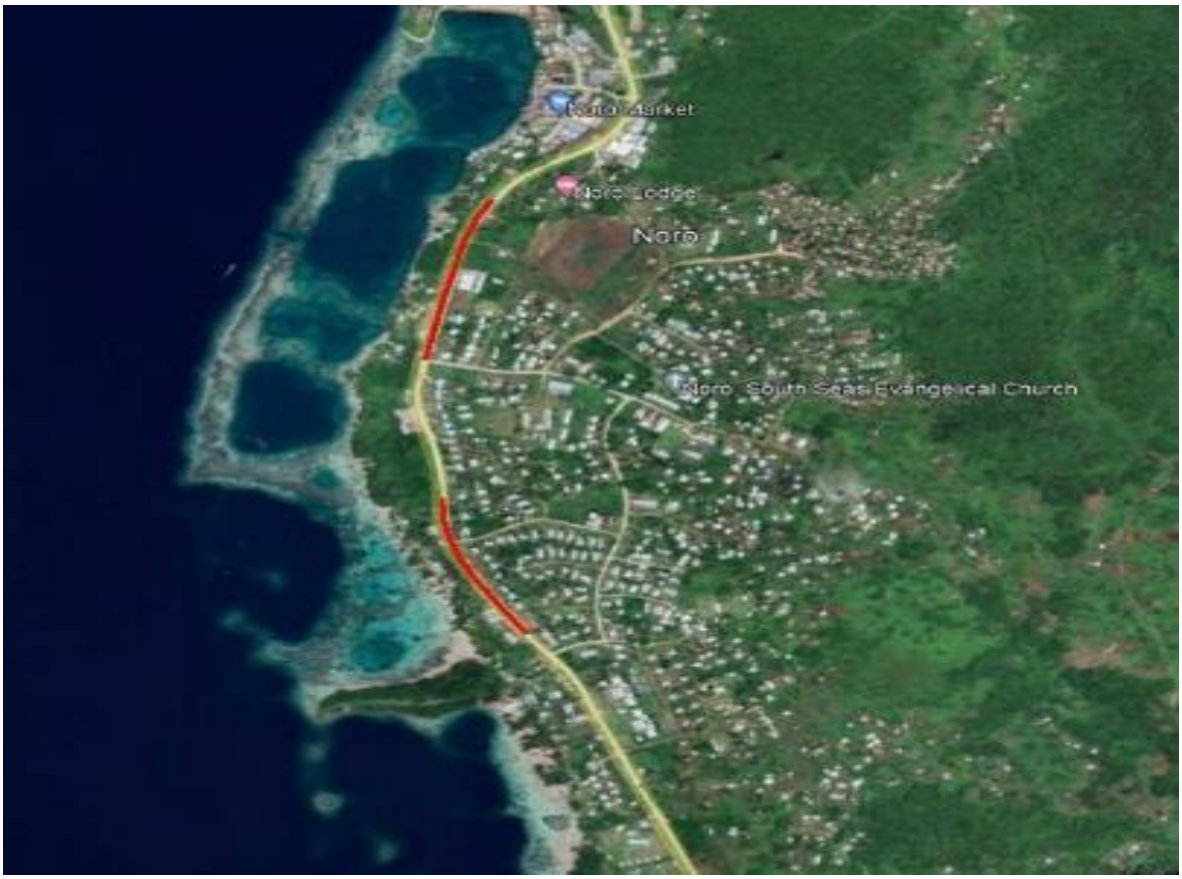


Figure 34: Two highlighted sections of Noro roads which are most at risk of causing impacts to marine and coastal environment

Project activities, particularly in these two highlighted sections 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 around Noro is outside the Marine Protected Areas and therefore impacts are expected to be minor and 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, bitumen, etc.).

It is expected that the impact of the Noro Roads 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 to ensure they are adequately resourced with national and international safeguard specialists to monitor safeguard compliance.

6.4.3 Key Biodiversity Area

The southernmost 500m of the target road network is within the outer fringe of a Key Biodiversity Area. The section of road is unsealed and it is expected that this section will have the subbase improved and the surface will be sealed with bitumen spraying.

The section of road is developed and is considered to be semi-urban. Of the 500m stretch of road, 190m is tree lined on both sides, however the land surrounding it is altered and not considered to be unique, pristine or rich in biodiversity (Figure 35).

Given the limited nature of the road upgrade, the semi-urban nature of the land and the ability to manage impacts through regular mitigation measures contained in this ESMP, the impacts to the Key Biodiversity Area are considered to be minor and no specific Biodiversity Management Plan is required.

Figure 35: Road into 500m section of Key Biodiversity Area (left) and road in relation to nearby developments (right)

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 or the use of quarries where land ownership may have disputes or legacy issues. Land will be required for construction camps, stockpile sites and potentially workers camps. It is not yet known where these sites will be and whether existing government land or private land will be used. The contractor will be responsible to identify these sites during the construction phase and make all arrangements for usage of the site(s) with the rightful owner. Details of the location and relevant site information will be highlighted by the Contractor in the CESMP.

There will also be a need to source aggregates for the roads and the source or ownership status of those resources are not yet known This will be identified by the Contractor and details of the approved site and associated activities will be updated in the CESMP.

7 Environmental and Social Management Plan

This section contains the detailed mitigation measures that are required for the various phases of the improvement 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 7.5.

7.1 Labour and Working Conditions

7.1.1 Occupational Health and Safety

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

- SIRAP2 Labour Management Procedure
- IFC Environmental, Health and Safety Guidelines (EHSG): General Section 2 (OHS)
- Safety at Work Act 1996

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
f. Remedies for adverse impacts such as occupational injuries, deaths, disability and disease

To support the development of the OHS Plan, SIRAP 2 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.

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

The Contractor shall 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 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 health and safety management system)
- Number of lost time injuries (an injury or illness certified by a medical practitioner that results in absence of work for at least one scheduled day or shift, following the day or shift when the accident occurred)
- Number of medical treatment injuries (the management and care of a patient to effect medical treatment or combat disease and disorder excluding: (i) visits solely for the purposes of observation or counseling; (ii) diagnostic procedures (e.g. x-rays, blood tests); or, (iii) first aid treatments as described below)
- Number of first aid injuries (minor treatments administered by a nurse or a trained first aid attendant)
- Number of recordable strikes of services (contact with an above ground or below ground service resulting in damage or potential damage to the service)
- Lost Time Injury Frequency Rate (the number of allowed lost time injury and illness claims per 100 full-time equivalent workers for the injury year specified)
- Total Recorded Frequency Rate (the number of recordable injuries [recordable/lost time/fatal] per 100 full-time equivalent workers for the injury year specified)

The monthly reports shall also include:

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

- Number of positive reinforcements
- For each fatality, injury or near miss incident, the Contractor shall provide a corrective action report within the monthly report detailing steps taken to ensure risks of a repeat incident are minimized.

7.1.1.1 Covid-19

A guidance for World Bank Projects for Covid-19 states that to prioritize and look after the wellbeing 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 utilized in conjunction with the national health guidelines on COVID-19.

7.2 Pollution Prevention and Resource Efficiency

7.2.1 Aggregates and Materials

Local aggregates: Local aggregates will either be sourced directly by the Contractor under a Building Materials Permit acquired by MID which is subjected for renewal after one year. The contractor if chooses can also source aggregates or through existing licensed contractors in possession of a Building Materials License on Guadalcanal since there are no known sources of river gravel sources in New Georgia. If using local existing licensed contractors, the Contractor is responsible for reviewing site operations to ensure that the appropriate licenses are in place. The Contractor will also ensure that quarries are selected from areas of the island which are considered to be free from the invasive Giant African Snail. The Contractor will not open any brand-new quarries or river extraction (both referred to here as quarries) sites for the HIR works. Within parameters of the above stipulations, the Contractor will have a choice as to which aggregate source to use.

The Contractor is also responsible for reviewing any conditions of operation which may have been imposed by the Building Materials License to ensure the operation is legal and that the contractor's work complies with any transport or purchase requirements.

In the case of the Contractor electing to re-open a former quarry site, a more detailed assessment of impacts will be completed by the Contractor in their CESMP along with mitigation measure suitable for the location and activities within the quarry. Consideration and planning will also be implemented on quarry rehabilitation following the completion of the works.

Should the Contractor seek to be granted their own Building Materials License to re-open former permitted quarries for the SIRAP2 project, the national obligations must be met, and the measures stipulated in this ESMP must also be adhered to. ECD must be satisfied with the management of the quarry and the permitting process must be completed before any activities can take place on the site. The Contractor must detail this in their CESMP. In this situation, the Contractor would also be required to develop a Quarry Management Plan (QMP) which follows the guidelines and practices detailed in Appendix D of this ESMP and which will be included in the CESMP for clearance by the Supervision Engineer. In addition to the plan, the Contractor will be responsible for obtaining all necessary quarry permits and approvals to undertake the Contract works.

For Contractor operated quarries, dust should be managed using the measures identified in this ESMP along with use of linear layout for materials handling to reduce the need for loading and unloading

[21] http://pubdocs.worldbank.org/en/324831581700447537/COVID-19-Guidelines-for-Contractors-CO-Final.pdf

and vehicle movements around the site. The QMP should include a provision for quarry dust and noise control; all equipment including crushers, aggregate processors, generators etc. should / if possible, be located in the quarry pit to minimize noise and dust emissions. When locating operations consideration should be given to prevailing wind conditions. Water is significant resource in quarry activities and where possible closed-circuit systems should be implemented for treatment and re-use in site activities and processes (e.g. washing plants). The source for quarries would be declared and approved by the Supervision Engineer. In order to minimise site waste, careful planning and understanding of product quality is required. Overburden by-product should be stockpiled for use in rehabilitation of the quarry site at a later date.

Other mitigation measures that have been identified for the project as a whole are also applicable to the quarry site if managed by the SIRAP2 Contractor. For example, chance find of archaeological artefacts or loss of biodiversity, damage to assets and infrastructure, erosion and sediment control measures (e.g. clean water diversion), wastewater treatment, noise and vibration mitigation etc.

Imported Aggregates: For any internationally sourced aggregates, the Contractor is responsible for ensuring that the source quarry is operating under an existing permit and is operating in compliance with that permit under the source country's legislation. International quarries will first be approved by the Supervision Engineer. The contractor 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

At the tender stage, the Contractor will be required to provide evidence that suitable source locations for aggregates has been identified and that communications have been established for the provision of large quantities of technically compliant aggregates within the timeframe and of the volume required by the Project. At the tender stage, the Contractor will be required to provide evidence that the source location of aggregates is able to fumigate the aggregates to the required standard.

The Contractor will be required to work with the SIG Biosecurity team to establish a secure perimeter around the identified stockpile sites prior to the arrival of imported aggregates. As with the MID stockpile site in Honiara, the perimeter of the identified stockpile site should be treated with agents designed to prevent Giant African Snail entering the area and infesting the imported aggregates. Any equipment bought into the stockpile site after decontamination will be thoroughly cleaned and made free from GAS prior to entry.

In all instances: The use closed/covered trucks for transportation of construction materials is a requirement.

Construction materials will be sourced commercially and use of wood from natural forests will not be permitted.

Chance find of archeological artifacts: It is possible that at any stage of quarrying or during the construction works new items of cultural importance or archaeological artifacts (WW2 artifacts, fossils, coins, articles of value or antiquity, and structures and other remains or fossil items of geological or archeological interest) can be revealed. In the event of the discovery of an item as defined above, 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.

Unexploded ordinance: The contractor will need to review any previous works undertaken, previous UXO surveys and verify that their ancillary sites were surveyed and cleared under SIRAP 2 UXO

clearance activities. Clearance of any laydown site external to the airside area will be the responsibility of the Contractor upon mobilization.

A UXO survey was undertaken for the geotechnical investigation test pit locations, however, it is possible that during any excavation works for drainage and related road activities, that there might be a chance find of UXO items. In the event of a discovery, the Contractor 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). It is the responsibility of the police force to report and coordinate the removal of the UXO. No works shall recommence on-site until instruction has been received from the RSIPF and MID.

7.2.2 Hazardous Substance Use, Storage and Disposal

Hazardous liquids (e.g., fuel and lubricants) must be managed through the use of self-bunded drums and tanks, in accordance with the specification. If—with the permission of the Supervision Engineer non-bunded vessels are used, the materials must be stored in designated areas within covered hardstand and bunded areas to prevent runoff to surrounding permeable ground. 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 (water tight), 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.

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

The bitumen and asphalt plant (including dust scrubber) should be located at the construction lay down area or quarry to contain potential environmental impacts. The location of the construction lay down area should be such that residential settlements and sensitive receptors are not impacted by noise, dust or runoff. The asphalt plant will need to be located in the southern, eastern corner of the Contractor laydown area which would effectively increase the distance of this plant from the northern community to approximately 200m away, 400m from the southern community and 550m away from the river. This would allow for more distance between plant and the nearest community as a means to mitigate potential impacts from plant emission during operation. There is potential that hydrocarbon product or contamination may be encountered during construction work. Depending on the volume of material it may be appropriate to excavate the affected soils and prepare for transport to a facility licensed to accept hazardous waste. Material should be secured in airtight containers for transport (as per Waigani Convention requirements for the trans-boundary movement of hazardous waste material).

7.2.3 Bitumen, Asphalt Plant and Concrete Production

Bitumen and asphalt production requires very high temperatures which pose a significant risk to workers and the general public. Therefore, the bitumen and asphalt plant should be located within a secure compound in the construction camp area, to ensure security and reduce the risk of unauthorized access. The plant also requires the use of hazardous materials that must be stored on hardstand areas or within bunded areas (both should be available at the construction camp).

The asphalt plant should be located at least 200m away from sensitive receptors to mitigate noise and odour emissions and to allow for more distance between the plant and the nearest community as a

means to mitigate potential impacts and plant emission during operation. The asphalt plant should have a concrete base on which the mechanical equipment will be fixed

It is possible that the project will require concrete production. If concrete is to be produced in-situ, care needs to be taken with slurry and runoff from the concrete, mixing and use. Concrete production should only take place when there is no rain forecast and restricted to the concrete camp area. Concrete slurry is highly alkali and cannot be diluted. Sandbags or diversion drains must be used to divert runoff from concrete cutting or setting areas to allow hardening. Hardened concrete can be considered a clean fill. Wastewater from concrete cutting, washing equipment or production must be collected and treated (settling and neutralisation through pH adjustment) before disposal.

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.

7.2.4 Construction Camp/Contractor Lay Down Area

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

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 personal.

Aggregate crusher, asphalt or bitumen and concrete batching plants must be located in an area within the laydown site that is approximately 200m or more from any community and other sensitive receptors such as water ways.

Stockpiling of materials such as sand or aggregates including other dust producing materials must be approximately 50m or more from water ways and other sensitive receptors.

Areas within the compound must be clearly marked for solid waste collection, machinery maintenance, hazardous substance storage and toilet facilities for workers. Each of these areas must be constructed in such a way to prevent any potential adverse impacts on the surrounding environment; ideally it should be located away from nearby communities.

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 asphalt and concrete production and machinery maintenance. This includes the containment of the asphalt plant to prevent any hazardous substances entering the local environment from rainwater run off prior to its treatment.

The ground of the construction lay down area will likely be compacted by the end of its use and so restoration will require scarification of the soil, application of topsoil and re-vegetation.

The construction lay down area is not a residential camp. Some foreign contract and project staff are expected to utilize existing local accommodation however it is expected that a residential workers camp will also be required. The IFC have minimum standards for workers accommodations which will be required for any SIRAP2 residential camps. These steps have been included within the codes of practice in Appendix E. Should a worker camp be required then these guidelines must be adhered to and as stated in this ESMP and CESMP as appropriate.

In addition to adhering the standards of accommodation, the Contractor will also be required to develop a Workers Management Plan (WoMP) which will be included in the CESMP as an appendix and cleared by the Supervision Engineer. The WoMP will include cultural protocols (including appropriate clothing and no work on a Sunday), management and restricting of visitors to the camp, visitor curfews, expected behaviors (noise, alcohol, within community areas), gift giving and receiving, disciplinary actions, etc.) The WoMP and the recruitment of overseas labor is discussed in more detail in Section 8.

7.2.5 Storm Water and Water Management

7.2.5.1 Stormwater Management

During construction clean water diversion bunds will be used to direct any runoff from undisturbed areas away from work areas, stockpiles and storage areas. The diversion bunds will direct this clean water to land for soakage. Runoff whether clean or treated should not be allowed to discharge directly to the coast as this can cause erosion. Soakage pits for stormwater will not be installed directly into a shallow aquifer and will be located under advisement from MID and Supervision Engineer.

7.2.5.2 Water Management

Water required for construction activities such as dust suppression and concrete production will need to be managed well, and alternative water sources must be utilised so as not to have impact on Noro Water Supply system. Rainwater harvesting or trucking by water truck from a possible source shall be considered.

It will be Contractor's responsibility to undertake groundwater and surface water monitoring at the laydown area and any water bodies within the proximity of the laydown and camp area and construction sites. The Supervision Engineer ensures that the Contractor monitors groundwater before, mid and end of the project as well as quarterly monitoring of surface water. The parameters that should be monitored 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. The Supervision Engineer will audit the results of the water quality test for compliance.

The Contractor will be responsible for securing water access that is adequate and continuously supplied throughout the construction phase.

At all times water efficiency, conservation and reclamation practices will be adopted.

Work practices and mitigation measures for spills will be implemented, including a Spill Response Plan and bunded areas for storage (for all project locations during construction and operation phase) and the specifications call for self bunded tanks to be used.

The contractor shall have spill kits readily accessible, with staff trained in their use in order to immediately contain any accidental spill and leaks from machineries.

7.2.6 Erosion and Sediment Control

The Noro roads runs along the highest point of Noro and it is clear that runoffs from the roads particularly Noro highway are directed to the coast and to the low areas north east of the road. Sediment or silt traps shall be installed, and clean water diversion bunds should be constructed around any excavation or cleared vegetation to prevent the ingress of runoff from surrounding areas. Any ponding which may occur within an excavated area shall either be allowed to percolate into the subsoil or pumped out to a settling area or used for dust suppression at a later date. Excavations should be kept to a manageable size to reduce the time of exposure.

Sediment basins and other sediment controls devices shall be operated and maintained in a manner that minimizes 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 always maintained 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. 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 contaminated with hydrocarbons or settling pond or tank for sediment-laden runoff).

All erosion and sediment controls will be the Contractor's responsibility to maintain an effective working order including reconfiguring drainage lines as required during the construction process to ensure dirty water is always directed into sediment controls. 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.

These erosion and sediment control measures must also be applied to the quarry sites operated by the Contractor.

An Erosion and Sediment Control Plan (ESCP) will be prepared for the proposed works, and this will be the Contractor'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 to not 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 postconstruction.

An ESCP will be prepared for all areas prior to use or disturbance including auxiliary areas under the control of the contractor such as stockpile and storage areas, access and haulage tracks, temporary waterway crossing, borrow areas, compound areas and material processing areas. Clearing and grubbing (or 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.

7.2.7 Wastewater Management

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

Wastewater from wash down areas is to be collected either in a settlement pond or tank to allow sediment and particulate matter to drop out (or processed through a filtration system) before the water can be reused as wash water, dust suppression or in other processes. A separate wash down area is required for machinery or material with oil or fuel residue as this wash water is required to be

treated through a mobile oil water separator. Wash water from concrete production, cutting, washing of equipment used and areas where concrete is produced must be collected and treated to lower the pH (closer to neutral) and to allow settlement of suspended solids. All wash down areas and wastewater treatment areas should be located within the construction laydown areas.

Treated wash water where possible should be reused for dust suppression or within other processes. Direct discharge to the marine or coastal environment or to the areas prone to flooding is strictly prohibited. Discharges of treated wash water are to occur to land only at least 200m 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). Contractors must have sufficient measures to avoid direct discharges when working adjacent to the marine and coastal environment which may include bunding (e.g., sand bags), demarcation of exclusion zones, and limited use of large machinery.

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), however should an incident occur, the Contractor must have a Spill Response Plan in place. The response plan should include details on the use of spill kits and absorbent items to prevent spills from entering the receiving sensitive environment (marine, ground, surface water). This Spill Response Plan should be applicable to all SIRAP 2 project works areas (airport, trenching routes, quarries, and transport routes). A Spill Response Plan should be in place for both the construction phase and the operational phase.

7.2.8 Solid Waste Management

The Noro Town Council operates a waste disposal site along the Noro – Munda Road. The following waste streams can be handled at the:

- General Waste: Plastic/Glass bottles and metal cans should be recycled if possible, otherwise they are to be disposed of in the general waste area. Construction waste material and all other solid waste materials are to be disposed of in a general disposal cell area.
- Organic (plant) waste: Plant waste, grass clippings, plants leaves can be disposed of at the landfill composing area.
- Septic waste: This is to be disposed of at the designated site within the landfill.

For any hazardous waste, this will be stored at an appropriate location approved by SIRAP PST and the Supervision Engineer at the laydown area which is 200m or more away from any water course. The storage unit must be properly secured with specific signages installed, have a hard stand surface and properly bunded, and hazardous material must be stored in a safely sealed container with specific detail labels to identify the material.

To avoid any potential adverse impacts from the storage of waste or the introduction of waste into the environment, a Solid Waste Management Plan (SWMP) will be developed (see Appendix D) by the Contractor and submitted for clearance annexed to the CESMP. The SWMP shall describe solid waste streams generated by the works and detail the approved disposal methods along with permissions. At all times, the Contractor is responsible for solid waste generated by the Works in accordance with the Environmental Health Act and National Waste Management and Pollution Control Strategy 2017-2026.

The SWMP should adhere to the SIG Environmental Health Act and National Waste Management and Pollution Control Strategy 2017-2026 follow the guidelines provided in Appendix E as a minimum, and 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.
- Confirm with HCC the process and permissions for using Ranadi Landfill for handling general project waste and septic waste.
- Contractor shall contact HCC to determine whether any quantities of the projects hazardous waste materials generated by the project are suitable to be handled at the Ranadi Landfill and obtain any permissions necessary.
- Contractor 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 to identify shipping route and licensed disposal facilities for all exported waste.
- Contractor to identify any export permits or conditions for export of waste.
- Identify those persons responsible for implementing and monitoring the SWMP.

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 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 will be generated in the form of concrete rubble and surplus materials from excavations and demolition of existing buildings. Most of the clean fill material can either be used to backfill areas if applicable or as a resource for general use by MCA, 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 MCA 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 defect's liability period shall be removed from the site and the country.

7.3 Community Health and Safety

7.3.1 Safety and Traffic Management

Constructions works and the transport of materials has the potential to impact communities through noise, dust, and road safety including interruption of access to shops and other essential services in Noro. The Contractor is responsible for developing a site-specific Traffic Management Plan (TMP) to be submitted with the CESMP which will specify how traffic (vehicle and pedestrian) will be managed, including transport times (outside peak hours), maximum speed and loads of trucks, use of flag controls at site entrances (construction laydown area), use of unsealed roads through sensitive communities, and around specific work areas. For each haul route, the TMP will need to include measures to address:

- Layout plans.
- Haulage routes and detours or temporary accesses (if needed).

- Vehicle traffic.
- Pedestrian traffic.
- 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 the port.
- Repairs to road damage caused by project vehicles.

The TMP should follow the guidelines set in the Safe Traffic Controls for Road Works Field Guide (www.works.gov.pg/files/roads-bridges/IF003_PNGFieldGuide.pdf) and adapted for the HIR works. The TMP will be included as an annex to the CESMP.

The TMP will also include any appropriate measures for minimizing numbers of shipments through consolidation of shipments and accurate calculations of aggregate needs.

7.3.2 Spill Prevention and Emergency Response

The Contractor will have a Spill Prevention and Emergency Response Plan in place to account for all potential instances. The plan will be developed to ensure that all fuels and lubricants used during the construction phase in machinery, equipment, generators are contained, collected, treated, and disposed of. The plan will (i) identify areas that are sensitive to spills and releases of hazardous materials; (ii) outline responsibilities for managing spills, releases, and other pollution incidents, including reporting and alerting mechanisms to ensure any spillage is reported promptly to the relevant parties; (iii) Include provision of specialized oil spill response equipment; (iv) include regular training schedules and simulated spill incident and response exercise for response personnel in spill alert and reporting procedures, the deployment of spill control equipment, and the emergency care/treatment of people or wildlife impacted by the spill, and; (v) measures for clean-up and restoration of the environment following any accidents.

7.3.3 Code of Conduct

In accordance with the World Bank's Standard Procurement Documents (SPDs), Contractors shall submit a satisfactory code of conduct to address the responsibilities of the individual, the management and the company towards the ESHS requirements of the Project, the prevention of GBV and the adherence to OHS requirements of the Project. The Code of Conduct will contain obligations on all Contractor's Personnel (including sub-contractors and day workers) that contain acceptable measures to address the social impacts of the project. The Code of Conduct should be written in plain language and signed by each worker to indicate that they have:

- received a copy of the code.
- had the code explained to them.
- acknowledged that adherence to this Code of Conduct is a condition of employment; and
- understood that violations of the Code can result in serious consequences, up to including dismissal, or referral to legal authorities.

A copy of the code shall be displayed in a location easily accessible to the community and project affected people. It shall be provided in languages comprehensible to the local community, Contractor's Personnel, Employer's Personnel and affected persons.

The Code of Conduct shall be based on the SIRAP Code of Conduct, which is included as Appendix E.

7.3.4 Labour Influx

In addition to the Codes of Conduct that the Contractor will prepare for GBV/Human Trafficking/SAE, the Contractor will also prepare a Code of Conduct to describe the expected behaviors of their project worker in relation to the local communities and their social sensitivities.

The Contractor would be required to prepare an Influx Management Plan as part of the CESMP an influx of skilled worker who may originate from overseas and other parts of the Solomon's to work at Noro. The focus of this plan is to ensure that non-local workers are inducted on the culture of Honiara and to manage inappropriate contacts between the non-locals and the residents of Noro that may result in GBV, sexual abuse, and other miss conduct. A Labor Influx Management Plan addresses specific activities that will be undertaken to minimize the impact on the local community, including elements such as worker codes of conduct, training programs on HIV/AIDS, etc. [22]

The Contractor is required to maximise the number of local workers from the nearby communities. Preference should be given to a local recruitment process, only relying on workers from other islands or from overseas for vacancies which cannot be filled locally. As part of the CESMP, the Contractor 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 will be required to provide justification for any roles not filled locally.

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. Employment of casual labour through an ad hoc process at the project site may encourage potential workers from across SI to migrate to the project site for the possibility of work and this should be avoided. This opportunistic influx would have the potential to create a negative burden on the local communities in terms of their available resources and increases in anti-social or insensitive behaviours.

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 oversea 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 MID and PST with police background clearances prior to arrival in country, regardless of the visa application process.

In addition to these requirements, the Contractor is to ensure that all overseas project staff undergo a cultural familiarization 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 behaviors of the staff in their interactions with these communities. The MID, PST and the Supervision Engineer shall provide to the Contractor the approved service providers which shall include recognized NGOs and others for conducting this training.

As per the SI Labour Act, article 46 states that no child under the age of twelve years shall be employed in any capacity whatsoever and article 47 states that a person under the age of fifteen shall not be employed or work in nay industrial undertaking, or in any branch thereof. As the Solomon Islands is a member of the International Labour Organisation (ILO) which states that the minimum age for hazardous work is 18 and given that construction work with heavy machinery can be classed as

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

hazardous work, the Contractor shall ensure that no children under the age of 18 are employed to work in a construction or physically demanding role.

7.3.5 HIV/AIDS, Gender Based Violence, Human Trafficking and Sexual Abuse Exploitation

All employees (including managers) will be required to attend training prior to commencing work to reinforce the understanding of HIV/AIDS, GBV, human trafficking and SAE. 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, human trafficking and SAE 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, human trafficking and SAE throughout the life time of the civil works, including monitoring and reporting.

7.3.5.1 HIV-AIDS Prevention

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

The Supervision Engineer shall provide to the Contractor a list of approved service providers which shall include recognized NGOs and/or recognized local health departments. From the provided list, the Contractor shall enter into agreement with one service provider to undertake the HIV-AIDS IEC campaign. The cost of the campaign shall be funded by the Contractor from the provisional sum provided in the bill-of-quantity. The contractor shall make staff available for a total of at least 0.5 days per month for formal trainings including HIV/AIDS.

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

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

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

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

The Contractor shall include in the program to be submitted for the execution of the Works under Sub-Clause 8.3 the IEC campaign for Site staff and labor and their families in respect of Sexually

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

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

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

The Supervision Engineer shall provide to the Contractor a list of approved service providers which shall include recognized NGOs and others for conducting training on GBV. From the provided list, the Contractor 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 from the provisional sum provided in the bill-of-quantity. The contractor shall make staff available for a total of at least 0.5 days per month for formal trainings including GBV.

As part of the WoMP, the Contractor 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 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 and the SIG who will cancel the work permits. The contractor will be required to return them home within 48 h of notification by the Supervision Engineer.

The table below, Table 4, shows the activities that will be undertaken on the project to address GBV. This is based on the World Bank's August 2018 Draft 'Good Practice Note: Recommendations for Addressing Gender Based Violence in Investment Project Financing involving Major Civil Works'. These activities reflect the 'Low' risk rating for the project as described in the Project Appraisal Document.

Table 9: SEA/ SH Action Plan

When	Action to Address GBV Risks	Timing for Action	Who is Responsible for Action	Ongoing Risk Management
	Sensitize the IA as to the importance of addressing GBV on the project, and the mechanisms that will be implemented.	• Preparation. • Implementation.	• Task Team.	• Task team to monitor and provide additional guidance as necessary.

When	Action to Address GBV Risks	Timing for Action	Who is Responsible for Action	Ongoing Risk Management
Identification/ Appraisal	The **project's social assessment** to include assessment of the underlying GBV risks and social situation, using the GBV risk assessment tool to provide guidance and keeping to safety and ethical considerations related to GBV data collection. No prevalence data or baseline data should be collected as part of risk assessments.	• Preparation. • Implementation (before civil works commence). • PCN and QER/Decision Review (GBV Risk Assessment Tool).	IA for social assessment and ESMP. Contractor for C-ESMP. • Task Team for GBV Risk Assessment Tool.	• Ongoing review during implementation support missions. • Update project ESMP and Contractor's ESMP (C-ESMP) if risk situation changes.
	Map out GBV prevention and response actors in project adjoining communities.[23] This should incorporate an assessment of the capabilities of the service providers to provide quality survivor centered services including GBV case management, acting as a victim advocate, providing referral services to link to other services not provided by the organization itself.	• Preparation • Implementation	• IA	• Update mapping as appropriate
	Have GBV risks adequately reflected in all **safeguards instruments** (i.e., Project ESMP, C-ESMP)—particularly as part of the assessment in the ESA. Include the GBV mapping in these instruments.	• Preparation • Implementation (before civil works commence).	• IA for social assessment and ESMP. • Contractor for C-ESMP.	• Ongoing review during implementation support missions. Update project ESMP and Contractor's ESMP (C-ESMP) if risk situation changes.
	Develop a **GBV Action plan** including the **Accountability and Response Framework** as part of the ESMP. The contractor/consultant's response to these requirements will be required to be reflected in their C-ESMP.	• Preparation • Implementation (before civil works commence)	• IA	• Ongoing review during implementation
	Review the **IA's capacity** to prevent and respond to GBV as part of **Safeguard Preparation**.	• Preparation. • Implementation.	• Task Team	• Ongoing review during implementation support missions. Update project ESMP if risk situation changes.

[23] A mapping exercise of GBV prevention and response actors should ideally be undertaken at a country level and shared with all project teams.

When	Action to Address GBV Risks	Timing for Action	Who is Responsible for Action	Ongoing Risk Management
	As part of the **project's stakeholder consultations, those affected by the project should be properly informed of GBV risks** and project activities to get their feedback on project design and safeguard issues. Consultations need to engage with a variety of stakeholders (political, cultural or religious leaders, health teams, local councils, social workers, women's organizations and groups working with children) and should occur at the start and continuously throughout the implementation of the project.	• Consultations need to be continuous throughout the project cycle, not just during preparation.	• IA.	• Monitoring of implementation of Stakeholder Engagement Plan. • Ongoing consultations, particularly when C-ESMP is updated.
	The **Stakeholder Engagement Plan** of the project, which will be implemented over the life of the project to keep the local communities and other stakeholders informed about the project's activities, to specifically address GBV related issues**.**	• Consultations need to be continuous throughout the project cycle, not just during preparation.	• IA.	• Monitoring of implementation of Stakeholder Engagement Plan. • Ongoing consultations, particularly when C-ESMP is updated.
	Make certain the availability of an **effective grievance redress mechanism (GRM)** with multiple channels to initiate a complaint. It should have specific procedures for GBV including confidential reporting with safe and ethical documenting of GBV cases. Parallel GRM outside of the project GRM may be warranted for substantial to high risk situations.	Prior to contractor mobilizing.	IA, but discussed and agreed upon with the Task Team.	Ongoing monitoring and reporting on GRM to verify it is working as intended.
	Projects which do not use loan/credit/grant proceeds to hire GBV service providers at the start of project implementation encourage Borrowers include an escalation clause in the Environmental & Social Commitment Plan (ESCP) should GBV risks become apparent over the course of the project implementation.	Preparation.	Task Team.	Task Team.
Procurement	Clearly define the GBV requirements and expectations in the **bid documents.**	Procurement.	IA.	Review by Task Team.
	Based on the project's needs, the Bank's Standard Procurement Documents (SPDs), and the IA's policies and goals, define the requirements to be included in the bidding documents for a **CoC which addresses GBV**.	Procurement.	IA.	Review by Task Team.
	For **National Competitive Bidding (NCB) procurement,** consider integrating the ICB SPD requirements for addressing GBV risks.	Procurement.	IA.	IA with review by Task Team.

When	Action to Address GBV Risks	Timing for Action	Who is Responsible for Action	Ongoing Risk Management
	The procurement documents should set out clearly how adequate GBV costs will be paid for in the contract. This could be, for example, by including: (i) line items in bill of quantities for clearly defined GBV activities (such as preparation of relevant plans) or (ii) specified provisional sums for activities that cannot be defined in advance (such as for implementation of relevant plan/s, engaging GBV service providers, if necessary)	Procurement.	IA.	Review by Task Team.
	Clearly explain and define the requirements of the bidders **CoC** to bidders before submission of the bids.	Procurement.	IA.	Review by Task Team.
	Evaluate the contractor's GBV response proposal in the C-ESMP and confirm prior to finalizing the contract the contractor's ability to meet the project's GBV requirements	Procurement.	IA.	Review by Task Team.
Implementation	**Review C-ESMP** to verify that appropriate mitigation actions are included.	• Implementation.	• IA.	• Review by IA. • Review by Task Team.
	Review that the GRM receives and processes complaints to ensure that the protocols are being followed in a timely manner, referring complaints to an established mechanism to review and address GBV complaints.	• Implementation.	• Task Team. • IA	• Ongoing reporting. • Monitoring of complaints and their resolution.
	Codes of Conduct signed and understood • Ensure requirements in CoCs are clearly understood by those signing. • Have CoCs signed by all those with a physical presence at the project site. • Train project-related staff on the behavior obligations under the CoCs. • Disseminate CoCs (including visual illustrations) and discuss with employees and surrounding communities.	• Initiated prior to contractor mobilization and continued during implementation.	Contractor, Consultant, IA.	• Review of GBV risks during project supervision (e.g., Mid-term Review) to assess any changes in risk. • Supervision consultant reporting that CoCs are signed and that workers have been trained and understand their obligations.[24] • Monitoring of GRM for GBV complaints. • Discussion at public consultations.
	Have project workers and local community undergo **training** on SEA and SH.	• Implementation.	• IA, Contractors, Consultants	• Ongoing reporting.

[24] Civil works supervision consultant's monthly reports should confirm all persons with physical presence at the project site have signed a CoC and been trained.

When	Action to Address GBV Risks	Timing for Action	Who is Responsible for Action	Ongoing Risk Management
	Undertake regular **M&E** of progress on GBV activities, including reassessment of risks as appropriate.	• Implementation.	• IA, Contractors, Consultants.	• Monitoring of GRM. • Ongoing reporting.
	Implement appropriate **project-level activities** to reduce GBV risks prior to civil works commencing such as: • **Have separate, safe and easily accessible facilities for women and men working on the site**. Locker rooms and/or latrines should be located in separate areas, well-lit and include the ability to be locked from the inside. • **Visibly display signs around the project site** (if applicable) that signal to workers and the community that the project site is an area where GBV is prohibited. • As appropriate, public spaces around the project grounds should be **well-lit.**	• Prior to works commencing.	Contractor/ Supervision Consultant • Task Team.	• Ongoing reporting. • Reviews during implementation support missions.

The WoMP will also provide details of how the Contractor will provide for workers camp facilities, workers camp operations and the management of off duty workers. Guidelines for the WoMP are provided in Appendix E and the WoMP will be included in the CESMP as an annex.

7.3.5.3 General Social Mitigations

Any impacts or concerns from communities and residents of Noro due to the works will be addressed throughout the SIRAP2 life through the disclosure and public consultation process. Where possible local labor and businesses will be used to provide services and general supplies for the SIRAP2 works. This includes supply of fuel and hire of machinery and hiring of local security contractors.

7.4 Biodiversity and Natural Resources

7.4.1 Biosecurity

All imported vehicles, equipment, materials and machinery will be inspected by Biosecurity Solomon Islands on arrival. The imported items must be free of soil, any plant material and any other biosecurity risk. The Contractor is advised to arrange for their vehicles and machinery to be thoroughly cleaned of all contamination prior to shipping. Items shipped inside containers must also have the inside of the container thoroughly cleaned of all previous cargo residues, including dunnage. Government or accredited agent certificates of cleanliness can be submitted to Biosecurity Solomon Islands and may reduce the requirement for inspection on arrival[25].

For imported aggregates and 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*

[25] http://www. Biosecurity.gov.sb/importers#1048830-machinery-equipment-transport

Fumigation with sulphuryl fluoride (Vikane) at normal atmospheric pressure at a rate of 64g/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.

7.5 Mitigation Tables

Commensurate proportional approach required in the WB ESF the table covers all potential management measures for Noro Roads upgrading works. The Management matrix summarizes the mitigation measures required, the responsible entity and the applicable project locations

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
DETAILED DESIGN/ PRE-CONSTRUCTION MOBILISATION STAGE					
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 Traffic Management Plan (TMP) to be developed by Contractor. For each haul route, the TMP will need to include measure 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 the port. 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	All location related to works All haulage routes and along project affected roads	Minimal (requirement of bidding documents)	Contractor	SIRAP2 PST/MID/ Supervision Engineer

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

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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 (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 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. 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	Supervision Engineer
Health and Safety	The Contractor shall: • Prepare OHS Management Plan as part of CESMP; • Conduct Induction training for Contractor personnel; • Sign Code of Conduct (if instructed) for Contractor, 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 shall provide a report to the Engineer monthly outlining compliance, achievements and training including the number of lost time	All Location related to the resealing work	Minimal (requirement of bidding documents and standard construction practices).	Contractor	SIRAP2 PST

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	incidents; the number of near-miss reports; first aid training; completed HIV/AIDS and GBV training; and OHSS training courses completed by staff. 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, Solomon Power and Telekom prior to work commencing and a representative from Solomon Power will be on site during works.				
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 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 D; • Sign Codes of Conduct (if instructed) for Contractor, Managers and other personnel. Refer to Appendix F 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	SIRAP2 PST
Consultations	• Develop a consultation and communication plan which implements the Contractor responsibilities in the SIRAP 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	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	Ancillary Sites	Part of project and contract costs	Contractor CLO and PST CLO	PST NSS and PM

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	encroachment from the surrounding communities, consultations will be undertaken with the asset owner to facilitate any temporary relocation of the asset (e.g. market stall) for the duration of those works. The SIRAP2 RPF provides the requirements for these arrangements. 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 unauthorized access. Additional fencing may be required around specific stores (e.g. hazardous substances) to prevent access by unauthorized 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 waste water from asphalt and 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	Supervision Engineer
Management of Workers	• The contractor will be required to produce a Workers Management Plan (WoMP), and Influx Labour Management Plan for the road works	Noro Town	Part of standard contract costs	Contractor	Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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 F). 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 with details of approved service providers who are able to undertake this training. From the provided list, the Contractor 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 from the provisional sum provided in the bill-of-quantity. The contractor shall make staff available for a total of at least 0.5 days per month for formal 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 with details of approved service providers who are able to undertake this training. The cost of the campaign shall be funded by the Contractor from the provisional sum provided in the bill-of-quantity. • The Contractor is required to maximise the number of local workers from the Noro communities. The Western Provincial Government will endeavour to provide a list of local workers and skills for the contractor, prior to mobilizing. Preference should be given to a local recruitment				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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 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 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 and the SIG who will cancel the work permits. The contractor 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 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 will provide workers with a grievance redress mechanism as per the requirements in the LMP				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
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 land 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 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 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. 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	SIRAP2 PST

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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 raw materials during the pre-construction/construction phase. These can be minimised through: • Identify and locate waste disposal sites, stockpile sites and equipment (e.g. asphalt/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 asphalt/concrete plant, 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.	All components	Minimal standard practices (part of the design	Contractor	Supervision Engineer / PST NSS

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	• Ensure all equipment is serviced and issued with warrant of fitness (as required). Any machinery deemed to be polluting the air must be replaced (or fixed) on instruction by the 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 works commencing. Contractor to undertake groundwater monitoring prior to any site 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 SIWA.	All components	Minimal (part of standard design and construction practices)	Contractor	SIRAP2 PST & Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	Any asphalt plant will be located at least 150m away from any body of water and 300m from communities. 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 contractors responsibility that relevant Water permits are in place No runoff from laydown sites, construction works or other project activities will enter any waterway. The Contractors 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	Contractors should include maximum rainwater reclamation and water conservation/ efficiency in all components. The Contractors 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	Supervision Engineer & SIWA
Sourcing aggregate material	MID have provided a list of available quarries on Noro. 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 land owners to secure access to site and resource extraction. Consultations and negotiations will be done under the direction of the CLO. If the Contractor 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 1 ESMF & ESMP	All components	Minimal (part of standard design and construction practices)	Contractor	Supervision Engineer, SIRAP2 CLO, SIRAP2 National Safeguards Specialist & ECD

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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); 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 will be responsible for reinstating the land to its pre-project condition; iv. Any rivers or streams identified as being a natural habitat[27] 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, will not be permitted to be used as sources of gravel; 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;				

[27] 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.

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	vi. Use of approved machinery for gravel extraction from rivers such as excavator or backhoe. Dredging or similar operations for the winning 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; 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 New Georgia Island, the Contractor 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 CLO and the PST CLO will identify the required traditional				

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	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 Polices 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 who will take advice from the SIRAP2 National Safeguard Specialist and SIRAP2 Project Manager. For rivers on New Georgia Island, the extraction limit will be set based on ability of the resource to regenerate and the potential environmental impacts. Contractor 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. Imported aggregates will be from an existing permitted quarry in an approved country of origin. The source quarry must be operating in compliance with the conditions of their own national permit and good international standards. Supervision Engineer to approve source quarries prior to purchases agreements being signed. To prevent inter-island spread of GAS, stockpile sites for imported and local aggregates which are transhipped 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 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.	All locations	Minimal (part of standard design and construction practices)	Contractor	Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	At all times, the Contractor is responsible for the safe and sound disposal of all solid waste generated by the Works. 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). • Hazardous waste (i.e. asbestos, waste oil etc.) The Contractor will determine if the permitted landfill site on New Georgia island 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 Noro waste. The Ranadi Landfill operated by Honiara City Council (HCC) Environmental Health Division. The landfill 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. • 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. At all times, the Contractor is responsible for solid waste generated by the Works in accordance with the Environmental Health Act and in accordance with the				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	Solomon Islands Waste Management and Pollution Control Strategy 2017-2026. The Contractor 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. • Confirm with HCC the process and permissions for using Ranadi Landfill for handling general project waste and septic waste. • Contractor shall contact HCC to determine whether any quantities of the projects hazardous waste materials generated by the project are suitable to be handled at the Ranadi Landfill and obtain any permissions necessary. • Contractor 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 to identify shipping route and licensed disposal facilities for all exported waste. • Contractor to identify any export permits or conditions for export of waste. • Identify those persons responsible for implementing and monitoring the SWMP. 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 responsibility to obtain all necessary permissions for transport and safe				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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. 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 (watertight), constructed from chemically resistant material, and be sheltered from the rain as rain water allowed to collect within the bund could	All locations	Minimal (part of mobilisation and construction planning)	Contractors	SIRAP2 PST

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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 and workers trained. The response plan should include details on the use of spill kits and absorbent items to prevent spills entering the receiving sensitive environment (ground, surface water). This plan should be applicable to all Noro roads project works areas. A SRP should be in place for both the construction phase and operational phase. Bitumen will be stored at the construction laydown area. Identify suitable area for hardstand and bunded storage areas. These areas will be at least 100m inland from the coast. Any empty asphalt or bitumen drums will be removed offshore and either returned to supplier or disposed of in a legally approved facility outside Solomon Islands. It is the Contractor'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 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 (only small quantity will be sourced from Honiara)) for general 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 Public Works Department to be stored for future use by the Ministry. This location shall also be subject to approval by the Supervision Engineer. These				

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	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. 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. 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. All fuel to be stored in self-bunded containers.				
Importation of equipment and materials	All imported vehicles, equipment, materials and machinery will be inspected by Biosecurity Solomon Islands on arrival. The Contractor is to arrange for their vehicles and machinery to be thoroughly cleaned of all contamination prior to shipping (e.g. soil, rocks, plant material, seeds, etc). Items shipped inside containers must also have the inside of the container thoroughly cleaned of all previous cargo residues, including dunnage. Obtain import permits and quarantine certification prior to export from country of origin. Certificate of fumigation and verification of source (as per national requirements) to be submitted to Quarantine Inspectors and approved by the Supervision Engineer prior to delivery to site. For imported aggregates and 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*	All components	Minimal (part of mobilisation and construction planning)	Contractor	Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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. The contractor 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 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	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. Consultation should include all aspects of the project including the road works site, quarries and transport routes. Consultation shall include raising awareness of the project GRM, how to complain and how complaints will be managed. 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. Advertise, maintain and operate a grievance response mechanism, including publishing statistics on resolutions.	All components	Minimal (part of mobilisation and construction planning)	Supervision Engineer SIRAP2 PST NSS	SIRAP2 PST CLO & NSS
Worker grievances	Establish a worker grievance mechanism as described in the SIRAP2 Labour Management Procedure. Monitor and report on all grievances received.	All locations	No additional costs	Contractor	Supervision Engineer
Local business grievances	Ensure that local businesses/roadside vendors and are included in the public consultation and disclosure communication process. Regular communication should be made with affected parties to ensure that they are fully aware of the proposed program of works and how to complain and how complaints will be managed.	All roads	Minimal (part of mobilisation and construction planning)	Contractor	Supervision Engineer
CONSTRUCTION STAGE					

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
Traffic (vehicle and pedestrian) and construction safety	The Contractor will prepare and issue a site-specific Traffic Management Plan 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 Contractors ESMP. The Contractor 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 to prevent traffic accidents. The workers shall have relevant safety equipment and training. The TMP should prohibit the use of engine breaking close to and through communities and inhabited areas, it should also regulate the working hours for the haul trucks. The TMP should include traffic control measures for nighttime works. Special care must be taken when construction works reach any school nearby. Coordination with school representatives must occur for safe passage of students and parents through a construction area. May include restricted work hours, reduced speeds and detours. Contractor 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 Contractors	Supervision Engineer
Site Safety	Restrict access to the construction zone through warning signs, temporary gates, fencing or other construction zone demarcation at all entry points, including Contractor Laydown site. Demarcate all excavations of 2.0m depth or greater and side slopes in excess of 2:1 (horizontal to vertical) through construction fence, 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 PPE and consider providing for on-site storage of workers allocated PPE.	All components	Included as the provisional sum in the bill of quantity	Contractor	Supervision Engineer SIRAP2 PST

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
Soil erosion	All erosion and sediment controls will be Contractors 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 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 shall submit an 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 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. 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	All locations	Minimal (part of standard construction practice)	Construction Contractors	Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	the Contractors responsibility. The Supervision Engineer ensures that the Contractor monitors river quality monitoring before, mid and end of the project. The Contractor 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 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.				

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	• 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 materials 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.	All locations	Minimal (part of standard construction practice)	Contractor	Supervision Engineer
Vegetation Clearance	For any vegetation clearance: The Contractor will limit any areas to be cleared to the minimum workable area. 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 laydown and storage sites. 100m buffer zone established around water courses and coastline. Contractors machinery operators to understand boundaries. Cleared vegetative material to be disposed of by communities for fuel wood. All topsoil (minimum 150mm depth) must be stripped and stockpiled and re-applied to revegetated areas. Final grading must re-construct the original landscape shape and grade at edges of the construction zone.	All location (Laydown and storage sites and roads)	Minimal (part of standard construction practice)	Contractor	Supervision Engineer and National Safeguard Specialist

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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, contractors must remove branches and assist villages in transporting logs to appropriate locations. The contractor to informed communities ahead of time on the actual vegetations that need to be removed.				
Waste disposal	The Contractor shall prepare and Implement approved Solid Waste Management Plan (SWMP). The plan: • Identifies the landfill 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). • Require the contractor 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. 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 responsibility to obtain all	All locations (laydown site, stockpile site, work location and workers facilities)	Minimal (part of standard construction practice)	Contractors	Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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. • 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 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.				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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 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 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. 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 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).	All locations	Minimal (part of standard construction practice)	Contractors	Supervision Engineer & ECD

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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 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.				

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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. 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 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.	All locations	Minimal (part of standard construction practice)	Contractors	Supervision Engineer
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).	All locations (particular focus on identified sensitive social receptors – schools, churches, health centres, market stalls)	Minimal (part of standard construction practice)	Construction Contractors	Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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. Asphalt crushing shall only be undertaken with a west crushing plant. 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 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.	All locations (particularly close to identified sensitive receptors)	Minimal (part of standard construction practice)	Construction Contractors	Supervision Engineer, SIRAP2 PST & ECD

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	Crushing plant to be located away from residences 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. phone number, physical address and email). The WB/IFC EHS Guidelines[28] 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 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 workings 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.				

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

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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 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. 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 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.).	All locations	Safety equipment included in construction cost Minimal (part of standard construction practice)	Construction Contractors	Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	Conduct road safety audit prior to completion of construction to ensure road safety designs 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 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.	All locations	No marginal cost	Contractors	MCA/ Supervision Engineer
Landscape degradation	The contractor is 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 commencement of works. The plan will be approved by the Supervision Engineer. Restoration of quarry sites to be completed in accordance with ESMP and QMP. Construction materials will be sourced commercially and use of wood from natural forests will not be permitted. Contractor to include provision for construction lay down area rehabilitation following the completion of the construction phase. Restoration of quarries to be completed in accordance with ESMP. 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 plant species characteristic for the landscape in the course of restoration of the vegetation cover.	All locations	Minimal (part of standard construction practice)	Contractors	SIRAP2 PST/ Supervision Engineer / ECD

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	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 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 bioengineering 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.				
Hazardous substances and safety and pollution	Hazardous substances and materials may be specified and used in construction. It is the Contractor'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 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.	All locations (particularly near the identified environmental receptors: rivers)	Safety equipment included in construction cost Minimal (part of standard construction practice)	Contractors	Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	Precautions should be in place to prevent wastewater and hazardous substances / materials entering the environment (e.g. fuel spillage, wastewater containing fire retardant during firefighting), however should an incident occur, the Contractors SPRMP must be 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. A Spill Prevention and Emergency Response Plan should be in place for both the construction phase and operational phase. The response plan should include details on the use of spill kits and absorbent items to prevent spills from entering the receiving sensitive environment (ground, surface water). This Spill Prevention and Emergency Response Plan should be applicable to all project works areas (road sections, laydown, quarries, and transport routes). The plan should be in place for both the construction phase and the operational phase. 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 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 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 any bird, reptile or mammal species is identified as being potentially impacted (e.g. nesting bird in area of proposed vegetation	All locations	No marginal cost	Contractor	Supervision Engineer / SIRAP2 PST / ECD

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	clearance) work are to stop in the specific location of the find and the ECD and SIRAP2 PST be notified immediately for instruction to proceed. The contractor 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 hunting, foraging, logging or other damaging activities. For large trees in the vicinity of the activity, mark and cordon off with a fence large tress and protect the root system and avoid any damage to the trees. Marine environment and any open water drain discharging to the marine environment will be protected, from construction site run-off, with appropriate erosion and sediment control feature to include by not limited to bunds, silt fences etc. There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas. Ensure the full payment of compensation for lost crops and assets to rightful owners.				
Health and safety	Do not commence works until the Contractors 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 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 work camps.	All locations	Included as provisional sum in the bill of quantity	Contractor	Supervision Engineer / SIRAP2 PST

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	Construction lay down area to be fenced to prevent access by unauthorised personnel. First aid training to be provided as required to site workers with basic first aid services to be provided by Contractor e.g. stretcher, vehicle transport to hospital. First aid kits to be located in communal areas or marked areas in the unlikely event of an incident occurring. Provide education on basic hygiene practices to minimize spread of diseases. 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 the 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 Laydown Area/Workers Camp – Design	If workers accommodation is required, the Contractor is required to provide its own camp facilities to accommodate the personnel and in accordance with	Construction Camp/office site locations	Minimal (part of standard construction practice)	Contractors	Supervision Engineer MID

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
	WB's Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced Labour Influx. The Contractor shall prepare a Workers' Camp Management Plan (WCMS) which prescribes minimum environmental requirements in order to ensure that the operational of workers' camp will not cause any harmful effect to the environment and community. Throughout the construction and operation of workers camp, the Contractor will be fully responsible for carrying out the job in an environmentally and socially appropriate manner. Furthermore, the Contractor shall comply with the requirements outlined in ESMP. The Construction Camp (Contractor Laydown Areas): • Must be constructed on a solid surface and located to not cause disturbance to adjacent land and landowners. • Must not be located with floodplains, coastal hazard, and landslip prone areas, and shall have a minimal adverse environmental effect. • Must have the minimum requirements regarding facilities and maintenance.				
Damage to assets and infrastructure	Maintain high standard of site supervision and vehicle and plant operation to reduce risks of damage to water, power and telecommunication lines. Prepare procedures for rapid notification to the responsible authority (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 Contractors. Provide assistance with reinstatement, in the event of any disruption. Accidental damage to community assets including crop trees or agricultural will be compensated (facilitated by CLO) by the Contractor 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	Contractors	Supervision Engineer / SIRAP2 PST

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
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 project program of activities and the GRM process. Consultation should include all aspects of the project including the road works, quarries and transport routes. SIRAP2 NSS will be the Contractors key facilitator for all consultations. Signage 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) that comprises of key community members including chiefs, pastors/ priest, teachers, youth leaders, resource owners etc) that work on a voluntary basis to inform communities on certain issues but also help in resolving complaints and grievances where applicable. CAC can work with Contractors.	All components	Minimal (part of standard construction practice)	SIRAP2 National Safeguards Specialist Supervision Engineer Contractor	SIRAP2 PST 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. Signage should be used in public areas around the vicinity of works advising 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	SIRAP2 PST Supervision Engineer

POTENTIAL NEGATIVE IMPACT	ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS[26]	MITIGATION RESPONSIBILITY	SUPERVISION RESPONSIBILITY
OPERATION STAGE					
Road Safety and Integrity	Monitor 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.	Noro	Additional to Project Costs/MID	MID Noro 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 Laydown Areas	Construction camps must be removed when construction is complete, and the land restored to its pre-construction condition.	Construction Camp/Contractor Laydown Areas/office site locations	No marginal cost (standard operating procedure)	Contractor	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 Noro Office	MID HQ

8 ESMP Implementation

MID is the implementing agency for the road component of SIRAP2.

The SIRAP2 National Steering Committee, comprised of representatives of different central and line agency members[29], will provide overall oversight of Project implementation and of the Project and PST, and to makes Project strategic decisions. It will be critical to have someone from Noro involved. The SIRAP2 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.

8.1 Roles and Responsibilities

The following are the roles and responsibilities:

- **SIRAP2 PST**: The SIRAP2 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 contractors where appropriate for CESMP) to implement consultation plans for the SIRAP2 upgrade works.
  - Monitors and manages of 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 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. The Supervision Engineer will work closely with the Contractor 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 Contractors 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 respond to incidents, non-compliances, review of CESMP, update of the ESMP and other tasks.

[29] The National Steering Committee comprises: (i) Permanent Secretary (PS) Ministry of Finance and Treasury; (ii) PS MID; (iii) PS MCA; (iv) Provincial Secretary of Malaita Province; (v) Provincial Secretary of Western Province; (vi) Provincial Secretary of Temotu Province; and (vii) Deputy Secretary – technical of MID.

- 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 and reporting all instances to PST. They are also responsible for escalating recurring instances of noncompliance by the Contractor 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:** It is the contractor'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 is 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 Contractors 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.

8.2 Contractors ESMP

The Contractor's ESMP (CESMP) will be the Contractor guiding document for the implementation of this ESMP during works the CESMP will be reviewed and approved based on the requirements of the ESMP and will be their management plan for the practical implementing of these requirements. The CESMP will contain the contractor's methodology and plan for adhering to their safeguard requirements.

Additionally, the CESMP will detail how the Contractor plans to resource their team with personnel and financial resources as per the Contract. The Contractor 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 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 Contractors 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 Specialists. Once the CESMP has been approved, it will be disclosed by the Contractor and the PST using the same methods as required for the ESMP disclosure.

8.2.1 CESMP required Sub Plans

The Contractor is required to produce the following management plans 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 has started to consider these environmental and social impacts and has the capacity within their team to plan their safeguard management strategies. CESMP coverage required for HIR works are:

- Stormwater Management Plan;
- Traffic Management Plan;
- OHS Management Plan (including UXO chance find);
- Labour Influx Management Plan (including Workers Camp and Worker code of conduct);
- Quarry Management Plan (Aggregate extraction Plan and including GAS management);
- Spill Prevention and Emergency Response Plan;
- Erosion and Sediment Control Plan;
- Solid Waste Management Plan;
- Emergency Contingency Plan; and,
- Site Decommissioning and Restoration Plan.

Traffic Management Plan: A traffic management plan is required to detail how the safety of the pedestrians and vehicles will be maintained throughout the duration of works. Particular attention will need to be paid to the separation of the public and heavy machinery at all times. The TMP will demonstrate how this will be achieved and will detail how the public will be informed of these measurements. Additionally, the TMP will include management of traffic including international and domestic transport of equipment and machinery.

OHS Management Plan: This plan will adhere to the supplementary management process described in Section 7 and will be written following the guidelines in SIRAP 2 LMP. The OHS Plan will form part of the CESMP but will also be considered a standalone document that will be implemented and monitored by the Contractors OHS key personnel. The OHS Management Plan will also include a chance find procedure for UXO.

Labour Influx Management Plan: The contractors will be required to provide a Worker Management Plan as part of their bids, explicitly detailing how the labor influx impacts will be minimized and/or how worker camps will be managed in compliance with the required standards. This will not only cover the physical elements, but also interactions with locals, impacts on island resources (e.g. water, waste), and potential price inflation effects. These requirements will be addressed more fully in the final ESMP for tender.

Spill Prevention and Emergency Response Plan: The Contractor will have a Spill Prevention and Emergency Response Plan in place to account for all potential instances. The plan will be developed to ensure that all fuels and lubricants used during the construction phase in machinery, equipment, generators are contained, collected, treated, and disposed of. The plan will (i) identify areas that are

sensitive to spills and releases of hazardous materials; (ii) outline responsibilities for managing spills, releases, and other pollution incidents, including reporting and alerting mechanisms to ensure any spillage is reported promptly to the relevant parties; (iii) Include provision of specialized oil spill response equipment; (iv) include regular training schedules and simulated spill incident and response exercise for response personnel in spill alert and reporting procedures, the deployment of spill control equipment, and the emergency care/treatment of people or wildlife impacted by the spill, and; (v) measures for clean-up and restoration of the environment following any accidents.

Erosion and Sediment Control Plan (ESCP): An ESCP is required to be prepared for all areas prior to use or disturbance including auxiliary areas under the control of the contractor such as stockpile and storage areas, access and haulage tracks, temporary waterway crossing, borrow areas, compound areas, and material processing areas. Clearing and grubbing (or 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. Each ESCP shall clearly detail the Erosion and Sediment Control Plan, and shall be prepared and, update the area and work that it is valid for. It is acceptable to have a primary 'over-arching' ESCP supplemented by numerous progressive ESCP on a project.

The Contractor shall be responsible for the design, installation, and maintenance of Erosion and Sediment Control for the temporary works of the project with the following principles:

- Erosion and sediment controls are integrated with construction planning;
- Effective and flexible erosion and sediment control plans are developed based on soil, weather;
- Construction conditions and the receiving environment;
- The extent and duration of soil exposure is minimised;
- Water movement through the Site is controlled - in particular, clean water is diverted around the site;
- Soil erosion is minimised;
- Disturbed areas are promptly stabilised;
- Sediment retention on Site is maximised;
- Controls are maintained in proper working order at all times, and,
- The Site is monitored, and erosion and sediment control practices adjusted to maintain the required performance standard.

Solid Waste Management Plan: The SWMP guidelines in Appendix E provide the governing principles for solid waste management and disposal for the SIRAP2 MUA Project. It provides the minimum standards for each waste stream and gives the Contractor guidance on how to implement waste separation, storage, and disposal. The guidelines also set the content for the SWMP, and it is a requirement of the Contractor to provide all the required content as a minimum.

Emergency Contingency Plan: This plan will detail the Contractors processes for dealing with emergencies including but not limited to medical, injury, social conflict, extreme rain events, storm events, severe earthquake, or tsunami. The plan will cover measures to protect and manage staff as well as measures to protect and manage the project and environment. Training on this plan will be described along with communication methods (posters, etc.) and the roles and responsibilities of the Contractors team.

Site Decommissioning and Restoration Plan: The Contractor is required to provide a Site Decommissioning and Restoration Plan as part of the CESMP to indicate the timeframes of decommissioning, the process of removing all project equipment and materials, the likely sites which

will need restoration and the methods of planned restoration to the 'same or better' standard as before works commenced, taking into account all requirements of this ESMP. The plan will also clearly describe the roles and responsibilities.

8.2.2 CESMP Preparation

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 with at least 10 years of 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.

Site Decommissioning and Restoration Plan: The Contractor is required to provide a Site Decommissioning and Restoration Plan as part of the CESMP to indicate the timeframes of decommissioning, the process of removing all project equipment and materials, the likely sites which will need restoration and the methods of planned restoration to the 'same or better' standard as before works commenced, taking into account all requirements of this ESMP. The plan will also clearly describe the roles and responsibilities.

CESMP Compliance: Identify the internal procedure that the Contractor will follow when a noncompliance has been identified during the daily monitoring. The procedure will include notification responsibilities, rectification timeframe, and reporting obligations. The procedure will also cover the process the Contractor will follow when non-compliances are reported by the Supervision Engineer. The procedure will also identify how the Contractor will action 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 specifically 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 must provide all sub-plans required in the ESMP as annexes to the CESMP.

8.3 Institutional Capacity

8.3.1 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.

8.3.2 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.

8.3.3 Civil Works

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

It is the responsibility of the Contractor 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.

8.3.4 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.

8.4 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.

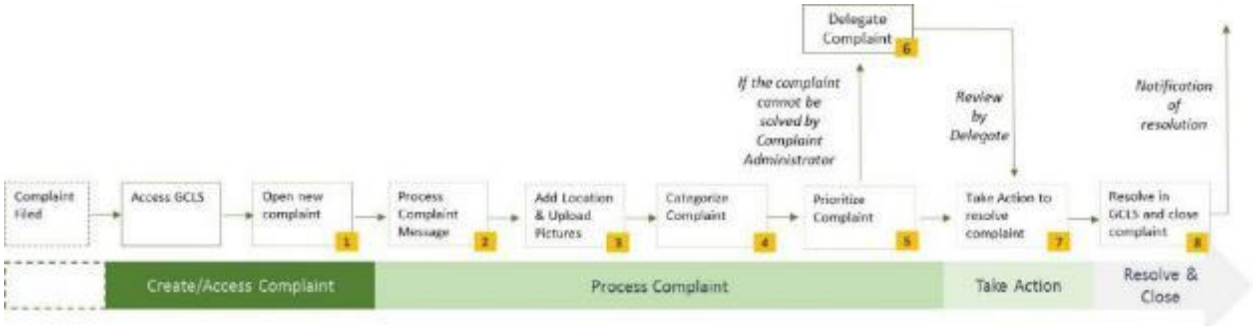
Complaints: Minor concerns or complaints that are given verbally to the Contractor or Supervision Engineer on site, the process would commence with an attempt to sort out the problem directly at the subproject level between the Contractor and the concerned individual or community.

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 Contractors Site Office are to be forwarded to the Contractors community liaison personnel and entered into the complaints register that is maintained by the Contractor and kept at the site. Details recorded will include date, name, contact address and reason 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 the person who is responsible for the decision and dated.

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 or Supervision Engineer toward 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 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 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 costs.

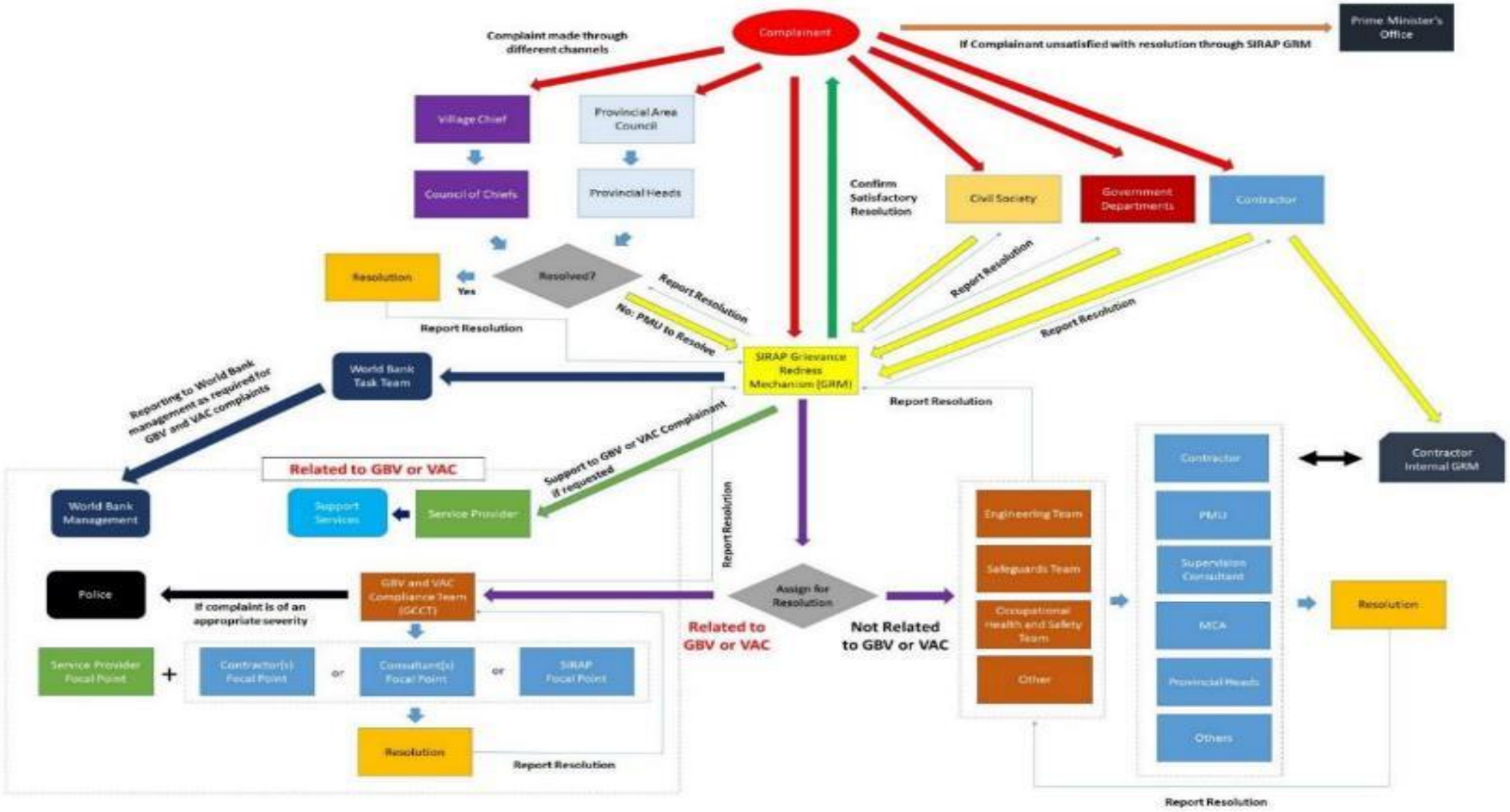
GCT: The SIRAP2 Code of Conduct and Action Plan for the Prevention of GBV, Human Trafficking and CAE detail the specific GRM processes and responsibilities. The project shall establish a 'GBV Compliance Team' (GCT). The GCT will include, as appropriate to the project, at least four representatives as follows: the SIRAP2 PST National Safeguards Specialist, an appropriate Contractors 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 36: Flow chart for grievance management under SIRAP



8.5 Supplementary Management Processes

8.5.1 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)[30] 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 Noro Roads improvement 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.

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 (with support from NSS) enters negotiations with the landowners for access to materials.

[30] Ministry of Infrastructure Development Safeguards Procedures Manual

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

Land Acquisition: There will be no permanent land acquisition or resettlement for the Noro Roads improvement works.

8.5.2 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
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 will develop a OHS Management Plan for the road works to establish and maintain a safe working environment, including that workplaces, machinery, equipment and processes under their control are safe and without risk to health, including by use of appropriate measures relating to chemical, physical and biological substances and agents.

The Contractor 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 will train the workers on OHS requirements.

The Contractor shall ensure that all workers on the site have appropriate PPE of an appropriate standard including: (i) impact resistant safety eyewear; (ii) safety footwear with steel toe, sole and heel; (iii) high visibility clothing; (iv) long sleeves and long pants suitable for operating environment; (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 underground environments. For site visitors, the above equipment will be supplied as appropriate based on assessed risks and depending on number of visitors and where they will be on site

The LMP contains the requirement for a Workers GRM. The Contractor 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 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 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.

The Contractors OHS Management Plan should incorporate all aspects of the project including the airport site, quarries, and transport routes.

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

The Contractor shall 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 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 health and safety management system)
- Number of lost time injuries (an injury or illness certified by a medical practitioner that results in absence of work for at least one scheduled day or shift, following the day or shift when the accident occurred)
- Number of medical treatment injuries (the management and care of a patient to effect medical treatment or combat disease and disorder excluding: (i) visits solely for the purposes of observation or counseling; (ii) diagnostic procedures (e.g. x-rays, blood tests); or, (iii) first aid treatments as described below)
- Number of first aid injuries (minor treatments administered by a nurse or a trained first aid attendant)
- Number of recordable strikes of services (contact with an above ground or below ground service resulting in damage or potential damage to the service)
- Lost Time Injury Frequency Rate (the number of allowed lost time injury and illness claims per 100 full-time equivalent workers for the injury year specified)
- Total Recorded Frequency Rate (the number of recordable injuries [recordable/lost time/fatal] per 100 full-time equivalent workers for the injury year specified)

The monthly reports shall also include:

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

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

As required in the bid documents, the Contractor 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 D). The Codes of Conduct aim to prevent and/or mitigate the risks of GBV, Human Trafficking, and SEA within the context of the Noro works. These Codes of Conduct are to be adopted by the civil works contractors, as well as supervision consultants.

The Supervision Engineer shall provide to the Contractor a list of approved service providers which shall include recognized NGOs and others for conducting training on GBV. From the provided list, the Contractor 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 from the provisional sum provided in the bill-of-quantity.

8.5.4 Covid-19

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 global pandemic protection measures and will follow the WBG guidance note on Covid-19[31] 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.

8.6 Contractors ESMP

The Contractor is required to prepare a Contractor'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 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 Contractors guiding document for the implementation of this ESMP. During 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 methodology and plan for adhering to their safeguard requirements. Additionally, the CESMP will detail how the Contractor plans to resource their team with personnel and financial resources as per the Contract. The Contractor 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 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 Contractors 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 Specialists. Once the CESMP has been approved, it will be disclosed by the Contractor 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 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

[31] http://pubdocs.worldbank.org/en/324831581700447537/COVID-19-Guidance-for-Contractors-CO-Final.pdf

the project's area of influence. The area of influence includes the active worksites, laydown areas, construction camps, haul routes, production facilities (concrete, asphalt etc.) 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 subcontractors. 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 contractors, subcontractors 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 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 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 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 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 will follow when non-compliances are reported by the Supervision Engineer. Procedure will also identify how the Contractor will action 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 is 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 has started to consider these environmental and social impacts and has the capacity within their team to plan their safeguard management strategies.

9 Compliance and Monitoring Plan

9.1 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 in 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 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.

9.2 Monitoring Plan Reporting

Throughout the construction period, the Supervision Engineer will include results of their weekly ESMP monitoring, along with the details of any incidents report by the Contractor, 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 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 Contractors, and any other information which may at a later date be of assistance in resolving queries which may arise concerning execution of works. This day-to-day contract diary is to include any environmental events that may arise in the course of the day, including incidents and response, complaints and inspections completed.

There are monitoring requirements associated with this ESMP that are applicable once SIRAP2 has concluded, and normal airport 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.

9.3 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 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. Staffs 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 and asphalt plan	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. Bitumen is stored on the hardstand at laydown sites. 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 to organize prior to export from country of origin.	Supervision Engineer
CONSTRUCTION PHASE				
General	CESMP documents	The contractor 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	Construction Contractors 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 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. All waste is disposed of offshore Contaminants of Concern (COC) documentation in place and reviewed.	Documentation viewed prior to construction works starting Weekly as applicable to schedule of works.	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
		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 permitted 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 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. Inspections to ensure waste streams are sorted for re-use, recycling or waste to landfill.	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
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

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
		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
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 is responsible for replacing or fixing the equipment to the satisfaction of Supervision Engineer. Bitumen and asphalt processes plants to be located away from closest communities	Weekly inspection as applicable to schedule of works and on receipt of any complaints.	Supervision Engineer

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
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.	Weekly inspection as applicable to the schedule of works and on receipt of any complaints.	Supervision Engineer
Storage of fuel, oil, hazardous substances etc.	At work sites and construction camp. Contractors 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

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
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
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
Asphalt Plants (if used)	Noro	The asphalt plant in the laydown area measured 150m to the waterways and 300m from the resident settlements	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

PARAMETER TO MONITOR	LOCATION	MONITORING	FREQUENCY	MONITORING RESPONSIBILITY
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
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 road infrastructure for functionality.	After completion of construction	MID

10 Contingency Planning

The SIRAP2 Project Manager is the contact person for emergency situations that may arise during the implementation of the SIRAP2 works at Noro. The SIRAP2 PM will be available 24 hours a day, seven days a week, and has 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 Contractors 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 staff should undergo training/induction to the plan.

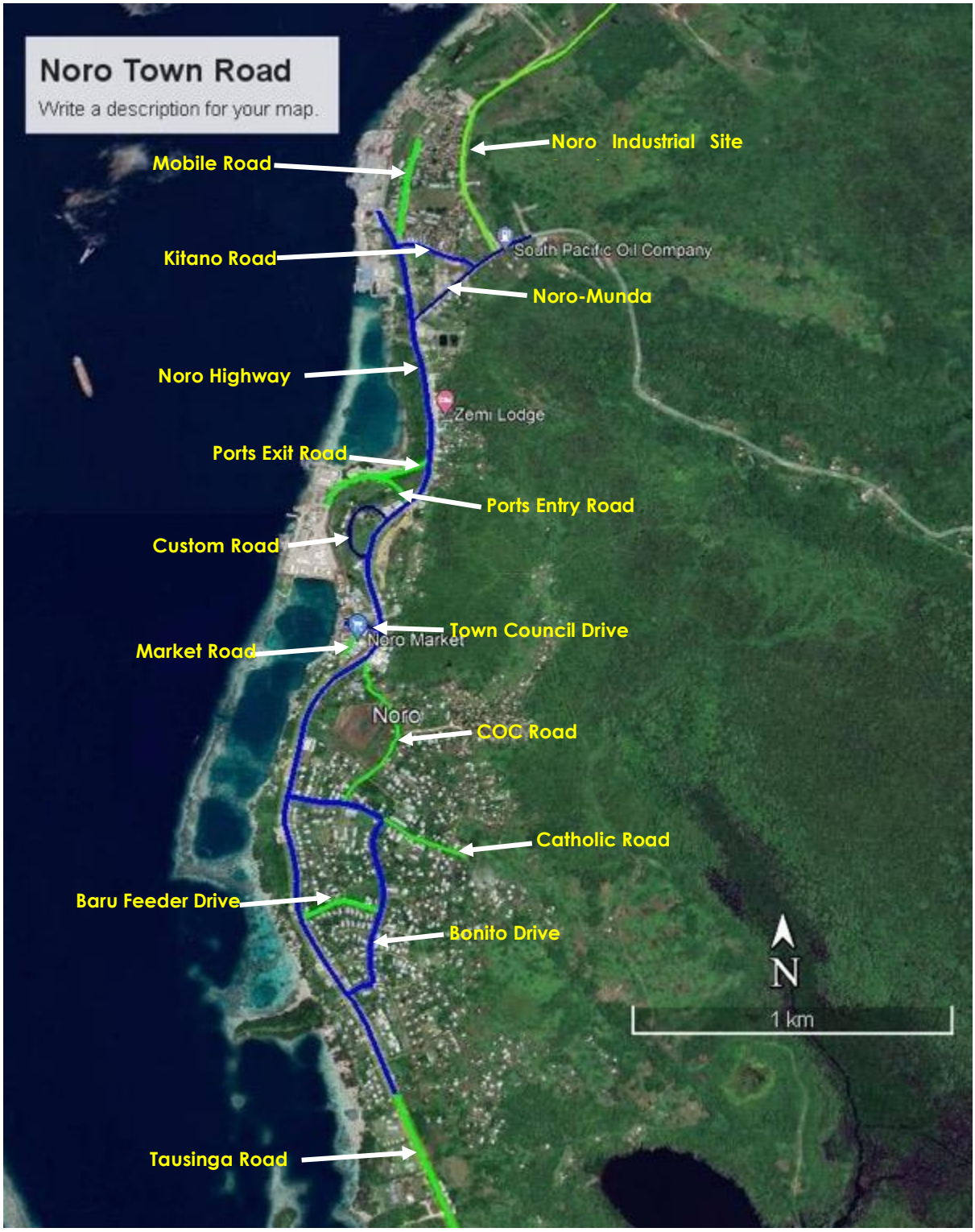
While it is preferable to undertake construction works outside of the wet season, it is probable that storm and heavy rain events will occur while works are underway.

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

In general, the Contractors will:

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

Appendix A: Noro Roads Improvement Map

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Noro Market
Noro Lodge
Zemi Lodge
Google Earth
Image © 2022 Maxar Technologies


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Noro Highway
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Soltuna Shop
Squatters
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Noro Highway
Noro Industrial Road
Noro-Munda Road
Ports
Ports Exit Road
Ports Entry Road
Noro Highway
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A NFD Executive Accommodation
Road
C United Church
United Church
NFD Executive Accommodation


Town Council Road
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? ?Noro Market
? ?Rom Depo
BSP Bank
Feature 1
Feature 2
Fish Market Site
Rom Depo
Mechanical Shed
BSP Bank
Noro Council Office
Fish Market Site
Noro Market
M&K budget accomodation
Road side Tents
FA Store Noro
Shop
Dickson Technology

Appendix B: Consultation Participants List

NORO TOWN ROAD KEY STAKEHOLDERS
HONIARA COMMUNITY CONSULTATION MEETING

Venue: NORO TOWN COUNCIL MEETING ROOM

Date: 19/08/21

No.	Name	Name of Village	Title	Contact	Gende
	TONY SARICH	NFD	SHORE SERVICES MANAGER	7494110	
	Frank Wickham	"	Managing Directo	7495819	
	JOHN PINA	NTC	V/President Noro Town Cou	7825011	
	GAVIN TOTA	NTC	Clerk, NTC	7303518	
	ROBERT TAPOLO	NORO	Church PASTOR.	7824616	
	Bernard SAMSON VATU	Police	TRAFFIC officer	7988934	
	Nelson HU BOSO	NFD	COMMUNITY RELATIONS MAN	7470026	
	ROSE A TAU	NTC	COUNCILLOR	7208547	
	Alex. Pasama	NTC	Treasurer, NTC	7497604	
	FRED. NAPHTALAS	NTC	PRESIDENT	7466439	
	Adrian Wickham	Solevia	CHAIRMAN	7496443	
	Lemu Darcy	"	P.A.O	7470069	

Noro City Council Courtesy
HONIARA COMMUNITY CONSULTATION MEETING

Venue:

Date:

No.	Name	Name of Village	Title	Contact	Gende
1	FRED. NAPHTALAS	NORO TC	PRESIDENT	7466439	
2	GAVIN TOTA	NTC	CLERK, NTC	7303518 gavintota2018@gmail.com	
3	Russell Pitabungan	NTC	Councillor - Public utilities,	8458666 pitabungan	
4	Robert Tapolo	NTC.	PASTOR.	7824-616	
5	ROSE A TAU	NTC	COUNCILLOR Clan & Family	7208547	rataurua@gmail.com

NORO TOWN ROAD KEY STAKEHOLDERS
HONIARA COMMUNITY CONSULTATION MEETING

Venue: NORO TOWN COUNCIL MEETING ROOM

Date: 19/08/21

No.	Name	Name of Village	Title	Contact	Gende
	ISHMAEL KUVI - SOLTUNA		- HRD/Security	- 74 00122	
	JAY P. WINTER	SOLOMON POWER		7470721	
	ERIC MAEFELO	MCLL -	LABOUR officer	7843020	
	GRMS. Sio	SIPA -	NORO	7647148	
	RONALD IVUPITU	SI PORTS		7499607	

Appendix C: CESMP Monitoring Checklist

Noro Roads Weekly CESMP INSPECTION

PROJECT:	Solomon Islands Roads and Aviation Project	**IMPLEMENTING AGENCY:**	MCA
DATE:		**CONTRACTOR:**	
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 is undertaking weekly monitoring and reporting using a monitoring form approved by Supervision Engineer in CESMP.							

CESMP Items (edit as necessary based on approved CESMP)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
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							
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							

CESMP Items (edit as necessary based on approved CESMP)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
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 - Bitumen and asphalt plant emissions move away from nearby communities							
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							

CESMP Items (edit as necessary based on approved CESMP)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
OHS - 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							
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							

CESMP Items (edit as necessary based on approved CESMP)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
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							

CESMP Items (edit as necessary based on approved CESMP)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
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							
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 D: 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[32]

Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced Labour Influx[33]
World Bank Good Note Practice: Environment & Social Framework for IPF Operations, Road Safety[34]

WB General ESH Guidelines[35]

WB EHS Guidelines for Construction Materials Extraction[36]WB EHS Guidelines for Ports, Harbours and Terminals (for construction works along waterways)[37]

WB COVID-19 Guidance [38]

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

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

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

[35] https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_policy_ehs-general

[36] 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

[37] 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

[38] http://pubdocs.worldbank.org/en/324831581700447537/COVID-19-Guidance-for-Contractors-CO-Final.pdf

Solid Waste Management Plan Guidelines

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

1. Maximise the amount of material which is sent for reuse, recycling or reprocessing
2. Minimise the amount of material sent to the landfill
3. Satisfies the national waste management legislations
4. Statisfies 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 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 contractors 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 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 minimise risks to the health, safety and welfare of workers, contractors, visitors, and anyone else who may be affected by the operations. The H&S Plan must be prepared in accordance with the World Bank's 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.

Consequence		Likelihood				
		1	**2**	**3**	**4**	**5**
		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.

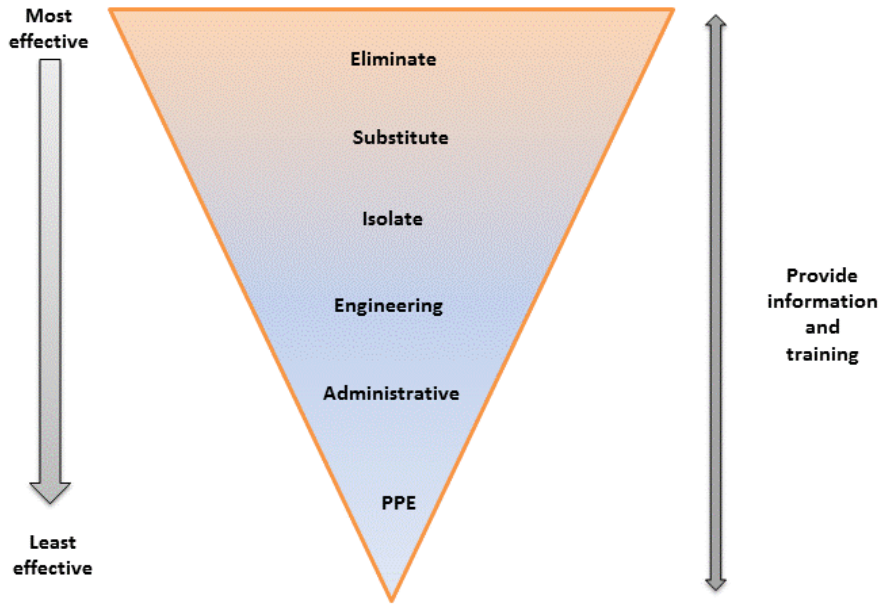
1. **Eliminate** – if it is possible, the hazard should be removed completely. For example, get rid of dangerous machines.

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

The Contractor 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 New Georgia Island or Honiara.

WORKERS CAMP FACILITIES

All facilities in the Workers Camp must be complaint 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 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 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 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. No currently existing freshwater resources in Noro will be used for the workers or for worker camp operations.

- The Contractor 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 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 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 a list of approved service providers which shall include recognized NGOs and others for conducting this training.

- The Contractor 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 workers camp.

- The Contractor 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 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 metres 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 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 metres 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 shall nominate an experienced quarry manager in the submission of the tender for the works. The quarry manager shall have a recognised current “A” grade quarry manager’s surface certificate and a recognised current quarry shot firer’s certificate.

In the submission of the quarry manager’s credentials with the tender documents, the contractor 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 methods 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 minimise 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 metres. Any higher batter in overburden shall have an intermediate bench at least 3.5 metres 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 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 minimised. All haul roads shall be regularly dampened by spray bars fitted to water tankers or similar systems in order to minimise dust generation by traffic movements. Crushers, screens and stockpiles shall be dampened by appropriate water sprays to minimise 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. Prioritised 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 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 E: 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-contractors 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 subcontractors—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.
    - **Contractors Environmental and Social Management Plan (C-ESMP):** the plan prepared by the contractor 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:** 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-contractors hired to undertake activities on behalf of the contractor.
    - **Manager:** is any individual offering labor to the contractor 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 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 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:

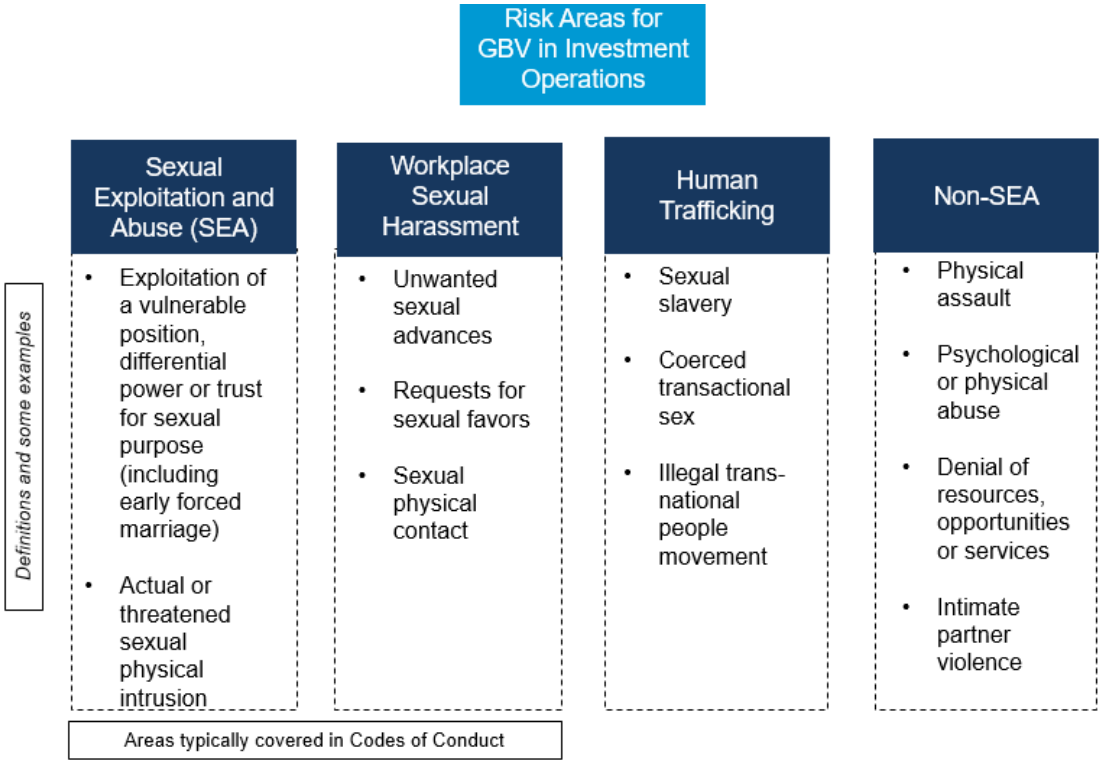


Figure 1: Types of GBV that may be Exacerbated by Investment Operations

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.

- **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 contractors, 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-contractors, 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-contractors and suppliers, without exception:

General

1. The company—and therefore all employees, associates, representatives, sub-contractors and suppliers—commits to complying with all relevant national laws, rules and regulations.
2. The company commits to full implementing its 'Contractors 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, color, 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 behavior are prohibited among all company employees, associates, and its representatives, including sub-contractors 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,7 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-contractors and suppliers.
9. The company will ensure that all persons 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 favors, and other verbal or physical conduct of a sexual nature) are acts of GBV and are prohibited.
16. Sexual favors (e.g. making promises of favorable treatment such as promotions, threats of unfavorable treatment such as losing a job, payments in kind or in cash dependent on sexual acts) and any form of humiliating, degrading or exploitative behavior 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[39] 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-contractors 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.
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'.

[39] **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.

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-contractors, 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 also to sign the Individual Code of Conduct. This commits them to supporting the implementation of the Contractor'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, 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-contractors 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 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 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[40] 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

[40] **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.

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.
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[41], 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 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.

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-contractors 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.

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

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

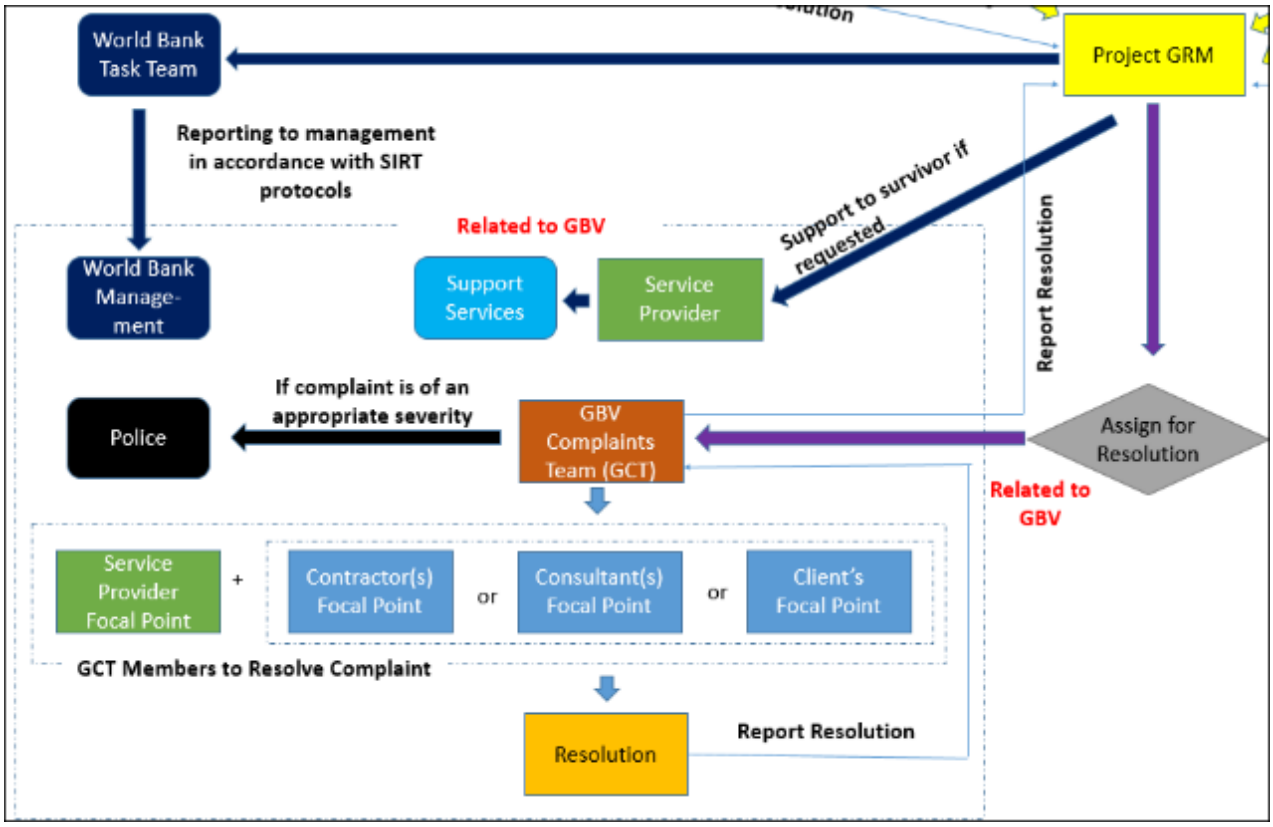
Each project needs to put in place appropriate protocols for addressing GBV complaints. The protocols will vary between projects based on local circumstances, but there are key principles which are required in all projects.

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[42].

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 staff will be for the contractor 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 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 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.

[42] 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.

Response Protocol

The GCT will be responsible for developing a written response[43] 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 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

[43] 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[44]:

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 accommodation among other services that may be needed.

[44] 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.

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.

Appendix F: Community Consultations Meeting Minutes

MEETING MINUTES

Noro Roads Project Community Consultations & Awareness

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	6th September 2023	**Time:**	2pm
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Noro Town Council
		Road Section	Noro Roads

1. Project Team		
Name	**Position**	**Organisation**
Salome Pita	Environment and Social Safeguards	Project Support Team (PST)
Edwin Koveke	Environment and Social Safeguards	Project Support Team (PST)
Ben Maenu	Engineer- Western Region	Ministry of Infrastructure & Development (MID)
Rowena Toito'ona-Totori	Civil Engineer	Egis-Azimuth
Wendy Mark	Environment and Social Safeguards	Egis-Azimuth
Jaysie Boaple	Environment and Social Safeguards	Egis-Azimuth

2. Agenda *(add rows as necessary)*		
Topic	**Presenter**	**Organisation**
Introducing the Project Team	Salome Pita	SIRAP-PST
Project Background	Salome Pita	SIRAP-PST
Design Presentation (including Safeguards)	Jaysie Boape Rowena Toito'ona Wendy Mark	Egis- Azimuth

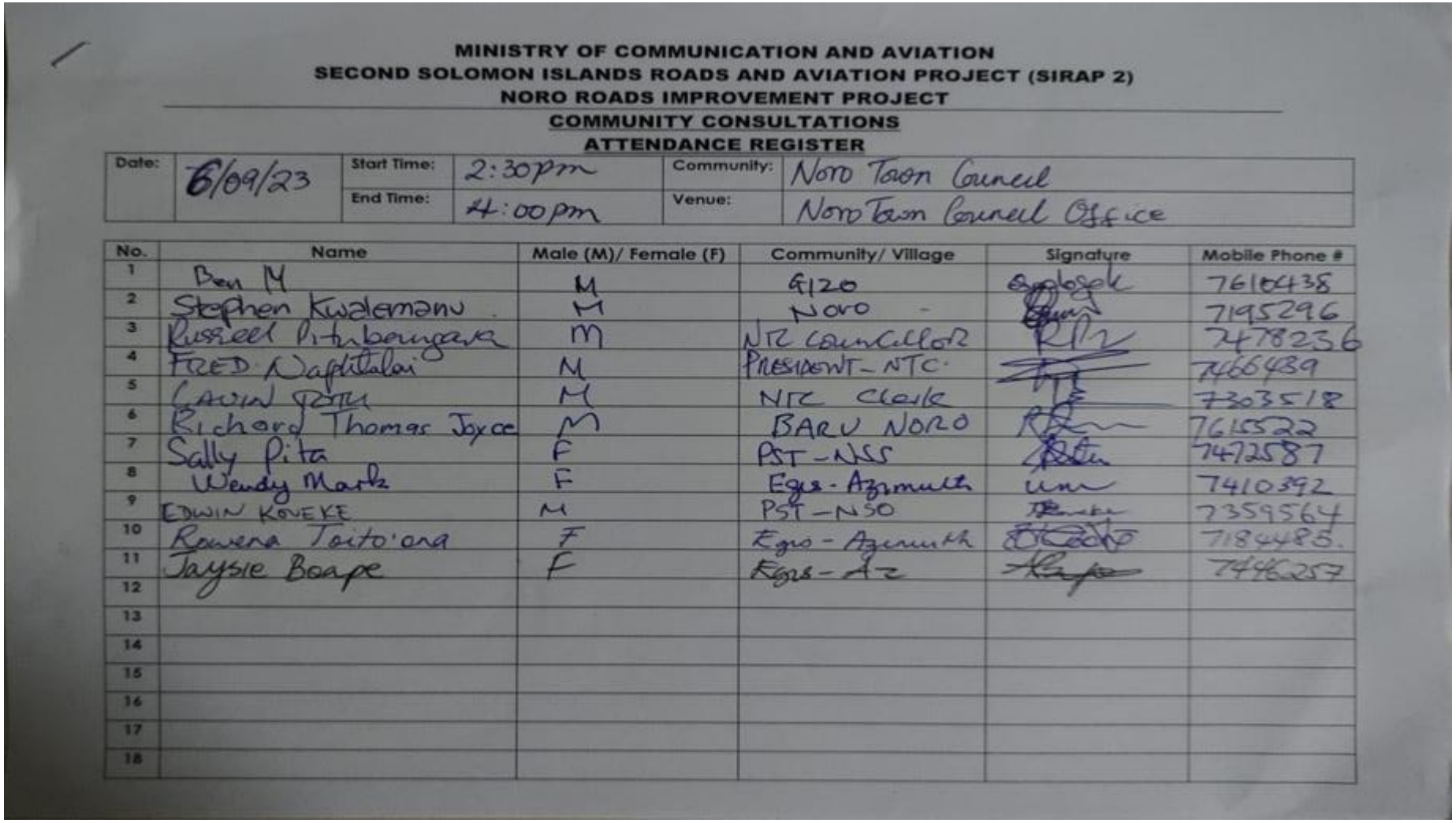
3. Meeting Notes/Questions/Comments	Responses
Is there a provision in the design for footpath? A lot of the people in Noro are using the road and not using vehicles. This should be considered in the design.	PST/Egis-Azimuth Team, thank the Council Staff for raising this question. Footpath was supposed to be part of this, however, taking into account land availability, we cannot accommodate some road furnitures. This is because certain road

3. Meeting Notes/Questions/Comments	Responses
	sections are too rigid which some has houses along road side so there is limited land space available to construct footpaths, road shoulders or even drainage systems or other road furnitures.
There is an exisiting feeder road section after the Bonito Loop Rd, passing through the cops land and SDA kindy, is badly deteriorated and no Taxi's want to pass through this section and is affecting the service. Can this road section be included in the improvement?	PST/Egis-Azimuth Team Currently, in the project only 9.9km of roads for Noro will be upgraded which include re-sealing and sealing of unsealsed sections. For now the road sections identified now will be upgraded.
If possible, when contractor equipments are on site, can they assist gravel this road sections? The community will also assist put gravel.	Egis/Azimuth Team responded, when the contractor is on site, community leader can negotiate the arrangement with the contractor.
The land officer have highlighted that, developments/houses are encroaching beyond their land boundaries therefore, affecting road developments or expansions.	
Most feeder roads in Noro are badly deteriorated and needed improvements. Maybe MID and Noro council will work closely to look for other ways/projects to improve the feeder road sections. The council have plans to also have an additional road connecting to the internation airport.	
Can there be guard rails at a section at Kesoko, right hand side interms of road safety? Once roads are improved, vehicle drivers will be speeding.	PST/Egis-Azimuth Team responded that guard rails are part of the road furnitures and this is included in the design.
Will there be road humps installed at sections of the road?	PST/Egis-Azimuth Team responded that road humps are not included in the design but may be included after road safety audits. Road humps will require proper lightening etc to ensure no accidents occur.
At the road section at Muziboko, there is a drainage out let proposed for that location in the design. How far will the drainage go? During rain, this area is often flooded as there is also swamp at the back of area. If there will be drainage outlet to this section, collecting all storm water along the roads,and having its outlet at this section this will generally affect those living around the area. Currently, the people also experience flooding already when the swamp gets filled up during rainny periodsd and having a drain outlet will worsen the current situation. This is also similar to the Bonito Loop Road.	Egis-Azimuth Team responded that, currently team is awaiting for the results from topo survey as this provides elevations and contour levels which will assist in identifying where drainage and outlets will be located. Most main Noro highway is situated on the ridge and therefore, storm water drains either inland into the creeks or towards the sea. So when it drains inland, it filled the creek/swamp then flooded the residential areas at the low area. The Muziboko area is naturally a low point and that is why it collects all runoffs from the current road.
Drainage system is very important aspect of the road and there are exiting drainage in Noro, but people construct buildings over the drains.	Egis-Azimuth Team responded that this should never be allowed. But if nothing is done about it, or if Noro Council is not taking action then

3. Meeting Notes/Questions/Comments	Responses
	that is why people continue to build on the drains. There are locations perfect for drainage systems but the issue is most of this locations have structures built along side so there is not enough space to have drainage system.
As part of road safety, will speed limits be installed? This is important for the main roads as many vehicles are speeding along the high way including inside the residential areas	For Primary, secondary and tertiary roads, speed limits are considered.
Noro Town Council are very happy to have the Noro Road Improvement and are willing to work in colaboration with the Police and also MID interms of ensuring road safety.	Any speeding should be reported to Police for actioning,as they are the law enforcers, therefore Noro Council to work together will Noro Police to ensure effective road safety measures are in place.
PST/Egis-Azimuth Team informed the Noro Council that the team will conduct its community consultation at each road sections. The same power point presentation shared with the council will also be shared with the communities. Another round of consultation will be conducted once the designs are finalised.	
When addressing the communities it is good to clarify to the communities the timeframe of the project implementation, inform communities and landowners that this project eventuate and will benefit everyone. There are people who doubted this project and its good, to inform the community people that this project is happening.	
When addressing the communities, do inform them the importance of road safety and safety features.	PST/Egis-Azimuth Team responded, in regards to speed humps, MID does not encourage speed humps along the highway. MID strongly discourages illegal speed humps in the communities. In residential area, it is okay but will need to apply to MID for approval before installing speed humps.
PST/Egis-Azimuth Team asked the council if the Noro Road is a gazetted road?	The Noro Council responded that the Noro road is gazetted. It has been used more than 20 years and is a public road. The road is also constructed on Crown land.
The council is pleased to inform the team that a Local Planning Scheme for Noro has been developed and is funded by ADB. This plan is neccesary to address the the uncontrolled development in Noro and there is a board responsible to oversee this. The council wants to see Noro Town as one of the best town.	
What is the implementation timeframe?	PST/Egis-Azimuth Team informed the council that project implementation will be around 1st quarter next year. After tender, then evaluation

3. Meeting Notes/Questions/Comments	Responses
	before project award. Before mobilisation, the team will visit again with the contracor to introduce the contractor to the council and also the communities.
Other key stakeholders (Solomon Water, Solomon Telekom, SolTuna and Solomon Ports etc) who were not consulted during this time , will later be consulted at later date.	The council strongly agreed, they are important to be consulted as they have utilities along the road or also major users of the roads.
The Council asked about the duration of the design phase?	PST/Egis-Azimuth Team redsponded that, that the designs should be finalised by October for MID/PST review and will be submitted to WB for approval before tendering. Implementation will be next year.
The Noro Town Council fully supports the project and thanked the team for visiting Noro Town Council as they are the agent of the government in Western Province. The council is looking forward to the Project Implementation and anticipate more of this visits and looking forward to working together.	PST/Egis-Azimuth and MID Team thanked Noro Council Team for availability for meeting and also for clearing some doubts and also looking forward to more future collaboration with the council.

Attendance Register



MINISTRY OF COMMUNICATION AND AVIATION
SECOND SOLOMON ISLANDS ROADS AND AVIATION PROJECT (SIRAP 2)
NORO ROADS IMPROVEMENT PROJECT
COMMUNITY CONSULTATIONS
ATTENDANCE REGISTER

Date:	6/09/23	Start Time:	2:30pm	Community:	Noro Town Council
		End Time:	4:00pm	Venue:	Noro Town Council Office

No.	Name	Male (M)/ Female (F)	Community/ Village	Signature	Mobile Phone #
1	Ben M	M	6120		7610438
2	Stephen Kwalemanu	M	Noro		7195296
3	Russell Pitabaungara	M	NTC Councillor		7478236
4	FRED Nagitalai	M	PRESIDENT - NTC		7466489
5	GAVIN [illegible]	M	NTC Clerk		7303518
6	Richard Thomas Joyce	M	BARU NORO		7615522
7	Sally Pita	F	PST - NSS		7472587
8	Wendy Mark	F	Egis - Azimuth		7410392
9	EDWIN KOVEKE	M	PST - NSO		7359564
10	Rowena Toito'ona	F	Egis - Azimuth		7184485
11	Jaysie Boape	F	Egis - Az		7446257
12					
13					
14					
15					
16					
17					
18					

MEETING MINUTES

Noro Roads Project Community Consultations & Awareness

Meeting Name:	Community Consultation Meeting		
Date of Meeting:	7th September 2023	**Time:**	11am
Meeting Purpose:	Introductory Visit and Project Awareness (Design)	**Community/Village**	Noro CHS
		Road Section	Noro Roads

1. Project Team		
Name	**Position**	**Organization**
Salome Pita	Environment and Social Safeguards	Project Support Team (PST)
Edwin Koveke	Environment and Social Safeguards	Project Support Team (PST)
Ben Maenu	Engineer- Western Region	Ministry of Infrastructure & Development (MID)
Rowena Toito'ona-Totori	Civil Engineer	Egis-Azimuth
Wendy Mark	Environment and Social Safeguards	Egis-Azimuth
Jaysie Boaple	Environment and Social Safeguards	Egis-Azimuth

2. Agenda *(add rows as necessary)*		
Topic	**Presenter**	**Organisation**
Introducing the Project Team	Salome Pita	SIRAP-PST
Project Background	Salome Pita	SIRAP-PST
Design Presentation Session 1* Road Safety Awareness and Construction Impacts (environment & Social Impacts) for Students Session 2* Design Presentation to parents, teachers and residents surrounding Noro School.	Jaysie Boape Rowena Toito'ona Wendy Mark	Egis- Azimuth

3. Meeting Notes/Questions/Comments	Responses
Can the project assist in gravelling the feeder roads in Baru? The roads are within town boundary as well.	Egis-Azimuth team responded, only roads that are identified in the project are the roads that will be constructed. Any road apart from the identified ones are outside of the scope. PST further clarifies that for now, WB will only fund the 9.9km of road identified, 4.4km of earth roads will be sealed and 5.5km of roads will be re-sealed. MID confirmed to the people that only 9.9km of roads will be funded by donor, however other road sections not included, MID will look for other available funds to improve those road sections.
Regarding the design, will there be a pedestrian walk/cross and speed hump for identified for the school? Even now, with graveled road, vehicles are speeding and safety of our students are important. The Baru feeder road is quite wide, can the design accommodate footpath, so that students can walk on footpath to school. Can this be considered in the design?	Egis-Azimuth team responded - In the design, this always considered. The team further stressed that, MID has a Road Act, and in the Act it clearly states the road width, is 30m in total- that is 15m from centreline. For Noro School crossing/pedestrian walk, the project will take note of that, however for footpath, it will depend on land availability. Most of the ROW have already have strutures built on it . PST further added that the design will be on the exiting road alignment. With regard to the question on safety of students, it is paramount and pedestrian walk for students is often considered. However, road hamps are often discourage as it will also cause accidents if no proper lightings.
There is a steep area at the Kesoko area (facing the seaside), will the design accommodate barriers as for safety purpose? Also, there are also sections of the road being narrow and an example is a chinese building constructed very close to a feeder road (before Noro Lodge) and is causing obstruction to drivers view and also is causing safety issue. What can be done about with this?	PST responded that, Noro Council have also highlighted this. Regarding the steep area, the engineers during their data collection should have already identified the sections requiring guard rails etc. With regard to buildings, in the Road Act, 30m is road corridor, that is 15m from centreline on both side. Looking at the Noro Road, most structures are encroachig into the ROW and if the Road Act is to be applied for this instance, most the people will be affected and in the project if more than 10% of the people are affected, it will trigger what the donor called Resettlement Plan, which will accommodate the Affected People. And with this, it is the responsibility of the government to address.

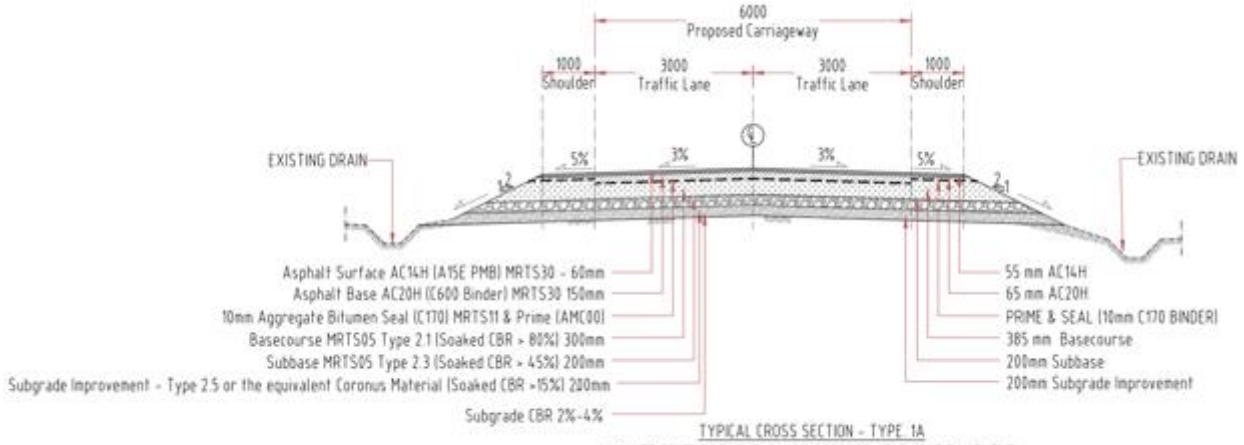
3. Meeting Notes/Questions/Comments	Responses
	Therefore, for this project, the road improvement will be on the existing aligment only.

Appendix G: Proposed Pavement Types – Cross Section and Description

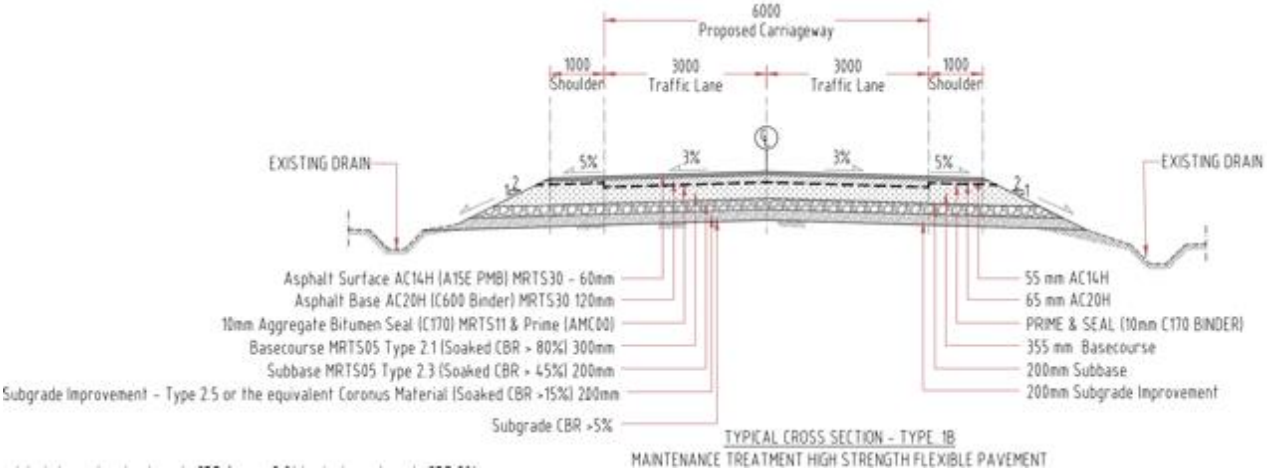
Type 1 - Flexible Pavement - Type 1A and 1B for different CBR Zone

Pavement Layer	Material Type	CBR 2% - 4%	CBR > 5%
Pavement Type		**Type 1A**	**Type 1B**
Surfacing	Asphalt AC14H (A15E)	60mm	60mm
Asphalt Base	AC20H (C600)	150mm	120mm
Seal	Place 10 mm aggregate bitumen Seal (C170)	Yes	Yes
Prime	Prime (AMC00)	Yes	Yes
Basecourse	MRTS05 Type 2.1 (Soaked CBR > 80%)	300mm	300mm
Subbase	Sub-Type 2.3 (Soaked CBR > 45%)	200mm	200mm
Subgrade Improvement	Type 2.5 or the equivalent Coronus Material (Soaked CBR ≥15%)	200mm	-

Note:
(1) Subgrade improvement to bring natural subgrade CBR from < 3 % to design subgrade CBR 3%.
(2) Drainage layer MRTS04 Type 2.4 material shall be provided for pavements cutting into existing rock
(3) Geotextile to be included in design sections with soaked CBR < 2 %



TYPICAL CROSS SECTION - TYPE 1A
MAINTENANCE TREATMENT HIGH STRENGTH FLEXIBLE PAVEMENT
SCALE 1 : 100

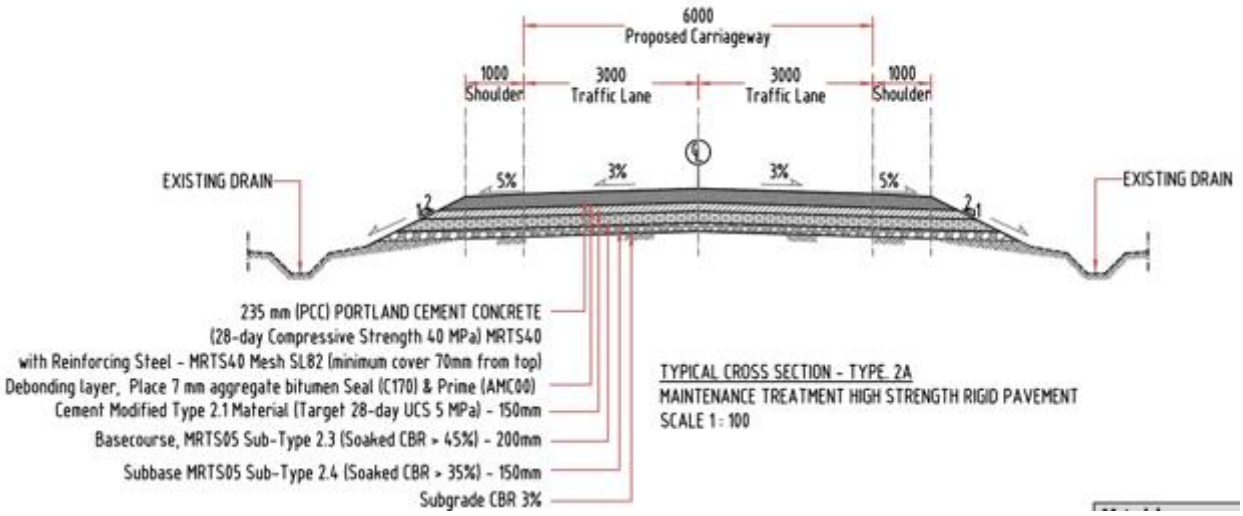


TYPICAL CROSS SECTION - TYPE 1B
MAINTENANCE TREATMENT HIGH STRENGTH FLEXIBLE PAVEMENT

Type 2 - Rigid Pavement - Type 2 for different CBR Zone

Pavement Layer	Material Type	CBR 3%	CBR > 5%
Pavement Type		**Type 2**	**Type 2**
Surfacing	Portland Cement Concrete (PCC) (Target 28-day Compressive Strength 40 MPa) MRTS40	235mm	235mm
Reinforcing Steel	MRTS40	Mesh SL82 (minimum cover 70mm from top)	Mesh SL82 (minimum cover 70mm from top)
Debonding layer	Place 7 mm aggregate bitumen Seal (C170)	Yes	Yes
Prime	Prime (AMC00)	Yes	Yes
Cement Modified Layer	Cement Modified Type 2.1 Material (Target 28-day UCS 5 MPa)	150mm	150mm
Basecourse	MRTS05 Sub-Type 2.3 (Soaked CBR > 45%)	200mm	200mm
Subbase	MRTS05 Sub-Type 2.4 (Soaked CBR > 35%)	150mm	150mm (Drainage layer for Port Entry Road with shallow rock at TP 27)

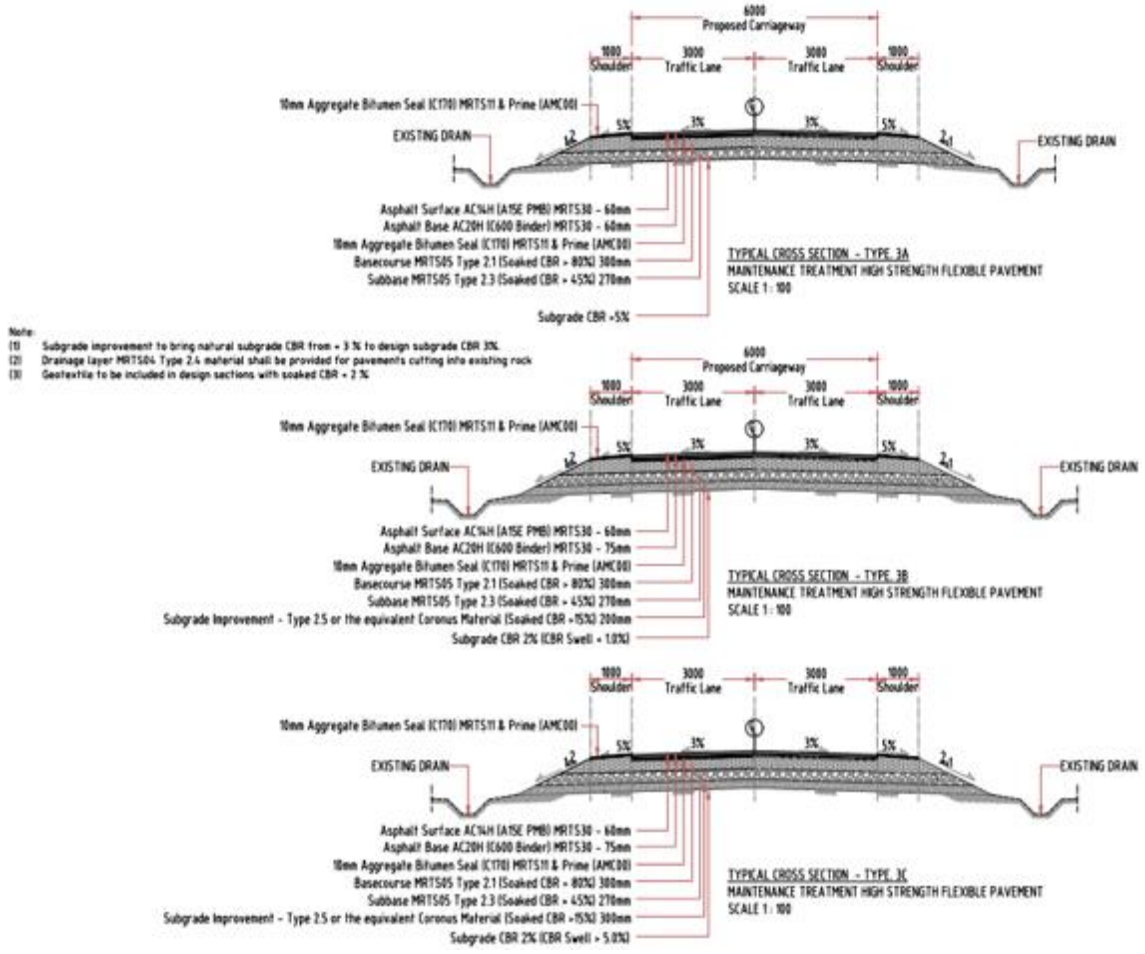
Note:
(1) Subgrade improvement to bring natural subgrade CBR from < 3 % to design subgrade CBR 3%.
(2) Drainage layer MRTS04 Type 2.4 material shall be provided for pavements cutting into existing rock
(3) Geotextile to be included in design sections with soaked CBR < 2 %

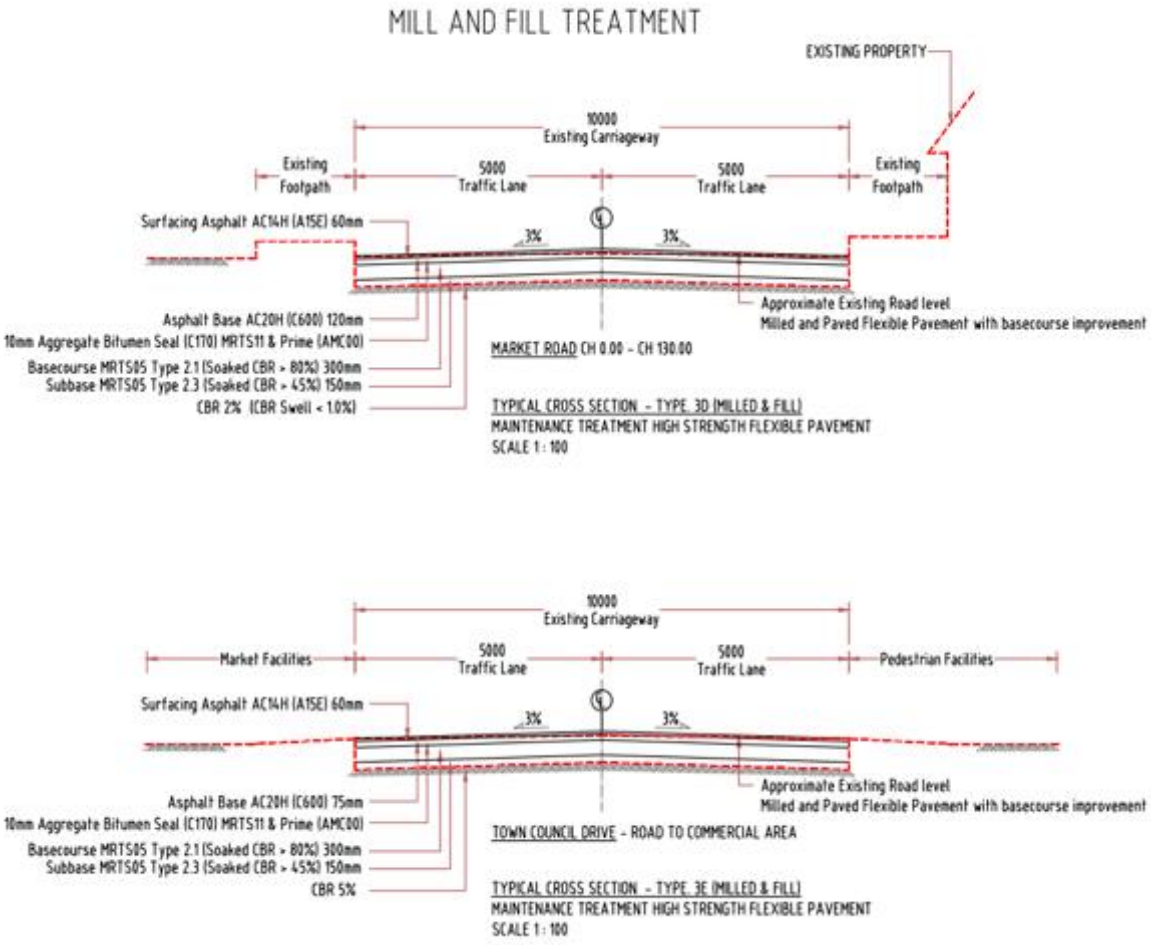


Type 3 - Flexible Pavement - Type 3A, 3B, 3C & Milled and Fill for different CBR Zone

Pavement Layer	**Material Type**	**CBR > 5%**	**CBR 2% (CBR Swell < 1.0%)**	**CBR 2% (CBR Swell > 5%)**	**CBR 2% (CBR Swell < 1.0%)**	**CBR > 5%**
Pavement Type		**Type 3A**	**Type 3B**	**Type 3C**	**Type 3D Milled & Fill**	**Type 3E Milled & Fill**
Surfacing	Asphalt AC14H (A15E)	60 mm	60 mm	60 mm	60 mm	60 mm
Asphalt Base	AC20H (C600)	60 mm	75 mm	75 mm	120 mm	75 mm
Seal	Place 10 mm aggregate bitumen Seal (C170)	Yes	Yes	Yes	Yes	Yes
Prime	Prime (AMC00)	Yes	Yes	Yes	Yes	Yes
Basecourse	MRTS05 Type 2.1 (Soaked CBR > 80%)	300 mm	300 mm	300 mm	300 mm	300mm
Subbase	MRTS05 Type 2.3 (Soaked CBR > 45%)	275mm	275 mm	275 mm	150 mm	150 mm
Subgrade Improvement	Type 2.5 or the equivalent Coronus Material (Soaked CBR ≥15%)	-	200 mm	300 mm	-	-

Note:
(1) Subgrade improvement to bring natural subgrade CBR from < 3 % to design subgrade CBR 3%.
(2) Drainage layer MRTS04 Type 2.4 material shall be provided for pavements cutting into existing rock
(3) Geotextile to be included in design sections with soaked CBR < 2 %

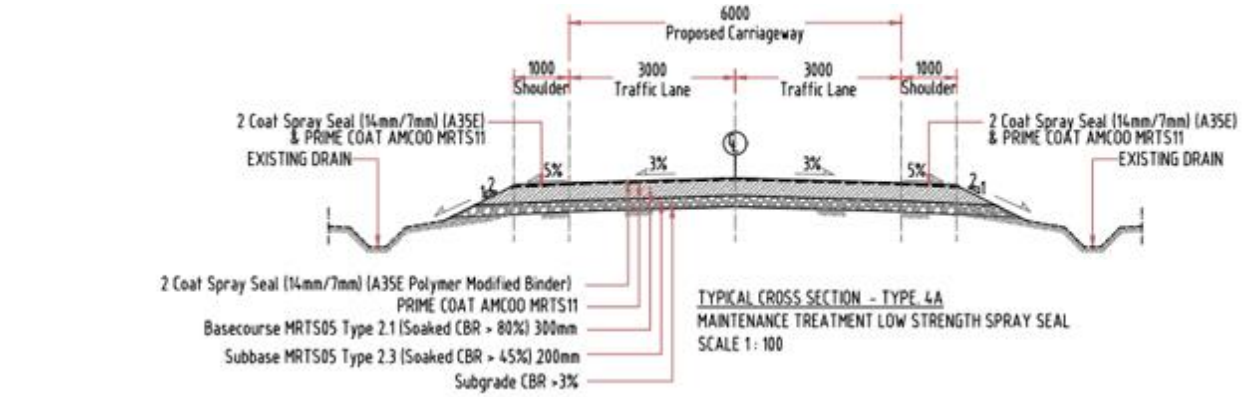


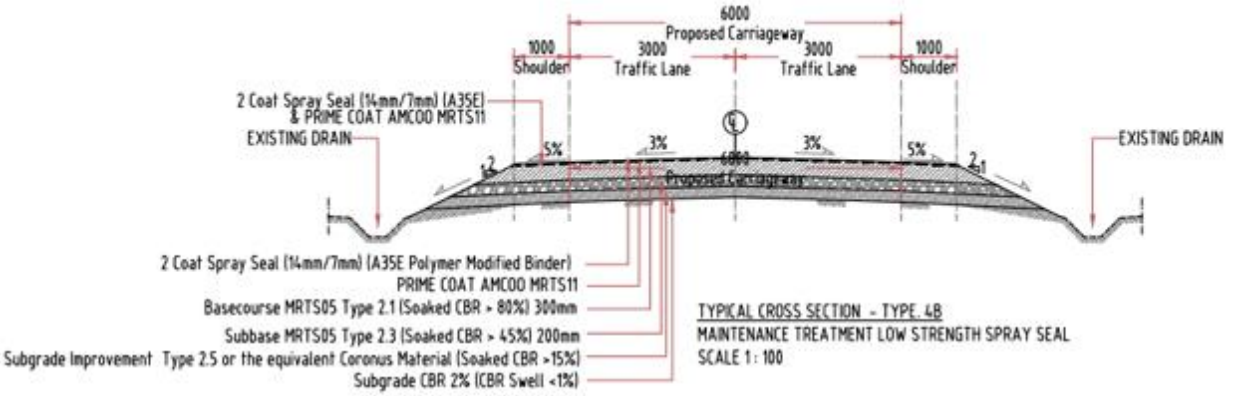

MILL AND FILL TREATMENT
EXISTING PROPERTY
10000
Existing Carriageway
Existing
Footpath
5000
Traffic Lane
5000
Traffic Lane
Existing
Footpath
Surfacing Asphalt AC14H (A15E) 60mm
3%
3%
Approximate Existing Road level
Milled and Paved Flexible Pavement with basecourse improvement
Asphalt Base AC20H (C600) 120mm
10mm Aggregate Bitumen Seal (C170) MRTS11 & Prime (AMC00)
Basecourse MRTS05 Type 2.1 (Soaked CBR > 80%) 300mm
Subbase MRTS05 Type 2.3 (Soaked CBR > 45%) 150mm
CBR 2% (CBR Swell < 1.0%)
MARKET ROAD CH 0.00 - CH 130.00
TYPICAL CROSS SECTION - TYPE 3D (MILLED & FILL)
MAINTENANCE TREATMENT HIGH STRENGTH FLEXIBLE PAVEMENT
SCALE 1 : 100
10000
Existing Carriageway
Market Facilities
5000
Traffic Lane
5000
Traffic Lane
Pedestrian Facilities
Surfacing Asphalt AC14H (A15E) 60mm
3%
3%
Approximate Existing Road level
Milled and Paved Flexible Pavement with basecourse improvement
Asphalt Base AC20H (C600) 75mm
10mm Aggregate Bitumen Seal (C170) MRTS11 & Prime (AMC00)
Basecourse MRTS05 Type 2.1 (Soaked CBR > 80%) 300mm
Subbase MRTS05 Type 2.3 (Soaked CBR > 45%) 150mm
CBR 5%
TOWN COUNCIL DRIVE - ROAD TO COMMERCIAL AREA
TYPICAL CROSS SECTION - TYPE 3E (MILLED & FILL)
MAINTENANCE TREATMENT HIGH STRENGTH FLEXIBLE PAVEMENT
SCALE 1 : 100

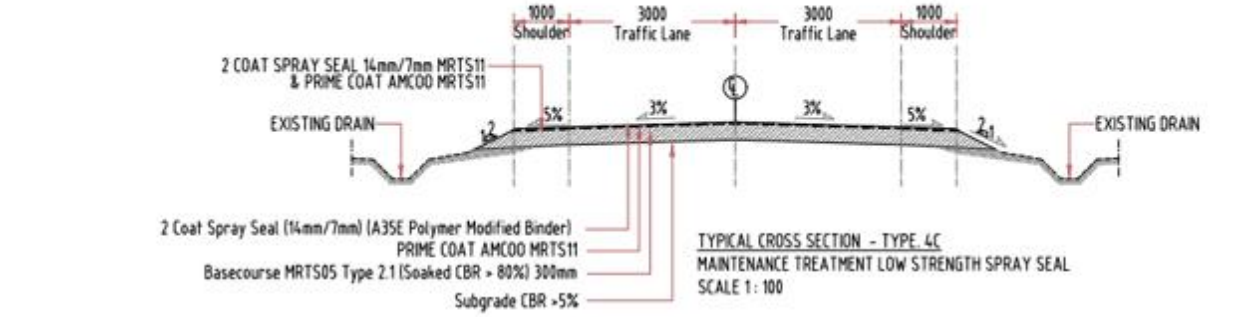
Type 4 - Flexible Pavement - Type 4A & 4B for different CBR Zone

Pavement Layer	Material Type	CBR > 3%	CBR 2% (CBR Swell < 1.0%)	CBR > 5%
Pavement Type		**Type 4A**	**Type 4B**	**Type 4C**
Surfacing	2 Coast Spray Seal (14mm/ 7mm) (A35E Polymer Modified Binder)	14mm/7mm Seal	14 mm/7 mm Seal	14mm/7mm Seal
Prime	Prime (AMC00)	Yes	Yes	Yes
Basecourse	MRTS05 Type 2.1 (Soaked CBR > 80%)	300 mm	300 mm	300 mm
Subbase	MRTS05 Type 2.3 (Soaked CBR > 45%)	200 mm	200 mm	-
Subgrade Improvement	Type 2.5 or the equivalent Coronus Material (Soaked CBR ≥15%)	-	200 mm	-

Note:
(1) Subgrade improvement to bring natural subgrade CBR from < 3 % to design subgrade CBR 3%.
(2) Drainage layer MRTS04 Type 2.4 material shall be provided for pavements cutting into existing rock
(3) Geotextile to be included in design sections with soaked CBR < 2 %


6000
Proposed Carriageway
1000
Shoulder
3000
Traffic Lane
3000
Traffic Lane
1000
Shoulder
2 Coat Spray Seal (14mm/7mm) (A35E)
& PRIME COAT AMCOO MRTS11
EXISTING DRAIN
5%
3%
3%
5%
2 Coat Spray Seal (14mm/7mm) (A35E)
& PRIME COAT AMCOO MRTS11
EXISTING DRAIN
2 Coat Spray Seal (14mm/7mm) (A35E Polymer Modified Binder)
PRIME COAT AMCOO MRTS11
Basecourse MRTS05 Type 2.1 (Soaked CBR > 80%) 300mm
Subbase MRTS05 Type 2.3 (Soaked CBR > 45%) 200mm
Subgrade CBR >3%
TYPICAL CROSS SECTION - TYPE 4A
MAINTENANCE TREATMENT LOW STRENGTH SPRAY SEAL
SCALE 1 : 100


6000
Proposed Carriageway
1000
Shoulder
3000
Traffic Lane
3000
Traffic Lane
1000
Shoulder
2 Coat Spray Seal (14mm/7mm) (A35E)
& PRIME COAT AMCOO MRTS11
EXISTING DRAIN
5%
3%
3%
5%
EXISTING DRAIN
2 Coat Spray Seal (14mm/7mm) (A35E Polymer Modified Binder)
PRIME COAT AMCOO MRTS11
Basecourse MRTS05 Type 2.1 (Soaked CBR > 80%) 300mm
Subbase MRTS05 Type 2.3 (Soaked CBR > 45%) 200mm
Subgrade Improvement Type 2.5 or the equivalent Coronus Material (Soaked CBR >15%)
Subgrade CBR 2% (CBR Swell <1%)
TYPICAL CROSS SECTION - TYPE 4B
MAINTENANCE TREATMENT LOW STRENGTH SPRAY SEAL
SCALE 1 : 100


1000
Shoulder
3000
Traffic Lane
3000
Traffic Lane
1000
Shoulder
2 COAT SPRAY SEAL 14mm/7mm MRTS11
& PRIME COAT AMCOO MRTS11
EXISTING DRAIN
5%
3%
3%
5%
EXISTING DRAIN
2 Coat Spray Seal (14mm/7mm) (A35E Polymer Modified Binder)
PRIME COAT AMCOO MRTS11
Basecourse MRTS05 Type 2.1 (Soaked CBR > 80%) 300mm
Subgrade CBR >5%
TYPICAL CROSS SECTION - TYPE 4C
MAINTENANCE TREATMENT LOW STRENGTH SPRAY SEAL
SCALE 1 : 100