Environmental and Social Impact Assessment

Noro Clinic Medical Waste Incinerator

October 2023

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Contents

Abbreviations

CAUSE	Community Access to Urban Services Enhancement project
COC	Code of Conduct
CoESP	Code of Environmental and Social Practice
COVID-19	Coronavirus disease
ECD	Environment Conservation Division
EHD	Environmental Health Division
EIS	Environmental Impact Statement
E&S	Environmental and Social
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESHS	Environmental, Social and Health and Safety
ESHS&CE	Environmental, Social Health Safety & Community Engagement
ESIA	Environmental and Social Impact Assessment
ESS	Environmental and Social Standards
FTE	Fixed-Term Estate
GBV	Gender Based Violence
HGH	Helena Goldie Hospital
IPCG	Infection Prevention and Control Guidelines
IPPF	Indigenous Peoples Planning Framework
km	Kilometer
LMP	Labor Management Procedure
L	Liter
m	Meter
MECDM	Ministry of Environment, Climate Change, Disaster Management and Meteorology.
MHMS	Ministry of Health and Medical Services
NRH	National Referral Hospital
NTC	Noro Town Council
PE	Perpetual Estate
PER	Public Environment Report
PMU	Subproject Management Unit
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
SIG	Solomon Islands Government
SPC	South Pacific Commission
SPREP	Secretariat of the Pacific Regional Environment Programmed
SPRP	Strategic Preparedness and Response Program
UCSI	United Church in Solomon Islands
VAC	Violence Against Children
WB	World Bank
WHO	World Health Organization
WPG	Western Provincial Government

Executive Summary

This document is the Environmental and Social Impact Assessment (ESIA) for the installation of a Medical Waste Incinerator unit (hereafter referred to as the Subproject) at Noro Clinic and meets the environmental and social (E&S) impact assessment requirements of the World Bank and the Solomon's Island Government (SIG). The Subproject involves installation of an energy efficient medical waste incinerator and provision of waste management training for Noro Clinic Health Workers. This ESIA documents the potential impacts and risks associated with the Subproject and strategies to mitigate impacts and risks. It is guided by international best practice and national environmental frameworks, policies and regulations.

Whilst the Subproject is expected to have a positive impact on waste management capacity and infection control, potential short-term impacts and risk on the surrounding biophysical and social environment are identified, including: removal of vegetation and food plants, soil erosion, noise and vibration, odor/smoke, dust, occupational accidents and/or injuries, inadequate design, sub-standard/inappropriate materials, and community grievances. The primary tools for managing the impacts and risks, identified in this ESIA, during the Subproject construction are a Code of Environmental and Social Practice (CoESP) prepared by the contractor(s) and the Project Management Unit (PMU) and the development of operating procedures for its operation.

The Ministry of Health and Medical Services (MHMS) has established a PMU to implement and supervise the Subproject. The World Bank through its Fast Track Covid-19 Response Program is funding the Subproject.

1. Introduction

The Solomon Islands Government (SIG) has received a total of US$13 million in funding from the World Bank through IDA credits (US$2.5 million), grants (US$7.5 million), and the Health Emergency Preparedness Response Trust Fund (HEPRTF-US$3 million) under the Fast Track Covid-19 Response Program (FTCF). The funding covers the emergency response under the COVID-19 Strategic Preparedness and Response Program (SPRP). The Project aims to prevent, detect and respond to the threat posed by COVID-19 and to strengthen national systems for public health preparedness in the Solomon Islands (SI).

The installation of the medical waste incinerator forms part of the ERP and for the purpose of this ESIA, this undertaking is referred to as the Subproject. The Subproject falls under the ERP component 2 (b) enhancing health care waste management. The Subproject aims to improve health care waste management through financing an energy efficient medical waste incinerator including training in health care waste management and enhancing infection control for Noro Clinic.

The WB has required an ESIA for the approval of the Subproject. Potential E&S impacts and risks include removal of vegetation and food plants, soil erosion, noise and vibration, odor/smoke/fume, dust, occupational accidents and/or injuries, inadequate design and materials, failure to implement the Environment and Social Commitment Plan (ESCP) and, community grievances.

Noro clinic is categorized as an Area Health Centre (AHC) that is overseen by the Western Provincial Health Authority (WPHA) under the MHMS. The clinic has direct link with Helena Goldie Hospital (HGH) in Munda that is owned by the United Church Mission. Noro clinic provides valuable health services for Noro township and nearby villages/ settlements. In addition to identifying the potential E&S impacts, risks and mitigation strategies, this document also provides the Subproject description, baseline information, regulatory frameworks and a Code of Environmental and Social Practice (CoESP) template to guide contractors.

2. Subproject Location

Noro is 331km away from Honiara and is separated by sea with many islands in between (**Figure 2.1**).

The incinerator site is located behind the Noro Clinic buildings (**Figure 2.2**). The Noro clinic serves Noro township with a population of approximately 3,365 (2009 census) and nearby villages and settlements outside of Noro. Noro is ranked the fourth highest in population density among the seven urban centers of the Solomon Islands.[1] Noro township is an emerging industrial center located in the Western Province that hosts two major tuna fisheries companies, the National Fisheries Development (NFD) Limited and Soltuna. The latter operates a cannery processing factory that employs 2,100 employees from around Solomon Islands, of which more than 64% are female[2]. Both NFD and Soltuna employs a total of approximately 3,000 employees[3].

Geographically, Noro township is situated on the western margin of New Georgia, the largest island that forms the Western Province. The clinic sits in an area of 8,123m² and the incinerator site is 50m from the main clinic building in a north-easterly direction. This section of Noro is at a higher elevation above sea-level behind raised limestone cliffs at the coast. Even though it is less than 400m inland, the land's natural elevation guarantees safety from sea-level rise and coastal inundation.

2.1 Site selection

The exact site to construct the incinerator was selected through combined site assessment by the ES officer and infrastructure officer of PMU through a consultation with the Noro Town Council and Clinic staffs and was based on several considerations including but not limited to the following:

- It should be located just within the clinic area that is currently fenced to avoid potential dispute or tedious land acquisition processes.
- It should be equidistance from closest buildings to reduce chances of concentrated impact.
- It should be on the vacant space behind the clinic building and to avoid obstructing future expansion of the clinic premises.
- It should be at least established on an elevated location to give maximum height for the stack as possible for maximum emission dispersion in the air and to reduce chances of low spreading emissions that has potentials to reach nearby houses and by passers.

[1] https://population-hub.com/en/sb/population-of-noro-11847.html
[2] https://www.icrw.org/wp-content/uploads/2018/12/SolTuna2.pdf
[3] https://solomons.gov.sb/key-success-of-nfd-and-soltuna-is-in-their-integration/

- The facility should be easily accessible from the clinic to ease transportation of waste and management of facility.

There are no alternative locations as the choice for the site is based on availability of suitable and accessible land for the clinic. The Project considered opting for other sites but due to the lengthy and tedious processes that would involve in terms of site identification and acquisition, the current proposal was preferred. Other options would also implicate the project's implementation timeframe.

Despite the lack of alternative sites for the incinerator around Noro, the project considered alternative spots within the proposed land, and the selected spot is the best option as it is far from the main clinic building and residential houses (outside the fence) as shown in **figure 2.3** and also a considerate choice towards future expansion of the Clinic.

The current site location for the ash-pit is right behind the incinerator for convenience of transferring ash from the incinerator. Its' size of 10.4m³ is meant to be fillable within 10 years which by then a new ash-pit should have been built beside it. The baseline rate for anticipated ash quantity that would be produced per year was obtained from NRH hospital's calculation of ash production per weekly burn cycle which stands at 20kg. In a year of 52 weeks, ash produced should be around 1,040kg which is equivalent to 1.04m³. Given that the baseline rate is from a large-scale hospital, it is anticipated that a clinic of the size of Noro would definitely produce less ash than that and should take more than 10 years to fill the ash pit. The ash pit is designed to have a sealable lid that can be opened to pour in ash after every burning cycle and closed afterwards. The pit surface is slightly raised from the ground level to avoid inundation or filled by run-offs during rainy weather. The proposed technology to be used is standard for hospital level facilities and is considered to cater for future growth and expansion of the clinic and also to mitigate potential demands from HGH hospital in Munda when their incinerator is not functioning.

With regards to sensitive receptors (**Figures 2.2 & 2.3**) the clinic area is 30m adjacent to Noro School which comprises primary and secondary classes. Private residences are scattered around the clinic area and two staff residences are within the perimeter fencing at the back of the clinic.

There are no water bodies around the site. Several swampy patches are seen in ditches and lower sections of the land mostly caused by run-off from elevated sections. The road network around the area is primarily gravel and susceptible to dust from running vehicles during dry weather.

Figure 2.1 *Map showing the location of Noro Township in western province and distance with Honiara*

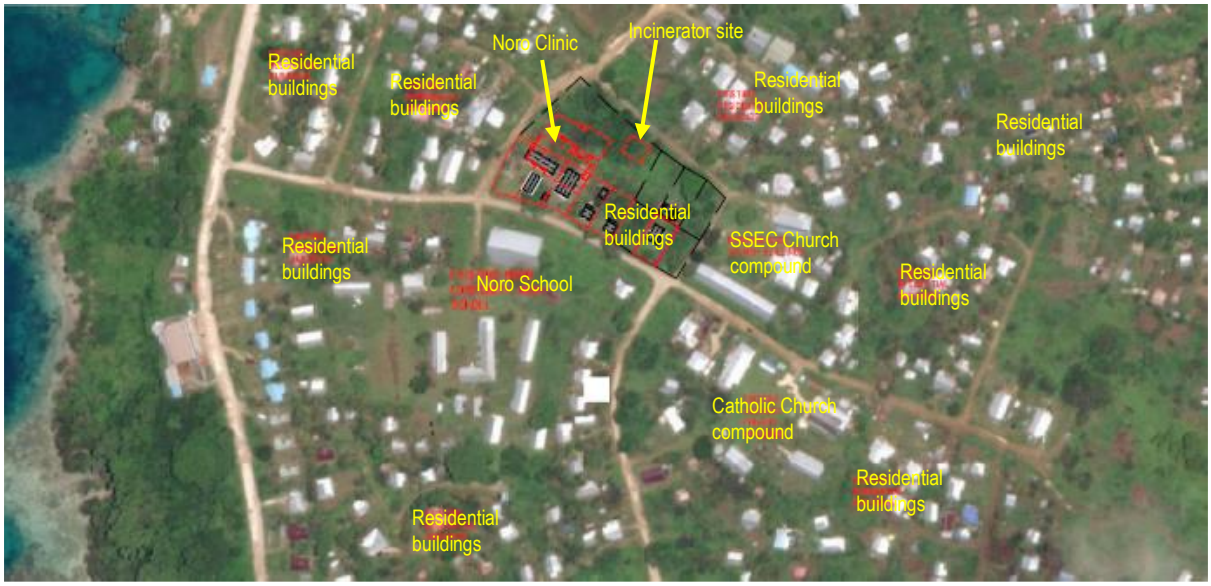


Figure 2.2 *A satellite imagery map showing aerial view of Noro clinic, incinerator site, residential buildings and school.*

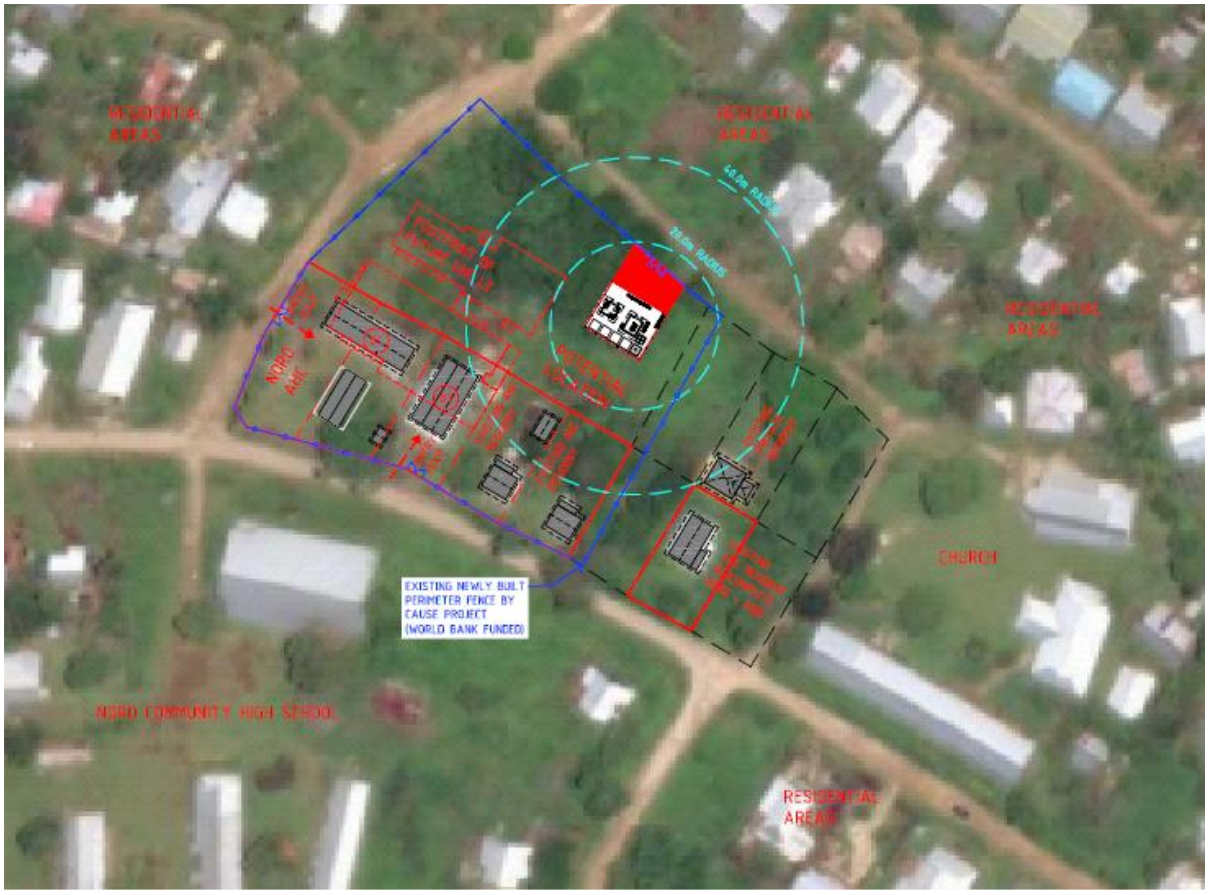


Figure 2.3 *The closest residences and the clinic are equidistant from the incinerator site by 40m.*

3. Environmental and Social Baseline

The Noro Clinic provides medical services to Noro township and nearby villages on Kohingo Island and Vonavona lagoon. According to the 2009 census report[4], Noro town alone has a total population of 3,365. This excludes population of nearby catchment villages, which if counted could possibly double the above figure. The clinic is administered by the Western Provincial Health Authority in Gizo (the provincial capital). According to Western Provincial Health Authority's administrational arrangement, Noro clinic is mandated a supervisory role and given administrative responsibility to oversee clinics in zone three catchment which consist of 13 political Wards with total population of 38,678 according to 2009 national Census report[5].

[4] Solomon islands National Census report,2009, Census population by Wards.
[5] Ibid

3.1 Environmental Baseline

The proposed site for the incinerator is selected on the premise of being vacant land situated within the demarcated land boundary of the clinic and is equidistant (40m) radius from the closest sensitive receptors; which include private residences, clinic staff residences and the clinic itself. The bare land is a brownfield site which predominantly of grass and wild food crops such as bananas, cassava and taro (**Figure 3.1**). These plants are common property that clinic staffs residing at the staff residences use when required, otherwise, in most cases untended and ignored for the most. Clinic staff at the residences grow small backyard vegetable plots close to their residences in an area of approximately 9-12m² each (**Figure 3.2**).

Figure 3.1: *Proposed site for the incinerator having vegetation coverage comprising tall grasses, wild bananas, cassava and taro*

The proposed site for the incinerator is on the northern perimeter, is flat and slightly elevated (1.5m) above the parallel feeder road running SE to NW and 12m distance from this road. There are no visible water bodies close to the site even to a distance of more than 200m. The coast is 352m west of the site in straight line measurement on a map, and a large swamp area is at 429m east of the site. Relatively drier western margins of the swamp have now been settled by residences.

Figure 3.2: *Typical staff backyard vegetable garden*

The roads running close to the site are not sealed and are prone to generating dust whenever vehicles are passing during extremely hot and dry weather. During wet weather the road often turns muddy with water pools due to poor drainage.

The soil type at the incinerator site is red clay with poor drainage and becomes sticky and slippery during wet weather. If left bare or cleared of vegetation or soil cover, it develops cracks or minor crevices as it dries up during prolonged hot sunny weather.

3.1.1 Waste Management

There has not been an incinerator for the clinic since its establishment. The current practice of waste disposal involves open burning, where clinical wastes are dumped in a landfill and burnt in a pit approximately 17m behind the clinic. Being the only option at their disposal, though was practically less effective as a lot of raw wastes were usually half burnt and are left at the mercy of feral dogs and cats spreading the litter around the area and as well flies infesting and breeding in them. As a pit is completely filled, they would dig another and repeat the process. At the time of assessment, the pit currently used has been completely filled yet was not covered with soil, instead they kept burning wastes at the

surface. **Figure 3.3** below shows the waste dump and **Figure 3.4** shows the distance of the waste dump to the clinic.

Figure 3.3: *Completely filled waste pit being used for burning wastes on the surface*

Figure 3.4: *Distance of the waste dump to the clinic is approximately 17m*

The Noro town council has a land-fill site that receives all kinds of solid wastes ranging from industries to residential households. The land-fill is managed by the Noro town

council with minimal capacity hence the current less organized and poor state of the dumpsite and the absence of a rubbish collection system. Waste is usually transported individually by producers to the dumpsite. Disadvantaged households who have no access to vehicle manage their own wastes at home. The Noro clinic staff residences manage their household wastes by dumping and burning in the backyard. **Figure 3.5** below shows waste burning at the back of clinic staff residences.

Figure 3.5: *Clinic staff residence's household waste management practice.*

The proposed incinerator is the first of its kind for Noro clinic would. Since Noro clinic is a small establishment compared to HGH, the incinerator will also be available to HGH whenever theirs is faulty or need a high temperature of combustion for specific waste type as the model for Noro is more efficient.

3.1.2 Waste Audit for Noro Clinic

A waste audit was conducted at the clinic and involves inspection of bin contents, discussions with staffs on waste generations in terms of quantity and type, disposal and handling practices and overall management. Results of waste audits are displayed in the below table:

Table 3.1 *Results of waste audit undertaken on 21st April 2023 at Noro Clinic*

Waste receptacles	Description
 Labor Ward bin	Bin size: 10L bucket bin Fullness: 15% full Contents: 90% clinical waste (wool) 10% human waste (blood and tissue) Estimated weekly volumes: • 20L per week • 18L clinical waste • 2L human blood and tissues
 Storage point bin	Bin size: 20L grey plastic bin Fullness: 90% full Contents: 30% clinical waste 30% general waste (soft plastics) 40% paper cardboard Estimated weekly volumes: • 16L per week • 4.8L clinical waste • 4.8L general waste • 6.4L paper/cardboard
   Sharps bins at Storage point	Bin size: 11 x 5L bin = 55L (sharps bin) – 3 months old (12 wks). Fullness: 10 x sharps bin are 100% full, 1 x sharps bin is 60% full. Contents: 80% sharps 10% clinical waste 5% paper cardboard 5% general waste (soft plastics) Part of the contents are seen on top of the bins. Estimated weekly volumes: • 4.2L per week • 3.4L sharps • 0.4L clinical waste • 0.2L general waste (mostly soft plastics) • 0.2L paper/cardboard

Waste receptacles	Description
 Storage point bin	Bin size: 40L bin Fullness: 90% Contents: 80% clinical waste 10% General waste (mostly soft plastics) 10% Paper cardboard Estimated weekly volumes: • 20L/ week • 16L clinical waste • 2L general waste • 2L paper/cardboard
 Storage point bin	Bin size: 60L Fullness: 95% Contents: 80% general waste (soft plastics) 10% paper cardboard 7% Organic Waste 3% metal waste Estimated weekly volumes: • 30L per week • 24L general waste (mostly soft plastics) • 4.5L paper/cardboard • 4.2L organic waste • 1.8L metal waste

***Table 3.2** Calculated waste volume*

Waste type	Weekly total
Clinical waste (potentially infectious clinical waste)	39.2L
General Waste (mostly soft plastics)	31L
Metals	1.8L
Food organics	4.2L
Paper/Cardboard	13.1L
Human blood and tissues	2L
Sharps	3.4L
Total Waste/week	**94.7**

3.1.3 Waste Audit summary for Noro Clinic

The following summarizes the current waste management practices at Noro Clinic:

- Each of the four rooms of the clinic has a small bin each of around 10-15L. The bins are emptied into larger bins at the storage point by the end of each day. An additional 10L bin in the labor room for collecting birthing waste is directly emptied at the waste dump daily. Bins at the storage point are emptied at the waste dump when completely filled and space is required for the transfer of more wastes in bins from the rooms.
- Bins at the storage point were inspected and displayed in **Table 3.1** above.
- The clinic's dump site is a land-fill located 30m away from the waste storage point.
- The waste storage point is at the former covid-19 triage tent which has been converted to a temporary outpatient clinic and vaccine administration center.
- Waste is partially segregated at storage point in categories of general waste (plastic wrappings, metal cans and organic waste), clinical waste and sharps. At the dumpsite all wastes are mixed up and disposed in the same location and manner.
- The 10L waste bin in the labor room fills up in two (2) birthing and the clinic records on average at least four (4) deliveries per week. Other clinical wastes of the labor unit are placed in a separate 10L bin and emptied daily in the storage point bins.
- The clinic has less bins than needed, hence complemented with empty cartoons such as empty sharps pack which are re-used to store used sharps as displayed in **Table 3.1** photos.

- The clinic has a cleaner who is dedicated to providing waste management service. Unfortunately, there has not been any IPC training for the staff.

Although the MHMS has established an Infection Prevention Control (IPC) Guidelines, the Clinic continues to face challenges due to lack of proper equipment and lack of training to improve capacity of waste handlers in waste management. The Clinic doesn't have an incinerator to burn waste. During assessment, burning of waste on the ground was seen to be practiced.

3.1.4 Air Quality

The clinic continues to practice burning of waste in the pit to reduce their size and odor. This usually produce huge amounts of smoke and odor. Burning of rubbish is a normal household practice in Noro that the clinic's residences also regularly practice within the Clinic's area. While air quality is an important factor to monitor for the sake of the incinerator's efficiency, accessibility to appropriate equipment remains a challenge. The environmental Health Unit in Honiara has not fixed or procured replacement for its out of service air quality monitoring devices. It is assumed that with a carefully designed incinerator such as the proposed CA03 will be a considerable improvement on the current practice of inefficient open pit burning.

The monitoring of noise, odor and dust during construction is not considered feasible based on equipment availability, budget and capacity of contractors and the level of risk. However, contractors' conditions prescribed in the CoESP that seeks for a considerate and sensible approach by potential contractors is the best way possible for the project to ensure risks are minimal.

3.2 Social Baseline

Sensitive receptors of the impacts of the proposed incinerator construction and operation are the clinic residences (**Figure 3.6**), private residences, clinic staff on duty, patients and by passers (general public). The current common practice of open burning of waste has not to have raised any concerns. The location of the proposed incinerator is in a central location and is equidistance from both the clinic and the closest residences by more than 40m. There is no existing road to the incinerator site from the clinic being a new site. Accessibility to the site would be by a foot-path would be built that that directly connects

the incinerator from the clinic and a vehicle access entrance will be cut along the perimeter fence adjacent to the incinerator as indicated in **Figure 3.7**.

The clinic operates in two main buildings. However, one of the buildings is currently undergoing major renovation works and has not been available for some time. The building that is currently being used has four rooms within which all services are offered, except labor/maternity, which as usual, given a room on its own.

The clinic area covers six registered land blocks that have Perpetual Estate (PE) titles registered under the Commissioner of Lands. The Noro Town Council with support from the Western Province government has pursued to secure Fixed-Term Estate (FTE) titles of the land on the premise to secure it for public purpose. The undertaking has been fast tracked due to the ongoing private land acquisition pursuits by residential developers whom apparently have begun to settle just next to the clinic staff residences. The Noro town Council have also gone ahead to secure the clinic site and the surrounding undeveloped sites applied for by erecting a perimeter fencing through the help of CAUSE[6] project. This is part of other improvements made by CAUSE to the clinic such as the complete renovation works on the second clinic building, concrete ramp access to the clinic's entrance door and paved foot-path leading to the clinic buildings.

The clinic is connected to the Solomon power electricity grid in Noro hence have access to energy, however the staff are unclear as to who pays the bill. According to Noro town planning, the clinic is situated in the commercial zone, hence next in its opposite direction is the primary and high school.

Ethnic composition of residents residing beside the clinic consist of people from all provinces in Solomon Islands who are employed in various organizations and companies including the two major ones (Soltuna and NFD) and Solomon power, Solomon water, Telekom and Solomon Ports.

[6] Community Access to Urban Services Enhancement project, World bank funded project in partnership with Solomon islands Government.

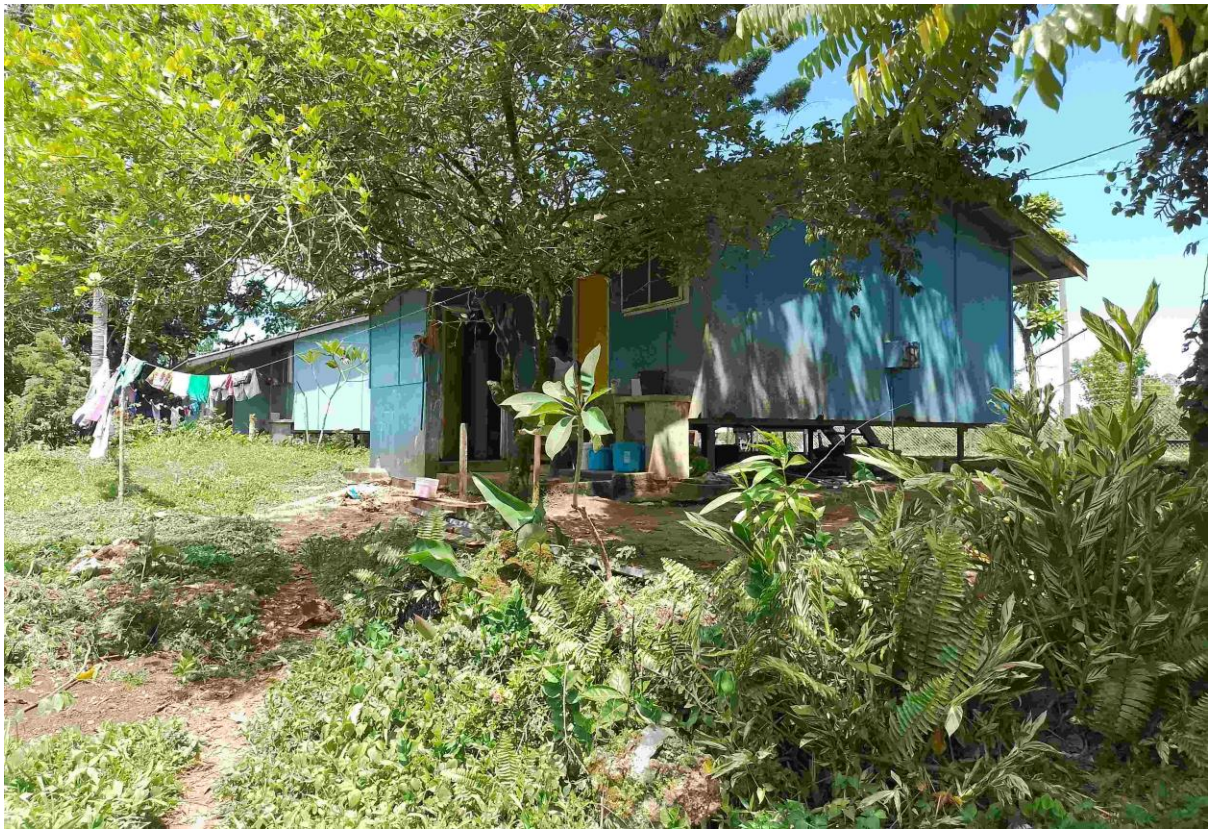


Figure 3.6 *Nearby staff houses to the incinerator site*

Figure 3.7. *Perimeter fencing around the clinic area at the spot that will be cut to install a gate for access to the incinerator*

***Figure 3.8**. Noro clinic compound showing waste storage locations, buildings and access*

4. Subproject Description

This section describes the Subproject purpose, planning and design, construction, operation and decommissioning.

4.1 Purpose, Planning and Design

The purpose of the Subproject is to enhance waste management system and improve infection control in Noro Clinic and Helena Goldie Hospital (HGH) in Munda through the establishment of a medical waste incinerator at Noro clinic that would also supplement the HGH incinerator. Although HGH already has an incinerator, which was funded by SPREP, it often has issues disrupting its operations and also waste production of the hospital is progressively high, hence the Noro one is a supplementary alternative for HGH and also for waste that need extremely high temperatures to fully incinerate. It was reported that the HGH incinerator has not been effective in incinerating some wastes at its highest temperature. The MHMS recognizes the need to improve waste management and infection control in provincial health facilities and consultations were held by the PMU with WB, MHMS, HGH and Noro Clinic administration on the appropriate activities to make up the Subproject.

The proposed design for Subproject equipment/facilities will ensure that the Subproject complies with the provisions of the WB ESF and Environmental and Social Commitment Plan (ESCP) for the overarching funding, and with international, national and regional E&S conventions laws, regulations and good practice.

The incinerator has been procured from Australia the purpose of the Subproject is the CA03 model of medical waste incinerator and the supplier was identified through a tender process. It is a newly built model by the supplier which is specifically designed to withstand the harsh environmental conditions in Solomon Islands. **Table 4.1** shows general specifications of the incinerator provided by the supplier. It is not equipped with a wet-type scrubber thus it does not generate any liquid or sludge waste. It will incinerate up to 20kgs of waste per hour. The design layout of the incinerator is displayed in **Figure 4.1**.

Table 4.1 *General specifications of the incinerator*

Component	Specification
Primary Combustion Chamber	• 6mm ceramic fiber high temperature insulating blanket • 115 mm thick 42 % Alumina firebrick
Secondary Combustion Chamber	• 6 mm ceramic fibre high temperature insulating blanket • 115 mm thick 42 % Alumina firebrick
Secondary Combustion Chamber Stack Cooling Zone	• 115 mm thick 42 % Alumina firebrick
Exhaust stack	• 316 stainless steel
Combustion fan	• Primary chamber underfire air fan
Length of time required for installation	• can readily be installed by two men in approximately one to two days

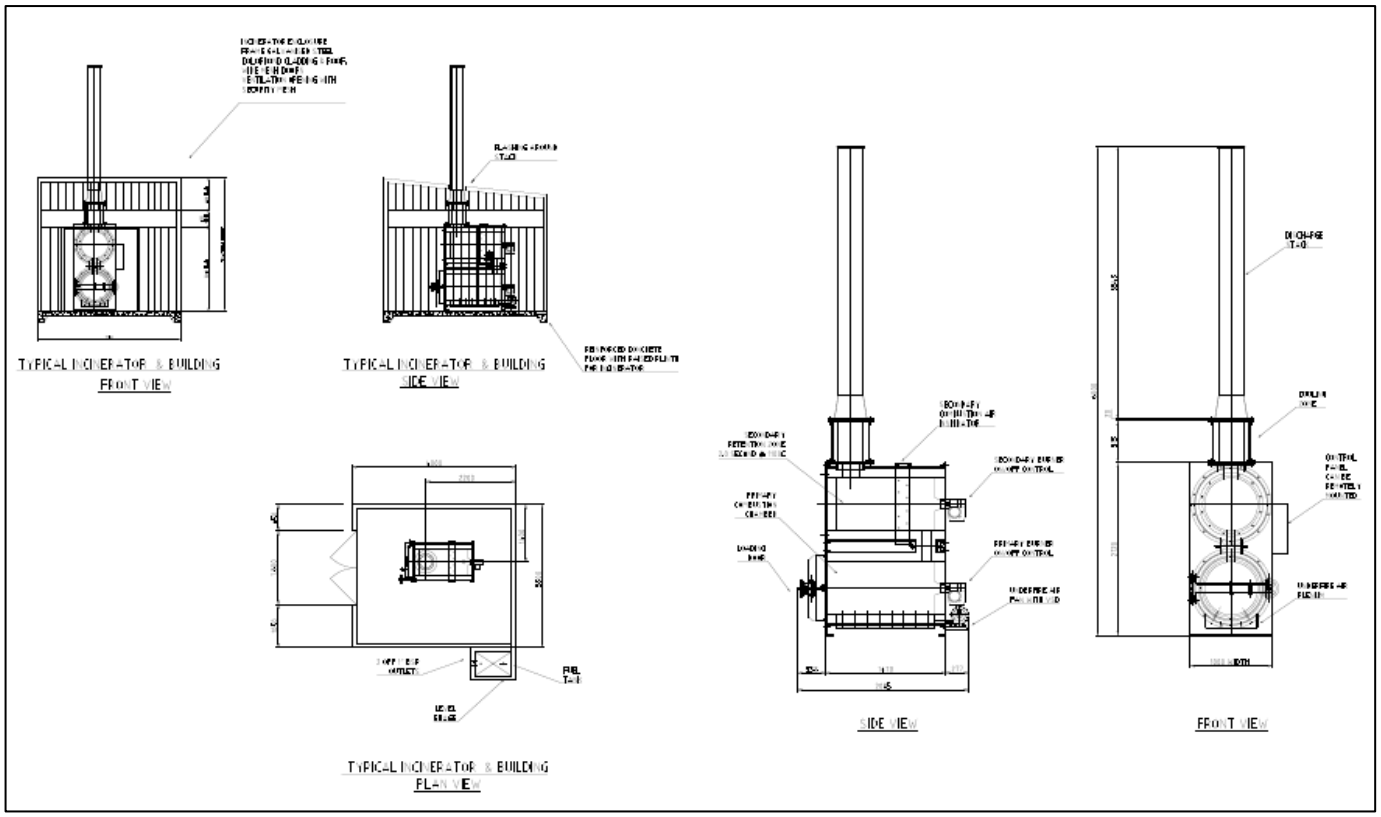


Figure 4.1 *CA03 incinerator design layout*

4.2 Construction

Construction activities for the incinerator comprises site preparation (**Figure 4.2**), construction of incinerator basement and power plant sheds, construction of ash pit, installation of incinerator and generator **(Figure 4.3 & 4.4).** Site preparation consists clearing/removal of grasses, scrubs and wild food plants, soil excavation works and leveling of ground and setting out site profile and modification of part of the existing fence to create vehicle access and install a lockable gate. Location of the proposed gate and accessibility routes are displayed in **Figures 3.7, 4.2, 4.3 & 4.4**. Following the site preparation will be excavations to create trenches for concrete footings, and establishing hard stands for raw materials like sand, gravel, timber and associated construction material at the site.

Construction involves preparing an elevated concrete slab on which to fix the incinerator and a cleaning area, a shed to house the incinerator, a power plant shed, basic landscaping works for the foot-path and entrance gate pavement and installation of a lockable gate. A sealed ash pit and soak-away pit will also be constructed at the back of the incinerator shed with an elevated concrete slab and walls (**Figure 4.5**).

Figure 4.2 *Location of the incinerator, ash-pit, generator shed and a foot-path and pavement area*

Fresh water for cleaning bins and tools after use will be sourced from the existing water system connection of Solomon water at the clinic. A small water tank for rain catchment will also be installed beside the incinerator to supplement the piped water connection. Secured fencing will be constructed around the incinerator facility.

The supplier has shipped the incinerator along with other incinerators and they are expected to arrive in Honiara in the 1st week of August. The incinerator will be stored in Honiara and then shipped to Noro prior to the commencement of work.

The supplier of the incinerator will deliver the incinerator to Honiara while installation, construction and fencing will be contracted to a suitable contractor through a tender process. The contractor will receive hands-on training from the supplier on how to install the incinerator by the supplier at the installation of the first incinerator at the Good Samaritan Hospital (GSH). The contractor will transport the materials and the incinerator to the site in appropriate vehicles. The contractor will provide the workforce for this Subproject. The workforce will consist of contracted and casual workers. Options for workers temporary residence will be offered to the contractor to decide, whether it is within Noro township or on site in temporary make-shift tents/tool shed. Arrangement of workers mobility will be a sole responsibility of the contracted entity and will be clearly stipulated in the contract.

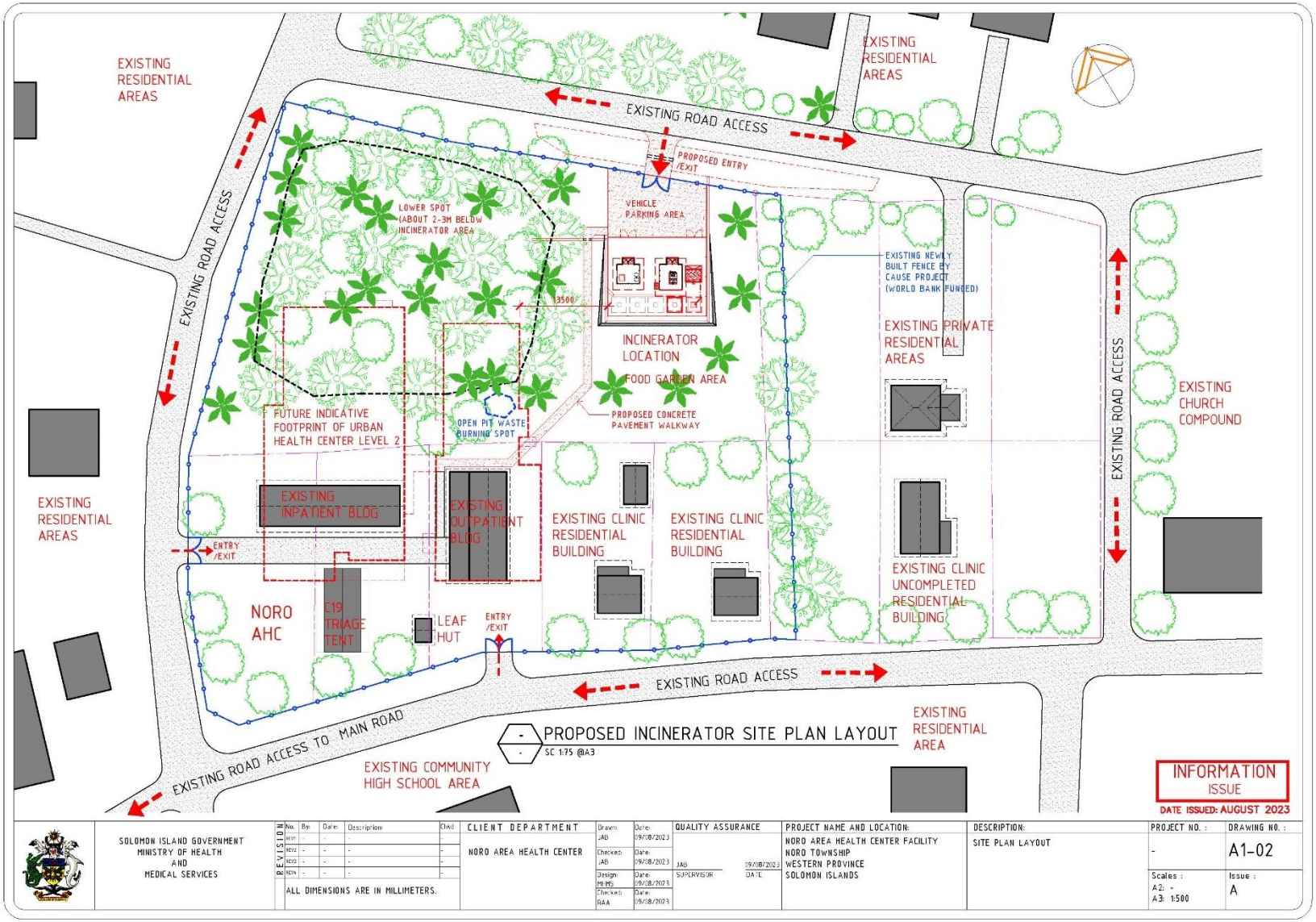


Figure 4.3 *Site plan and surrounding infrastructure*

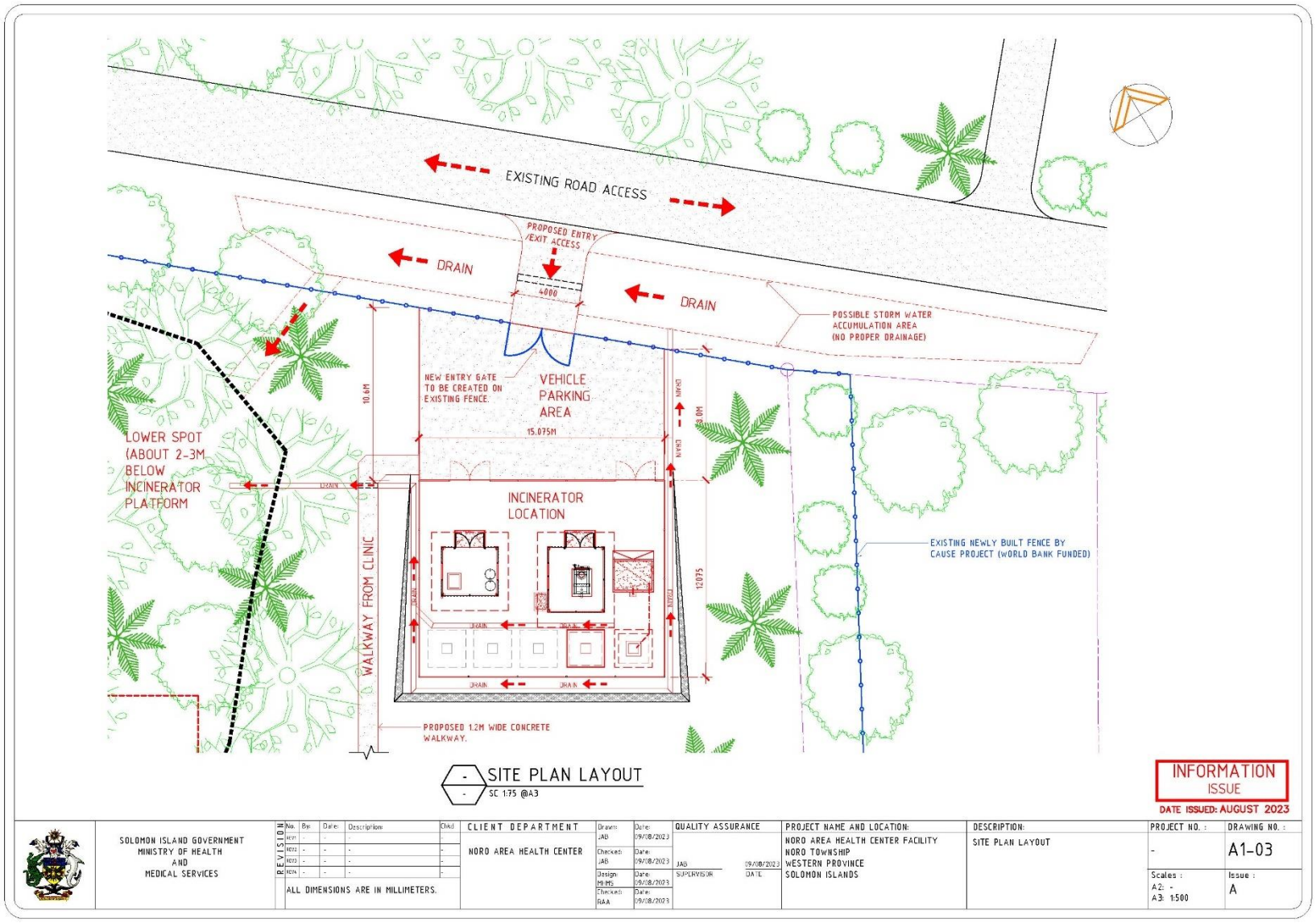


Figure 4.4 *Site plan incinerator facility layout*

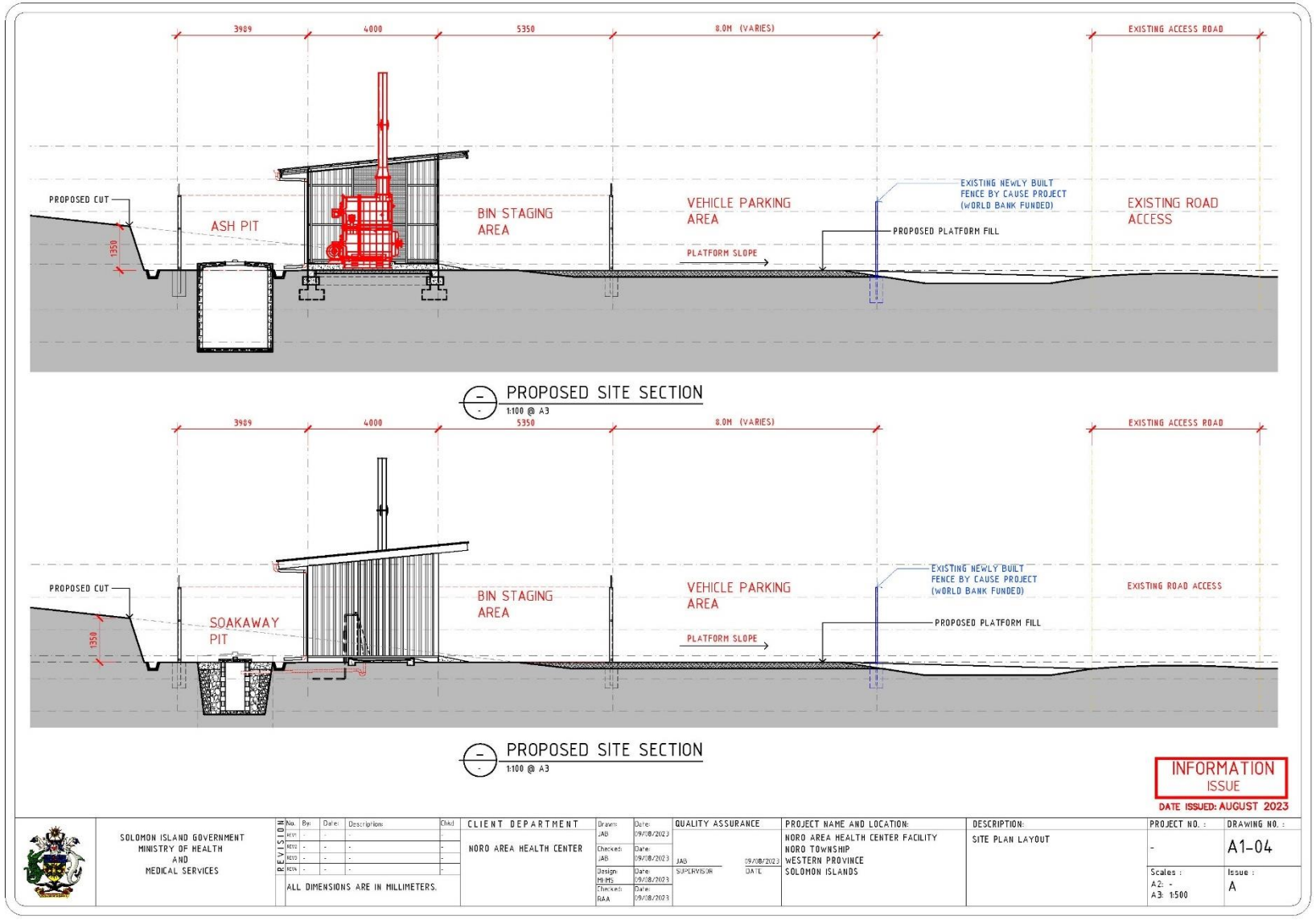


Figure 4.5 *Site cross section showing ash pit and soak-away pit*

4.3 Operation

Operation of the incinerator is expected to commence immediately after completion of construction, training and official handover of the Subproject to the Noro Clinic. The incinerator will provide incineration services for general and clinical waste from the Clinic and HGH. Only trained waste handlers will operate the incinerator. IPC training and incinerator operations training will be conducted for relevant Noro Clinic staff to better handle waste management and incineration.

For normal operation, waste handlers will schedule regular incinerating days and time, except under exceptional circumstances when there is large amount of waste and extended incineration times required. Furthermore, in the event of a natural hazard such as prolonged heavy rain down-pours and associated inundation and massive run-offs, the incinerator will not be operated unless suitable. The Noro Clinic, HGH and MHMS will develop operational instructions and schedules for use of the incinerator.

HG hospital in Munda will also use the incinerator through an MOU between Noro Town Council and HGH management. Operational arrangement on fuel and other costs are to be factored in the MOU. HGH waste will be transported to the incinerator via their vehicle and can enter through the vehicle access gate.

Wastes from Noro clinic could easily be transported to the incinerator using wheelie bins or wheelbarrow pushed/ pulled along the foot-path. After incineration, all vehicles, bins, wheel-barrow and any material/equipment used for transporting and handling of waste will be washed/disinfected on site using the installed water facilities. Residents and the public will be advised on incinerator site and operation through signs and notices. The supplier has not recommended any monitoring for air quality, noise or odor since it is an improved version of previous units they have on the market.

The incinerator will require power supply to operate and alternatives are included in the design. There will be a connection to the main Solomon Power electricity grid accessed by the Clinic that would be the major connection. A stand-alone generator will also be installed beside the incinerator as back-up for possible power outage. Furthermore, a solar system will also be installed to provide energy back-up. A shed will be constructed to shelter the solar batteries and the generator and its roof fixed with solar panels.

4.4 Decommissioning

After the life of the incinerator, solid waste would be required to be held in a safe area. All the hazardous waste will be incinerated and buried in ash pit and sealed. In regards to any rehabilitation plans, incinerator will be serviced often as expansion and improvement of waste management infrastructure is crucial.

5. Policy and Regulatory Framework

This section documents the applicability of SIG regulatory framework and relevant WB policies for the assessment and permit for the construction and operation of the incinerator.

5.1 Country Context

The SIG has an established regulatory framework that provides measures to protect and preserve the environment. The Environment Act 1998 and Environment Regulations 2008 make provision for the conservation and protection of the environment. This Act laid the foundation of Solomon Islands' environmental impacts assessment (EIA) system, which is implemented by the Environment and Conservation Division (ECD) of the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM). **Table 5.1** summarizes the relevance of the Acts to the Subproject.

5.1.1 Environmental Act 1998

The Environment Act 1998 (the Act) provides for the protection and conservation of the environment. The core objectives of the Act are to provide for and establish integrated systems of development control, EIA, and pollution control, including:

- Prevention, control and monitor pollution;
- Reducing risks to human health and prevent degradation of the environment by all practical means, including the following;
- Regulating the discharge of pollution to the air, water and land;
- Regulating the transport, collection, treatment, storage and disposal of waste;
- Promoting recycling, re-use and recovery of materials in an economically viable manner; and
- To comply with and give effect to regional and international conventions and obligations relating to the environment.

The Act is divided into four sections. Part I provide the Act with considerable power and states that in the event of conflict between the Act and other legislation, the Environment Act shall prevail. Part II establishes and defines the powers and role of the ECD. Part III establishes the requirements for environmental assessment, review and monitoring. This provides for an environmental assessment to consist of either a public environment report or if the development is shown to be of such a nature as to cause more serious impacts then the developer is required to prepare and submit an environmental impact statement EIS. Part IV details requirements for pollution control and emissions (noise, odor and electromagnetic radiation) and requirements to permits for the discharge of waste. Noise (restrictions on emitting unreasonable noise) is covered in Article 51(1).

Part III Article 17 requires any developer who proposes to carry out any prescribed development to make an application to the Director of ECD. Article 19 specifies that a developer shall not commence or continue to carry out any prescribed development unless the developer has been issued with a development consent (defined in the Act as a consent to carry out any development under Part III). Activities that require assessment are described as 'prescribed developments' and are included in the Second Schedule of the Act. There are two levels of environmental assessment; public environment report (PER), as described in Article 20, or if the development is shown to be such a nature as to cause more serious impacts then the proponent is required to prepare and submit an Environmental Impact Statement (EIS), as described in Article 23.

5.1.2 Environmental Regulations (2008)

The Environment Regulations 2008 (the Regulations) establish the procedures for undertaking the environmental assessment of any Subprojects categorized as a prescribed development.

The developer is required to first submit a "development application" which is reviewed by the ECD to determine the likely significance of impact and required level of environmental assessment. The decision resulting from the review may include that:

- No further assessment is required, as such the development application is accepted, and development consent is issued;
- A PER is required; or
- Where major Subprojects are considered such as logging, large agricultural developments, mining and large-scale tourism developments and infrastructure

Subprojects, an EIS is required which includes technical, economic, environmental and social investigations.

The Regulations establishes the procedures for undertaking the environmental assessment of 'prescribed developments' and the process of issuing development consent. The Regulations detail the process prescribed in the Act and set out the contents of PER and EIS.

Both the PER and EIS require public consultation. Following review and approval by the ECD, the development consent is issued either with or without conditions.

5.1.3 Environmental Impact Assessment Guidelines

The ECD developed the Environmental Impact Assessment Guidelines (2010) to provide basic advice and guidance to government officers, planners, developers, resource owners and those involved in processing development proposals, on the EIA process. The guidelines aim to clearly explain the procedures of EIA outlined in the Act and the Regulations. The guidelines describe the procedures needed to be undertaken (**Figure 5.1**), forms, and fees required before obtaining the development consent approval.

5.1.4 Regulatory Relevance to the Subproject Activities

The 'prescribed developments' that may apply to Subproject activities are Activity 9 - Public Works Sector (b) infrastructure developments; and (h) waste management, drainage and disposal systems. The minor renovations and refurbishments will likely not meet the definition of 'infrastructure development', however, the demolition and reconstruction of small hospitals and health centers may be considered prescribed developments. The incinerators and construction of Isolation Unit will likely meet the definition of a 'waste management system and infrastructure development' under the Act.

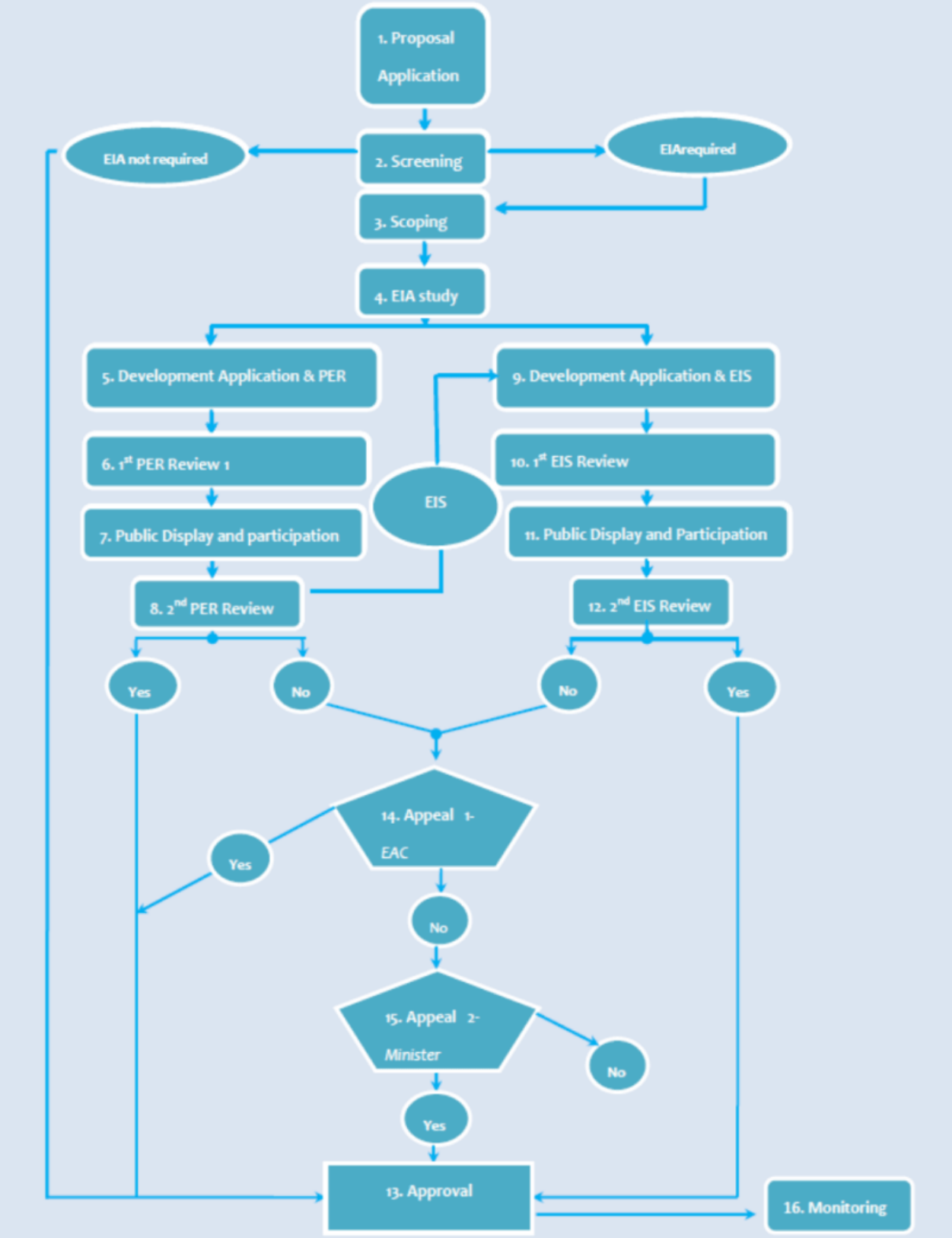


Figure 5.1 *EIA procedural steps*

5.1.5 Capacity of ECD

The ECD have overall accountability for environmental management in Solomon Islands. The ECD have some existing World Bank safeguard experience and capacity gained from working on previous World Bank funded Subprojects. However, ECD advise in their EIA Guidelines 2010 that the environment approval process can take several months (2-3 months at the minimum). Therefore, it is advisable that a proposal application to the ECD be lodged as early as possible to avoid delays. ECD also advise that prior to submission of the proposal application by the developer, it is advisable that the Developer should first seek written advice from the ECD.

5.1.6 Other Relevant Policies, Plans and Regulations

- Solomon Islands National Implementation Plan for Stockholm Convention on Persistent Organic Pollutants. Submitted in fulfilment of Solomon Islands obligations as a party to the Stockholm POPs Convention.
- National Waste Management and Pollution Control Strategy 2017-2026. The Solomon Islands National Waste Management and Pollution Control Strategy 2017-2026 is the country's roadmap for managing waste and controlling pollution in the natural environment for 10 years with the vision for 'clean, healthy and green happy isles'. The strategy addresses 5 main waste streams: Solid Waste, Liquid Waste, Hazardous and Chemical Waste, Healthcare Waste and Electronic Waste. The Strategy serves as a blueprint for waste management and pollution control that captures the national priorities and targets and identifies the relevant strategies to realize the priority targets in the next decade. It represents a major step forward for integration of waste issues and concerns into broader sustainable development policy. Objectives include to promote waste minimization in all aspects of development and to improve and upgrade existing management and disposal systems.
- Provincial Government Act 1997. This Act gives power to the provinces to make their own legislation and pass ordinances including for protection and conservation of environment, culture, wildlife and coastal and lagoon shipping.
- Town and Country Planning Act 1979. This Act applies to all urban areas (Honiara and provincial towns) and includes the management of land (all types of ownership) and management and planning functions for urban and rural areas including development.

5.1.7 Health-Care Regulatory and Policy Framework

The Health Services Act (1996) sets ups the Ministry of Health and Medical Services (MHMS) who are responsible for the provision of health and medical services in the Solomon Islands. The MHMS provides overall stewardship of the health sector and plays a regulatory role through strategic planning, standard setting and guidelines, for both government and non-state providers. The MHMS is responsible for providing public health services, including maternal and child health, family planning, school-based outreach, dental services, mental health, and vaccination and immunization. Section 10 (2) of the Health Services Act enables the Ministry to arrange with Provincial Assemblies and the Honiara City Council (HCC) to undertake any of the above-mentioned public health services. Section 13 of the Act also empowers the Ministry to make arrangements with church or voluntary bodies for the provision of health services.

The Environmental Health Act 1980 sets up the administration and structure of community health in Solomon Islands. The Minister of Health is responsible for the administration of environmental health services. The Minister may delegate this administration to the Provincial Government and the HCC which are designated as Enforcement Authorities. The Environmental Health (Public Health Act) Regulations deal with public health issues and how to deal with them when they occur. The regulations empower the Minister and the Under Secretary of the MHMS to take specific measures to prevent the occurrence of a public health disease or where such disease had already occurred, to take measures to contain and prevent the spread of the disease.

To ensure quality of care, key legislative instruments implemented and upheld by the MHMS include:

- Health Workers Act 1989 – which regulates the functions and duties of various categories of health-workers and establishes a Health Workers Board "to prescribe registration, deal with matters pertaining to discipline and other connected matters";
- Medical and Dental Practitioners Act 1988 – "to regulate medical and dental practitioners";
- Nursing Council Act 1987 – which establishes a Nursing Council to register and regulate nurses, midwives and auxiliary nurses; and

- Quarantine Act 1978 – "for the inspection, exclusion, detention, observation, segregation, isolation, protection, treatment, sanitary regulation and disinfection of vessels, persons, goods and things" in order to prevent the introduction or spread of diseases.

5.1.8 Infection Prevention Control and Health Care Waste Management

Infection Prevention and Control Guidelines (IPCG) for Health Facilities were commissioned in 2020 by the World Health Organization (WHO) in collaboration with the MHMS (Annex VI) and published in September 2021. The overall purpose of these guidelines is to provide guidance on IPC standards and healthcare waste management for all levels of health service provision within the Solomon Islands. These guidelines are based upon the WHO Core Components of Infection Prevention and Control, Sierra Leone National IPC Guidelines, the previous MHMS Solomon Islands IPC Guidelines, and the Secretariat of the Pacific Community (SPC) Infection Prevention and Control Guidelines.

The MHMS is responsible for the regulation of healthcare waste in the Solomon Islands. However, generally the management of healthcare waste lies with the individual hospitals with little intervention from the MHMS. MECDM is responsible for waste disposal and waste disposal facilities. The waste management sector relies largely on legislative and regulatory documents that contain general waste provisions. The legislations summarized in Table 5.1 should be used as the guidance for proper management of healthcare waste in the Solomon Islands. The MHMS IPCG also contains measures for managing health-care waste (Annex VI).

Table 5.1*. Legislation and Regulatory mechanism Impacting Healthcare Waste Governance – Solomon Islands*

Legislation	Type	Summary	Regulator/Agency
Environment Act 2008	Act	The Act makes provisions for the protection and conservation of the environment. With regards to waste control and management, section 3c of the Act specifies the following: 'to reduce risks to human health and prevent the degradation of the environment by all practical means. In section 3(c) (ii), objects of the Act include to regulate the transport, collection, treatment, storage and disposal of waste and to comply with and give effect to regional and international conventions and obligations relating to the environment. Waste is dealt with in Part IV Control of Pollution. Section 5 establishes an ECD consisting of a Director and Environmental Inspectors who enforce provisions of the Act.	MECDM/ECD

Legislation	Type	Summary	Regulator/Agency
Environmental Regulations 2008	Regs.	Part 5 details the considerations the Director must take in approving a license application for waste discharge. Regulation 14(1)(d) states the Development may issue a Development Consent if satisfied that 'the proposed prescribed development will not contravene any relevant environmental obligation under any international treaty, convention or instrument to which Solomon Islands is a party'. Under r 18(1)(c), an appeal may be made against a decision of the Director under s 32 of the Act on the grounds the decision was 'inconsistent with any international treaty, convention or regional arrangement to which Solomon Islands is a party to'. Regulation 23(1)(c) states the Director may issue a license in Form 8 (a license to discharge waste) if 'the amendment will not contravene any environmental obligation under any international treaty, convention or arrangement to which Solomon Islands is a party'.	MECDM/ECD
Environmental Health Act 1980	Act	This Act's objective is to ensure the maintaining of environmental health. Its regulation prohibits people from causing nuisances including the prohibiting of discharging of noxious matter or waste from premises. Section 94 prohibits depositing waste in water sources of urban sanitary districts. Sch 5 part I section 4 assigns refuse collection and street cleaning and refuse disposal to HCC.	MHMS

5.1.9 Labor Legislation

The legislation governing labor management in the Solomon Islands includes:

- **Labor Act** (revised edition 1996) provides an overarching framework for labor legislation, establishing standards in relation to:
    - Days and hours of work
    - Payment of wages
    - Written contracts of employment
    - Maternity leave
    - Child labor
    - Care of workers
    - Termination of employment
- **Trade Unions Act** (revised edition 1996), which regulates the registration, leadership and operation of trades unions in Solomon Islands
- **Workmen's compensation Act** (revised edition 1996) makes provision for compensation to workmen injured at work in Solomon Islands, it's also includes occupational diseases.

- **National Provident Fund Act** (revised edition 1993) requires employers to pay contributions for any employee under a contract of service or apprenticeship.
- **Unfair Dismissal Act** (revised edition in 1996) provides a remedy for employees who may be unfairly dismissed and establishes right of referral to the Trade Disputes Panel
- **Safety at Work Act** (1982) designed to establish safe systems of work to eliminate or minimize the risks to health, safety and welfare. Under the Safety at Work Act, employer has the duty to:
    - Ensure the health, safety and welfare of all employees including part-and full-time workers, temporary workers and work experience people.
    - Inform, instruct and supply relevant information to all employees
    - Ensure that all plant, machinery and systems of work are safe and without risk to health and safety.
    - Ensure that all premises are safe to use and that all hazardous processes are either eliminated or adequately controlled.
    - Ensure that adequate training is supplied to staff where applicable
    - Ensure freedom from discrimination, harassment, bullying or violence in the workplace.
    - Ensure the health and safety of other who are not employed by the employer but may be affected by their undertaking, for example visits or contractors.

The Subproject has prepared an overarching Subproject specific Labor Management Procedure documents which aligns with ESS2 Labor and Working Conditions of the WB ESF.

5.2 World Bank Environmental and Social Framework (ESF)

Under WB classification the overall Subproject environmental and social risks rating is set at Substantial, particularly in relation to: (i) Occupational, Health and Safety (OHS) management of healthcare workforce; (ii) environmental pollution and community health and safety issues related to the handling, transportation and disposal of healthcare waste; (iii) Infection transmission and (iv) lack of capacity and experience of the implementation agency with regards to the WB's policy requirements for E&S management and (iv) the real or perceived inequities to the delivery of services.

The Subproject takes into consideration the potential negative impacts of installing the incinerator particularly given the proposed site is close to residential areas and within the Clinic area which construction and operation will have impacts on the patients and Health workers Mitigations measures will be developed to effectively avoid and/or minimize the impacts. Proper planning and consultation is important to develop mitigation measures, which is suitable for all stakeholders including the environment.

Six of the ten Environmental and Social Standards (ESSs) of the WB ESF have been screened as relevant. They are assessed in **Table 5.2** below. The other four are considered not relevant, namely: ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement, ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources, ESS8 on Cultural Heritage, and ESS9 on Financial Intermediaries. Detailed information on the Bank's ESF are available at: https://www.worldbank.org/en/Subprojects-operations/environmental-and-social-framework

The ESS that apply to the Subproject and the required measures and actions that apply are listed in **Table 5.2**.

Table 5.2. *Relevant Environmental and Social Standard*

Environmental & Social Standard	Relevance to the Subproject
ESS1 Assessment and Management of Environmental and Social Risks and Impacts	ESS1 is relevant to this Subproject as installation of the incinerator and construction of the new solation unit will potentially have E&S impacts on the surrounding environment and people, which requires effective mitigation.
ESS2 Labor and Working Conditions	ESS2 is relevant to this Subproject as it involves the use of human resources to execute the construction activities. It is important to consider the working condition and welfare of the workforce of the Subproject activities. A Labor Management Procedure (LMP) document has been prepared for the overarching Subproject in accordance with ESS2
ESS3 Resource Efficiency and Pollution Prevention and Management	ESS3 is relevant as this Subproject as it covers the disposal of medical waste and may generate solid waste.
ESS4 Community Health and Safety	ESS4 is relevant as the construction and operation of incinerator may potentially cause health and safety risks to the NORO CLINIC residents, patients, visitors and surrounding community members.
ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Indigenous people are expected to be the sole or the overwhelming majority of direct Subproject beneficiaries as the Subproject is expected to enhance health system to provide better service for the people. Accordingly, a separate Indigenous Peoples Planning Framework (IPPF) will not be prepared.

Environmental & Social Standard	Relevance to the Subproject
ESS8 Cultural Heritage	Although this standard is not considered relevant, in the unlikely event of construction or the movement of earth or items such as materials in connection with any Subproject activities that have not yet been identified the chance finds procedure (CFP) provided in the CoESP will apply.
ESS10 Stakeholder Engagement and Information Disclosure	ESS10 is relevant as the Subproject ensures to engage relevant stakeholders through the life cycle of the Subproject. A Stakeholder Engagement Plan (SEP) has been developed for the overarching Subproject in accordance with ESS10

5.3 World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines).

The following EHS guidelines are relevant to the Subproject will be used to guide the development of a Code of Environmental and Social Practice (CoESP – Appendix 1) and LMP:

- General EHS Guidelines: Environmental
- General EHS Guidelines: Occupational Health and Safety
- General EHS Guidelines: Community Health and Safety
- General EHS Guidelines: Construction and Decommissioning
- Environmental, Health, And Safety Guidelines Health Care Facilities.

5.4 World Bank Response to COVID-19

The World Bank Group (WBG) has developed the following guidance material in response to COVID-19 outbreak:

- Guideline for the preparation of a Contingency Plan for Subproject Sites.
- Technical Note: Public Consultations and Stakeholder Engagement to be applied to Subprojects under implementation and those under preparation.
- Technical Note: Use of Military Forces to Assist in COVID-19 Operations Suggestions on how to Mitigate Risks.
- Technical Note: SEA/H for HNP COVID-19 Response Operations.

For ESS1, the WB also identifies risks and mitigations measures for the transactions involving specific Subproject finance activities (i.e. works, goods and services, and technical assistance). The guidance has been considered during the preparation of this ES and supporting documents.

5.5 Relevant International and Regional Agreements

Solomon Islands is a party to the following regional and international agreements:

- London Convention and Protocol. The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972, commonly called the "London Convention", is an agreement to control pollution of the sea by dumping. Its objective is to promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of waste and other matter. In 1996, the "London Protocol" was agreed to further modernize the Convention and, eventually, replace it. Under the Protocol all dumping is prohibited, except for possibly acceptable waste on the so-called "reverse list". The Protocol entered into force on 24 March 2006 and there are currently 53 Parties to the Protocol, including the Solomon Islands.
- Natural Resources and Environment of the South Pacific Region (1986) (SPREP or Noumea Convention). This Convention is the major multilateral umbrella agreement in the Pacific Region for the protection of natural resources and the environment. This Convention was ratified by the Solomon Islands in 1989.
- Pacific Regional Solid Waste Management Strategy 2010-2015. Solomon Islands was one of several Pacific island countries to adopt the Pacific Regional Solid Waste Management Strategy, initiated by SPREP, and adopted by member countries in 2009. This regional strategy covers medical waste from public institutions such as hospitals and health care clinics, and special and difficult waste such as asbestos.
- Stockholm Convention for Persistent Organic Pollutants. The Stockholm Convention on Persistent Organic Pollutants is an international environmental treaty, signed in 2001 and effective from May 2004, that aims to eliminate or restrict the production and use of persistent organic pollutants (POPs). This convention was ratified and entered into force in Solomon Islands in May 2004.
- Waigani Convention on Hazardous Waste. The 1995 Waigani Convention is a treaty that bans the exporting of hazardous or radioactive waste to Pacific Islands Forum countries and prohibits Forum island countries from importing such waste. The convention has been ratified by Solomon Islands and entered into force in 2001.

5.6 Relevant Good International Industry Practice (GIIP)

Relevant Good International Industry Practice (GIIP) such as WHO technical guidance have been developed for addressing COVID-19. These technical guidance documents are

evolving, and they are being updated as new information becomes available and country conditions change. The guidance has been considered during the preparation of this ESIA and supporting documents.

WHO resources include technical guidance on: (i) laboratory biosafety, (ii) infection prevention and control, (iii) rights, roles and responsibilities of health workers, including key considerations for occupational safety and health, (iv) water, sanitation, hygiene and waste management, (v) quarantine of individuals, (vi) rational use of PPE, (vii) oxygen sources and distribution for COVID-19 treatment centers, (viii) Surveillance and case definitions, (ix) Risk communication and community engagement, (x) vaccine readiness assessment, (xi) surveillance of adverse events following immunization.

WHO Guidelines for COVID-19 are summarized in **Table 5.3**. Additional guidance is also listed in Annex VIII of the IPCP.

***Table 5.3**. WHO Guidelines for COVID-19*

WHO Guideline	Content
Covid-19 guidance environmental on cleaning for healthcare facilities 17 April 2020	Guidance on the cleaning and disinfection of rooms and wards or areas in healthcare facilities occupied with suspected and confirmed COVID-19 patients.
Covid19-stigma-guide	Methods to address risk of social stigma and discriminatory behaviors against people of certain ethnic backgrounds as well as anyone perceived to have been in contact with the virus.
Critical preparedness readiness and response actions COVID-10 2020-03-22_FINAL-eng	Update to the interim guidance document. This version provides updated links to WHO guidance materials and provides the full list of WHO technical guidance available for COVID-19 and provides updated recommendations in the table.
WHO-2019-nCoV-essential_health_services-2020.1-eng	Countries will need to make difficult decisions to balance the demands of responding directly to COVID-19, while simultaneously engaging in strategic planning and coordinated action to maintain essential health service delivery, mitigating the risk of system collapse. … Establishing effective patient flow (including screening, triage, and targeted referral of COVID-19 and non-COVID-19 cases) is essential at all levels.
WHO-2019-nCov-Hand_Hygiene_Stations-2020.1-eng	Hand hygiene is the most effective single measure to reduce the spread of infections through multimodal strategies.
WHO-2019-nCoV-HCF_operations-2020.1 – eng	To guide the care of COVID-19 patients as the response capacity of health systems is challenged; to ensure that COVID-19 patients can access life-saving treatment, without compromising public health objectives and safety of health workers.
WHO-2019-nCov-HCW_risk_assessment-2020.2-eng	This data collection form and risk assessment tool can be used to identify infection prevention and control breaches and define policies that will mitigate health care worker's exposure and nosocomial infection (infection originating in a hospital).

WHO Guideline	Content
WHO-2019-nCov-HCWadvice-2020.2-eng	This document highlights the rights and responsibilities of health workers, including the specific measures needed to protect occupational safety and health.
WHO-2019-nCov-IPC_Masks-2020.3-eng	It is possible that people infected with COVID-19 could transmit the virus before symptoms develop. It is important to recognize that pre-symptomatic transmission still requires the virus to be spread via infectious droplets or through touching contaminated surfaces.
WHO-2019-nCoV- IPC_WASH-2020.2-eng	Frequent and proper hand hygiene is one of the most important measures that can be used to prevent infection with the COVID- 19 virus. WASH practitioners should work to enable more frequent and regular hand hygiene by improving facilities and using proven behavior-change techniques.
WHO-2019-nCoV-IPC-2020.3-eng	Guidance on infection prevention and control (IPC) strategies for use when COVID-19 is suspected.
WHO-2019-nCoV-IPCPPE_use-2020.2-eng	Summarizes WHO's recommendations for the rational use of personal protective equipment (PPE) in health care and community settings, as well as during the handling of cargo.
WHO-2019-nCoV-Leveraging_GISRS-2020.1–eng	Several countries have demonstrated that COVID-19 transmission from one person to another can be slowed or stopped. The key actions to stop transmission include active case finding, care and isolation, contact tracing, and quarantine.
WHO-COVID-19-lab_testing-2020.1-eng	Laboratory testing guidance for COVID-19 in suspected human cases.
WHO-COVID-19-IPC_DBMgmt-2020.1-eng	Interim guidance for all those, including managers of health care facilities and mortuaries, religious and public health authorities, and families, who tend to the bodies of persons who have died of suspected or confirmed COVID-19.
WHO-WPE-GIH-2020.2-eng	The purpose of this document is to provide interim guidance on laboratory biosafety related to the testing of clinical specimens of patients that meet the case definition of the novel pathogen identified in Wuhan, China, that is, coronavirus disease 2019 COVID-19.
WHO 2019 Overview of the Technologies for the Treatment of Infectious and Sharp Waste from Health Care Facilities?	The purpose of this document is to provide 1) criteria for selecting technologies to facilitate decision making for improved health care waste management in health care facilities and 2) an overview of specific health care waste technologies for the treatment of solid infectious and sharp waste for health care facility administrators and planners, WASH and infection prevention control staff, national planners, donors and partners.
WHO-2019-nCov-Immunization-Cold_Chain-2020.1-eng.pdf	The purpose of this document is to provide advice on cold-chain safety considerations.

6. Impact Assessment

The CA03 Incinerator model procured by the PMU was not reviewed for E&S compliance requirements. The CA03 is a new unit and the supplier advised that emissions testing has not been completed and no data is currently available. Completion of modelling is not feasible for this Subproject based on lack of baseline data (and no working monitoring equipment in country), capacity, budget and time constraints. The incinerator will arrive

in country in August. Storing the incinerators is considered a risk as units may deteriorate and there is a chance parts will go missing. Because emissions data is not available for the purchased CA03 model, data for a similar model has been adopted to give an indication of expected emissions. Refer to Table 6.1 technical specifications for the i8-M70 incinerator model compared to the CA03 model.

Table 6.1 *Technical Specifications of the i8-M70 Incinerator Model vs CA03 model*

	CA03	I8-M70
Chambers	2	2
Operation Temperature	> 1,100°C _ < 1,200°C (in Secondary Chamber)	>850°C (in secondary chamber)
Burn rate	Up to 20kg per hour	Up to 50kg per hour
Dimensions (l,w,h)	2.085m x 1m x 6m	1.61m x 1.19m x 4.68m
Fuel Consumption	Full tank takes 4 weeks (5 days/wk use).	10-15 liters per hour
Fuel Type	Diesel	Light Oil, Diesel, Kerosene, Gas, LPG
Combustion Chamber Volume (m3)	0.3m³	0.75m3
Shipping Weight	4,200kg	2,450kg

Note: Actual burn rates and emissions will depend on a number of factors including waste type, volume of waste, moisture content, fuel used and local environmental conditions. *Source: iNCINER8, Advanced Combustion Engineering*

Use of the incinerator will result in emissions. Measured emissions (i.e., from the stack) were not able to be provided by the supplier. The results for the I8-M70 model have been utilized and compared to EU standards to give an indication of expected AQ outputs. These are provided in **Table 6.2**. Solomon Islands does not have air emissions standards, The WB EHS Guidelines for Health Care Facilities[7] provide emissions targets for small incinerators and these have been provided in **Table 6.2**. Most of the parameters provided in these guidelines differ slightly from the monitoring data provided by the vendor so direct comparison cannot be undertaken for most parameters. According to iNCER8, these figures are guidelines only and actual emissions depend on several factors including waste type, volume of waste, moisture content, fuel used and local environmental conditions.

Table 6.2 *Average emissions (on basic incinerator with secondary chamber without scrubbing system)*

Parameter	Measured*	European Union Standard**			EHS Guidelines for Health Care Facilities***
Averaging time	1/2 hour	Daily	Hourly	4 hours	Not specified

[7] https://www.ifc.org/wps/wcm/connect/960ef524-1fa5-4696-8db3-82c60edf5367/Final%2B-%2BHealth%2BCare%2BFacilities.pdf?MOD=AJPERES&CVID=nPtgRx5&id=1323161961169

Unit	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
Total Dust	12	5	10	NS	-
Total Particulate Matter	NS	NS	NS	NS	10
Total organic carbon	5	5	10	NS	10
Chlorine compounds	NS	5	10	NS	NS
Hydrogen chlorine	NS	NS	NS	NS	10
Fluorine compounds	NS	1	2	NS	NS
Hydrogen fluoride	NS	NS	NS	NS	1
Sulphur dioxide	2.4	25	50	NS	50
Nitrogen dioxide	60	100	200	NS	-
NOx	NS	NS	NS	NS	400
Carbon monoxide	78.3	50	100	NS	50
Mercury	NS	NS	NS	0.05	0.05
Cadmium and thallium	NS	NS	NS	0.05	0.05
Lead, chromium, copper, and Manganese	NS	NS	NS	0.5	0.5 (excluding tin)
Nickel and arsenic	NS	NS	NS	0.5	
Antimony, cobalt, vanadium and tin	NS	NS	NS	0.5	
Dioxins and furans	NS	NS	NS	0.1 ng/Nm3TEQ	0.1 ng/Nm3TEQ
Oxygen content	NS	At least 6%			At least 7%

** Source: iNCER8; ***Source: WBG EHS Guidelines for Health Care Facilities; NS = Not Specified*

While data is not available for the specific model purchased, based on the above it can be extrapolated that air quality impacts will be manageable and an improvement on the current situation where waste is burned on the ground. The supplier has advised that the units create minimal odor and are smoke free when operated as designed. As such, comprehensive training for operators will be the key mitigation measure, supported by working with the PMU and Noro Town Council to ensure that the appropriate budget and plans are in place to ensure that incinerator is maintained. The incinerator will provide an improvement from the current practice of open pit burning. The PMU will monitor the operation of the incinerator post-installation and adjust procedures if necessary, based on their observations and community feedback which will be collected via consultation and the Subproject Grievance Redress Mechanism (GRM).

The overall impact of the Subproject is expected to be largely positive by improving infection control and more efficient and safer disposal of medical waste for the Clinic, HGH Hospital and Noro community. Construction for the installation of incinerator will introduce short-term impacts that will require management and mitigation strategies. The impacts and risks are discussed under this section and mitigation measures to manage

these impacts and risks are described in Section 7 and **Table 7.1**. Operation of the incinerator will generate ongoing impacts as described in Section 6.1.3.

The work scopes and all identified impacts and risks will be further assessed during the development of the Code of Environmental and Social Practice (CoESP). The selected contractor is required to develop a CoESP, based on this ESIA, to confirm activities and to identify any additional impacts or risks not in this ESIA. The CoESP requires PMU approval prior to any works proceeding and a template and guiding text is provided to assist the contractors as Appendix 1.

6.1 Potential Environmental and Social Impacts

6.1.1 Planning and Design

The planning of the Subproject is a collective effort and discussions between the PMU, MHMS, WB, Noro Town Council, HGH management and representatives, residents church and school representatives. The PMU ESHS&CE Officer has conducted formal and informal discussions and consultations with the stakeholders on the Subproject activities and impacts.

During planning, the ideal site selected for the incinerator was on a bare land further away from the clinic but still within the clinic compound. The site is free from land restrictions being within the clinic compound. Selected materials and facilities are considered in the design to ensure durability, accessibility, sustainability and suitability for tropical climate. Stakeholders involved in the Subproject are the MHMS, residents, school, contractor, Clinic management, Noro Town Council and patients. The associated risks in planning of the Subproject include; engaging an unfit contractor to construct the incinerator, procuring inappropriate incinerator for the hospital, community grievances, and design failure due to natural hazards.

6.1.2 Construction

The construction and installation activities for the incinerator will not require land acquisition as it is already within Noro Clinic land. The residents have been consulted about the construction activities and the possibility of clearance to wild food plants that they might be using as their alternative food located within the incinerator site.

Grasses and shrubs will be removed and there will be minor earthworks to construct the foundations for the incinerator and power plant shed which may result in some sediment

runoff. Digging of the ash pit next to the incinerator shed may also cause some sediment runoff during heavy rainfall where topsoil may be carried away into the nearby road and surrounding residential areas.

The minor earthworks involved may generate noise and vibration from machinery and vehicles used. This may cause nuisance to the Clinic patients and nearby residents. Vehicles and machinery operating during construction and installation may generate dust and fumes with potential associated health risks to sick patients at the Clinic. The contractor will obtain construction materials from manufacturer/suppliers locally/internationally and provide the workforce for the Subproject, which could include casual labor from surrounding residents. Construction materials such as gravel, sand, timber, cement and steel rods for concrete will be obtained by the contractor from material suppliers in Honiara or within Noro and Munda and transported to site on appropriate vehicles.

Material storage will require hardstands next to the site. Construction work will use water for concrete mixing and washing of tools after each days' work. This has the potential to affect the surrounding area including the road by creating a pooled water and muddy conditions. Also, workers will need access to a toilet and clean water for food preparation or general use.

There may be a risk of limited or substandard materials, equipment, and engaging inappropriate workers, which could not deliver expected quality of work. The construction of the incinerator is within the Clinic area therefore, may pose risk of accidents and injuries to health workers, staff and patients at the Clinic. Construction workers will choose where to be accommodated whether within Noro Township, casual workers could live in their homes in Noro and travel to work site every morning. Accommodating some workers within Clinic compound is advisable in order to provide security for tools, materials and equipment on site. The possible risk of Gender Based Violence (GBV), Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and Violence Against Children (VAC) will need management onsite during working times and if workers are accommodated locally or onsite.

Vehicle access to the incinerator site is through a feeder road from NW of the Clinic towards SE direction running parallel along the perimeter fence. Foot access to the incinerator is through a foot-path that runs directly from the Clinic to the incinerator

(**figure 4.2**). The vehicle access road will be used during construction to bring in materials, machines, equipment and workers to the site. That same road is also daily commuted by residents living nearby and along that road are residential buildings.

This poses the risk to community health and safety to the residents in terms of possible accidents, dust, odor and noise as machines and vehicles will frequent the road near residential buildings during construction. Construction will also generate waste which may pose risk of pollution to the environment.

6.1.3 Operations

During operation, the Subproject activities require water and will be connected to the existing water system of the Clinic. This is unlikely to create a shortage of water the Clinic as the water would only be used for cleaning bins, tools, equipment and vehicles. The incinerator may also produce noise during usage, which may impact nearby residents. Additionally, odor and dust during transportation of waste to incinerator site may cause nuisance to nearby residents and reduce air quality in the vicinity. The residents and patients may experience fumes, smoke/odors from the incinerator.

The incinerator consists of durable materials and the structure is permanent which may add to solid waste at the end of the facility's life-span. Appropriate disposal methods will be considered for end of life waste. In extreme natural hazards such as flooding by intensive and prolonged down-pours of rain, water may wash dust or ash into nearby vegetation, the road and residential areas.

The potential for fire will be managed through keeping surrounding vegetation maintained and the provision of adequate firefighting equipment. Incorrect operation of incinerator may cause damage to the equipment and aggravated risks and a professional level of operations needs to be maintained to avoid workplace risks.

6.1.4 Decommission

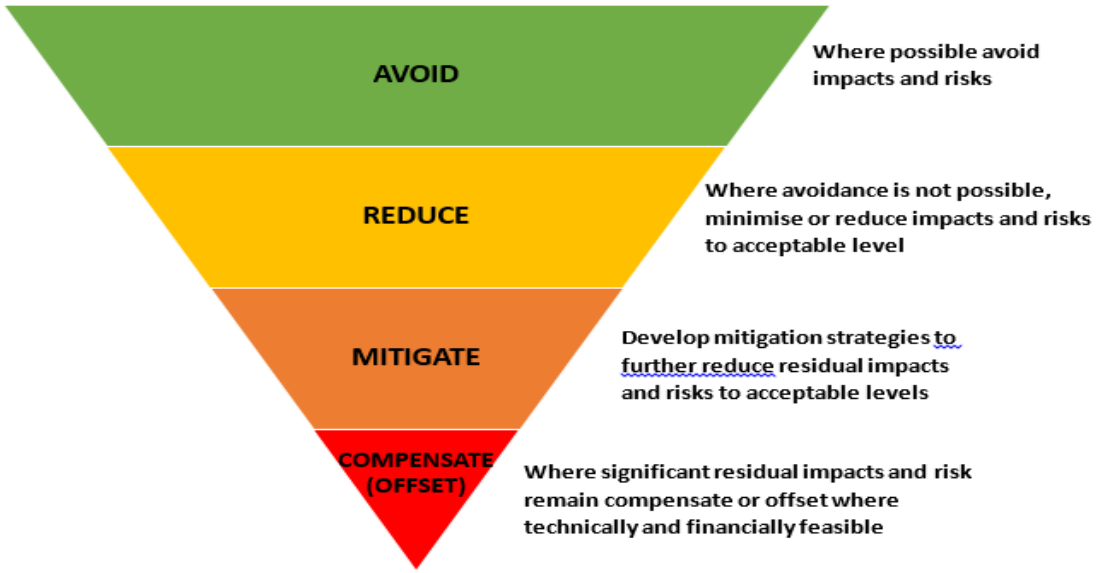
At the end of the incinerators life-span, infrastructure such as the incinerator and generator shed are repairable and for this case will be renovated and/or expanded to maintain the operations. Any decommissioned waste from the incinerator unit will be transferred to Noro landfill site for disposal. All the ash will be buried and sealed in the ash pit. There is a minor risk that improper disposal of the equipment and waste may result in pollution. There is the expectation that the Noro damp site will be refurbished and reorganized

through external assistance given the Townships economic significance to the Nation. This would enable proper management of solid and hazardous wastes generated by any decommissioning exercise.

7. Impact Mitigation

To address the potential adverse impacts and risks of the Subproject, mitigation measures are developed to avoid and/or minimize the impacts and risks on the biophysical and social environment surrounding the Subproject site utilizing the mitigation hierarchy detailed in **Figure 7.1.** Negative impacts and risks during the various phases of the Subproject are considered and strategies to avoid and/or minimize the impacts, in a best way possible, will be implemented. **Table 7.4** details the impacts, risks and mitigation strategies to avoid or mitigate impacts and risks of the Subproject.

Figure 7.1 *Mitigation Hierarchy*



7.1 Planning and Design

During planning, the PMU has conducted consultation with relevant stakeholders to inform and gather feedback on the Subproject. In addition, the PMU with the MHMS shall conduct a proper tender process to ensure a qualified and reputable contractor is selected based on capacity and capability to carry out the construction and installation work and implement the required E&S management measures to mitigate impacts and risks. The MHMS and PMU will ensure materials; equipment and building designs suit the tropical climate condition and requirements for incinerator. The site for the incinerator

has been selected during consultation as the area designated for waste management and the incinerator will be installed at the furthest corner of the site.

7.2 Construction

The contractor and the PMU ESHS&CE Officer will closely monitor the implementation of the CoESP to mitigate the adverse impacts and risks of the Subproject. Any soil erosion from earthworks for incinerator and generator shed footing will be minimized by securing excavated top soil or gravel that are likely to be washed off, during rain, in a proper place and limit removal of vegetation. Significant vegetation will be maintained and only trees and vegetation that hinder the construction site would be removed. This means only grasses and parts of food plants that are on the incinerator site should be removed and the rest of the areas should remain as it is.

The contractor must dispose all non-recyclable construction waste in a secure and appropriate landfill. Dust from construction activities should be controlled by the contractor utilizing appropriate methodologies. Waste water from site must be properly managed or soaked into proper pits. The Subproject shall ensure the contractor provides full PPE for the workforce and any visitor to the site. Noise and vibration during construction is to be reduced by switching off machines and equipment when not in use and contractor to provide noise protection gear to workers.

Traffic management to reduce any hazards from construction vehicles will be undertaken by the contractor to minimize risks to the community, Clinic staff and patients. Generators and similar machinery are to be placed in locations to minimise noise to the Clinic and residents. Construction barricades should be installed to avoid public access to the sites and to avoid injuries. Proper water channels and drainage, if required, should be constructed to control storm water and flooding during construction and operation of the incinerator. During unloading of materials, construction workers will control traffic to avoid any inconvenience or hazards and all the Clinic patients and surrounding residents will be advised to avoid the working area.

The PMU will ensure that contractors are fully aware of GBV, SEA, SH and VAC requirements outlined in the CoESP for the workforce. The MHMs has a national GBV Officer working under the social welfare department. There is an established national referral system called Safenet for the country, which the Subproject and PMU will utilize.

Details of the system can be found on the link[8] in the footnote. In addition, training will be provided to the contractor to improve their capacity to comply with the requirements of the CoESP.

7.3 Operations

Water connections for the incinerator will be made to the Clinic's water system for operations such as washing of bins, tools, equipment and vehicles before they exit the premise. Waste water from the operation of the facility must be properly handled through the use of drainage and a soak-pit.

The CA03 Incinerator model procured by the PMU (**Figure 4.1 and Table 4.1**) has not been independently reviewed for World Bank E&S compliance requirements. The CA03 is a new unit and the supplier advised that emissions testing has not been completed and no data is currently available. Based on this, air emissions data for a similar unit has been adopted and used as an indication of likely air quality emissions. Completion of modelling is not feasible based on lack of baseline data (and no working monitoring equipment in country), capacity and budget and time constraints. The incinerators arrive in country in early August. Storing the incinerators is considered a risk as units may deteriorate and there is the chance parts will go missing.

The supplier has advised that the units create minimal odor and are smoke free when operated as designed. As such, comprehensive training for operators will be the key mitigation measure, supported by working with the PMU, NTC and Clinic to ensure that the appropriate budget and plans are in place to ensure that incinerator is maintained. The new unit will provide an improvement from the current open burning practice which generates a lot of pollution. The PMU will monitor the operation of the incinerator post-installation and adjust procedures if necessary, based on their observations and community feedback which will be collected via the GRM.

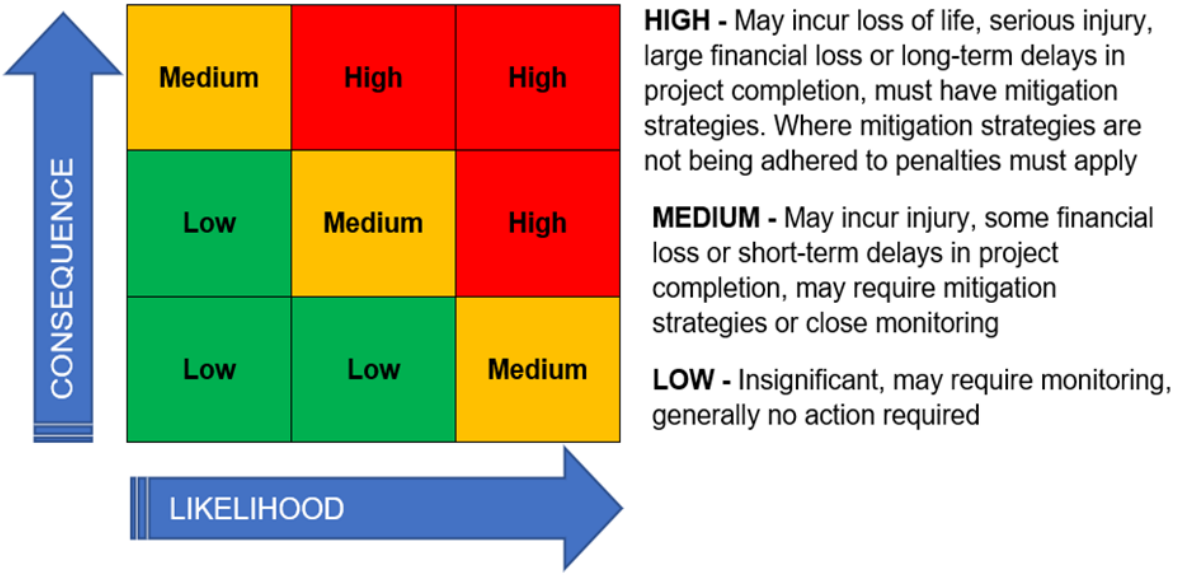
7.4 Impact Risk Rating

For the purpose of this ESIA an impact is the expected outcome of an action and risk is the chance that the impact will occur, calculated as potential consequences of harm by the likelihood of the event occurring. Risk analysis for this ESIA was undertaken using the likelihood- consequence matrix detailed in **Figure 7.2.** The risk of the Subproject is

[8] https://www.facebook.com/SAFENETSolomonIslands/about

considered medium as the implementation of the Subproject may cause erosion, noise and waste pollution, injuries and grievance which mitigation measures are developed.

***Figure 7.2** Risk Matrix*



7.5 Residual Risks

To determine the residual risks for each potential impact post implementation of mitigation strategies, a similar risk assessment approach has been undertaken. The likelihood of an impact occurring following the implementation of management and mitigation measures is assessed using the categories provided in **Table 7.1.**

***Table 7.1** Likelihood categories*

Likelihood	Description
Certain	Expected to happen routinely during the Subproject life
Likely	Could easily happen and has occurred on a previous similar Subproject
Unlikely	Possible, but not anticipated

The consequence of the impact occurring following the implementation of management and mitigation measure is assessed using the categories provided in **Table 7.2**.

***Table 7.2** Consequence categories*

Consequence	Description
Minor	Minor effects on biological, social, economic or physical environment, both built and natural. Minor short to medium term damage to small area of limited significance, easily rectified.
Moderate	Moderate effects on biological, social, economic or physical environment, both built and natural. Moderate short to medium term widespread impacts. More difficult to rectify
Major	Serious effects on biological, social, economic or environment, either built or natural. Relatively widespread medium to long term impacts. Rectification difficult or impossible.

Based on the assessment of the likelihood and consequence of a given risk with the proposed management and mitigation measures in place, a residual risk rating is derived from the risk matrix as presented in **Table 7.3.**

Table 7.3 *Residual Risk Matrix*

Likelihood	Consequence		
	Minor	Moderate	Major
Certain	Medium	High	High
Likely	Low	Medium	High
Unlikely	Low	Low	Medium

If an identified residual risk is not lowered or remains high, consideration of additional management and mitigation measures will be identified and implemented, or justification provided for the risk.

Table 7.4 details the assessed impacts and risks, the mitigation strategy to be applied to reduce each impact and risks, the persons/agency responsible for implementing the mitigation strategy and the residual risk after mitigation strategies are applied.

Table 7.4 *Impacts, risks, mitigation, responsibility and residual risk*

Potential Impacts	Potential Risks	Risk Rating	Mitigation	Responsibility	Residual. Risk
Design					
Subproject Failure	Inadequate design		Undertake sufficient research utilizing suitable technical specialists to identify appropriate sustainable technology	MHMS/PMU	
	Community does not accept Subproject		Facilitate good community consultation to ensure community understanding and acceptance of the Subproject prior to implementation. Maintain a record of all consultations and provide regular feedback to communities on the status of the Subproject	PMU	
	Permits not in place		Ensure all the legally required permits are obtained prior to undertaking the construction and this	PMU	

Potential Impacts	Potential Risks	Risk Rating	Mitigation	Responsibility	Residual. Risk
			ESIA is acceptable for the SIG environmental approval process		
	E&S risks not mitigated		The contractor bidding documents should contain clauses on E&S requirements to guide the contractor on the key requirements. Table 8.1 provide guidance for the bidding documents	PMU Procurement Officer	
Construction					
Degradation of flora and fauna	Loss of critical flora and fauna		The contractor should ensure that there is minimal disturbance to the Subproject site area The contractor shall as much as possible complete the works in such a manner that natural aesthetics shall be retained at the location No unnecessary removal of plants, bushes, shrubs, trees and palms at the site. Guidance included in the CoESP	Contractor	
Water quality	Erosion and sediment runoff		The contractor will ensure proper demarcation of the Subproject area to be affected by the works Works to limit vegetation removal at the Subproject site; Any excavation activities should not interfere with local drainage or introduce physical changes that are not in harmony with the physical setting of the Subproject area Retention of grass, herbaceous plants, shrubs and trees, to the extent possible on the Subproject site Drainage system to divert storm water around the facility as per	Contractor	

Potential Impacts	Potential Risks	Risk Rating	Mitigation	Responsibility	Residual. Risk
			design (Figure 4..3, 4.4 & 4.5) Guidance included in the CoESP		
	Pollution		Ensure proper handling, storage and disposal of waste oil, lubricants, oil filters and fuel from generator Guidance included in the CoESP		
Noise and vibration	Community grievances		Undertake works at suitably agreed times that do not impact the community adversely Observe a common-sense approach to vehicle use, and encourage drivers to switch off vehicle engines when not in use Provision of appropriate PPE (hearing protection ear muffs) to the workers and any other person visiting the site Guidance included in the CoESP	Contractor	
Road damage, dust and traffic	Community grievances, loss of access		Undertake works that do not coincide the wet season to avoid damage to the road and heavy vehicles getting stuck Reduce speed close to sensitive receptors to reduce dust and traffic accidents	Contractor	
Solid waste	Community grievances		Ensure all solid waste is deposed to approved landfill sites or in a manner that is acceptable to the community Guidance included in the CoESP	Contractor	
Loss of crops	Community oppose Subproject due to loss of livelihood		Document any food crops onsite and if required facilitate written agreements through consultation if they are impacted by site works	PMU	

Potential Impacts	Potential Risks	Risk Rating	Mitigation	Responsibility	Residual. Risk
Local employment	Community grievances		Where possible use locals and local businesses Guidance included in the CoESP	Contractor	
Social disruption	Community grievances		Non local workers to treat locally community with respect and follow the code of conduct (COC) as outlined in the CoESP	Contractor	
Occupational health and safety	Injury or death		Contractor to conform to all OHS laws and regulations All construction workers should be inducted on the health and safety requirements while at Subproject site Workers should be provided with adequate and appropriate PPE (safety helmets, shoes, gloves, mask,) and enforce on use of the PPE's Provision of clean and accessible sanitary facilities and water to workers Install safety signage at the work site should be done by a trained certified, experienced personnel and include contacts for nearest emergency services Contractor to report immediately to the PMU any OHS incidents Guidance included in the CoESP	Contractor	
Operations					
Waste Management	All		Develop a Waste Management Plan (WMP) that incorporates operational procedures, operational OHS, ash pit use and maintenance, air and water pollution prevention, fire risks and emergency response, training and	MHMS – IPC team.	

Potential Impacts	Potential Risks	Risk Rating	Mitigation	Responsibility	Residual. Risk
			maintenance.		
Injury or death to operators	Occupational, health and safety		OHS risks related to medical waste management including; thermal injuries while operating incinerators, sharps-inflicted injuries & disease infections are expected, the waste handlers and incinerator operators will be provided with adequate and appropriate personal protective equipment, provision of sanitary facilities (wash areas), provision of fire-suppression equipment guidance on operation and maintenance of the equipment, training and capacity building on OHS measures, infection prevention and control and medical waste management to healthcare workers, waste handlers and incinerator operators	MHMS	
Ash Pit	Community grievances and disturbance by feral animals		In selecting the appropriate site for the ash pit, to be considered is that it should be as close to the incinerator as possible. Considerations for the local soil type should also be in mind when designing the ash pit. Ash pit will be a sealed unit	MHMS	
Pollution of local water	Heath risks to community		It should be checked that the ash pit will not affect the groundwater, or be affected by it. Ash pits are not recommended in sites where the water table is near the surface or in areas prone to flooding. At least 1.5m from the	MHMS	

Potential Impacts	Potential Risks	Risk Rating	Mitigation	Responsibility	Residual. Risk
			bottom of the pit to the groundwater level is recommended. The contractor should dig a test pit and insert a narrow metal pipe or bar into the soil to a depth of 1.5 m. If the end of the bar is wet or soil removed from the pipe is wet, the pit may be too close to the ground water. If the groundwater is too close to the bottom of the test pit, considerations for other options such as changing the design of the pit to make it wider but shallower; creating more, shallower pits or creating a pit that is partially made of bricks above ground. Soak pit to be constructed for wash up waste water runoff. Fuel to be stored in the power shed and handled to avoid any spillage		
Air pollution from incinerator	Community grievances		Develop a set of operating guidelines in the WMP that include: Introduction of waste into the incinerator only after the optimum temperature is reached in the combustion chamber Prevention of waste additions if the operating temperature falls below the required limits. Implementation of a maintenance and other procedures to minimize planned and unplanned shut-downs Avoiding operating conditions in excess of those that are required for efficient destruction of the waste	MHMS	

Potential Impacts	Potential Risks	Risk Rating	Mitigation	Responsibility	Residual. Risk
			Avoiding operating the incinerator on days where weather conditions will lead to air discharges impacting local communities		
Emergencies	Damage to property, injury or death		Emergency responses to be included in the WMP as described in Section 7.6. Keep the area surrounding the incinerator clean and well mowed to remove possible fuel for a fire Have fire extinguishing capacity close to the incinerator when operating Emergency contacts to be displayed in the power storage shed	MHMS	
Decommissioning					
Community expectations	Community grievances		Ensure the obsolete incinerator is disposed of in an acceptable manner in approved landfill (Honiara Land-fill)	MHMS	
Solid waste	Community grievances		Ensure all solid waste is buried in the ash pit or disposed of at an approved landfill site in Honiara.	MHMS	

7.6 Outages and Emergency Management

The incinerator may at times encounter problems either itself or issues with the peripheral equipment attached to it such as the local power supply, the generator and/or solar system, which would potentially disrupt its operation. In such situations the clinic will revert to utilizing the pit burn and bury methodology used prior to the installation of the incinerator.

There is no flood risk onsite and drainage around the facility will facilitate drainage during heavy rains (Figure 4.8). The ash pit would need proper management by the waste management team in order to avoid it being filled prior to another pit being prepared. This practice should be part of the ongoing commitment of the Noro Clinic management and will be emphasized during waste management training and instructions included in the WMP.

Management of fuel supplies is important as it has direct relation to the operation of the incinerator. Immediate fuel required for a period of operation will be kept at the site. Fuel transportation to the incinerator will be made on a regular basis considering the fact that the incinerator fuel tank can only store up to a week's worth of burning. Whenever there is no fuel to operate the incinerator, waste will be burnt and buried onsite as per the pre incinerator method.

The responsible waste management staff bares the responsibility to always manage the facility. A barricade fencing, which has been part of the design, will be erected around the facility to avoid intrusion by animals or humans even if the area is unattended for a longer period. It will have a lockable entrance and managed by the waste management staffs of Noro Clinic.

For the purpose of back-up and/ or continuity of proper waste management practices, training will include other health workers or part-timers on how to handle and collect medical wastes. This is to complement the IPC nurses, the HGH waste truck driver and handy person of the clinic who are currently responsible for waste management.

8. Requirement for Construction Bidding Documents and E&S Mitigating Cost Estimates

The following **Table 8.1** should be included in the bidding documents along with the CoESP template (Appendix 1) for construction phase of the Subproject. To implement the management of the E&S mitigation strategies the contractor will be required, with the support of the PMU to develop a CoESP (Appendix 1). Development of the CoESP will be undertaken at the contractor's expense and must be included in all bids for the bids to be valid.

Table 8.1 *E&S requirements and estimated costs for bidding documents*

Potential Impacts	Potential Risks	Mitigation	Contractors Requirements	Estimated Cost
All	**All**	**Develop and implement the CoESP**	**Develop in collaboration with the PMU a CoESP, implement and train staff on CoESP including OH&S**	**USD5,000**
Degradation of flora and fauna	Loss of critical flora and fauna	The contractor should ensure that there is minimal disturbance to the Subproject site area The contractor shall as much as possible complete the works in such a manner that natural aesthetics shall be retained at the location.	The contractor to have a basic understanding of the site parameters and requirements for any earth works or other site disturbances during works	Contractor to include costs, if any, when bidding

Potential Impacts	Potential Risks	Mitigation	Contractors Requirements	Estimated Cost
		Guidance included in the CoESP		
Water quality	Erosion and sediment runoff	The contractor will ensure proper demarcation of the Subproject area to be affected by the works. Works to limit vegetation removal at the Subproject site; Any excavation activities should not interfere with local drainage or introduce physical changes that are not in harmony with the physical setting of the Subproject area. Retention of grass, herbaceous plants, shrubs and trees, to the extent possible on the Subproject site Guidance included in the CoESP	The contractor to have a basic understanding of the site parameters and requirements for any earth works or other site disturbances during works	Contractor to include costs, if any, when bidding
	Pollution	Ensure proper handling, storage and disposal of waste oil, lubricants, oil filters and fuel from vehicles Guidance included in the CoESP	Best practice to be undertaken by the contractor and detailed in CoESP	Contractor to include costs, if any, when bidding
Noise and vibration	Community grievances	Undertake works at suitably agreed times that do not impact the community adversely Observe a common-sense approach to vehicle use, and encourage drivers to switch off vehicle engines when not in use Provision of appropriate PPE (hearing protection ear muffs) to the workers and any other person visiting the site Guidance included in the CoESP	Standard best practice to be undertaken by the contractor and detailed in CoESP	Contractor to include costs, if any, when bidding
Solid waste	Community grievances	Ensure all solid waste is deposed to approved landfill sites or in a manner that is acceptable to the community	Best practice to be undertaken by the contractor and detailed in CoESP	Contractor to include costs, if any, when bidding

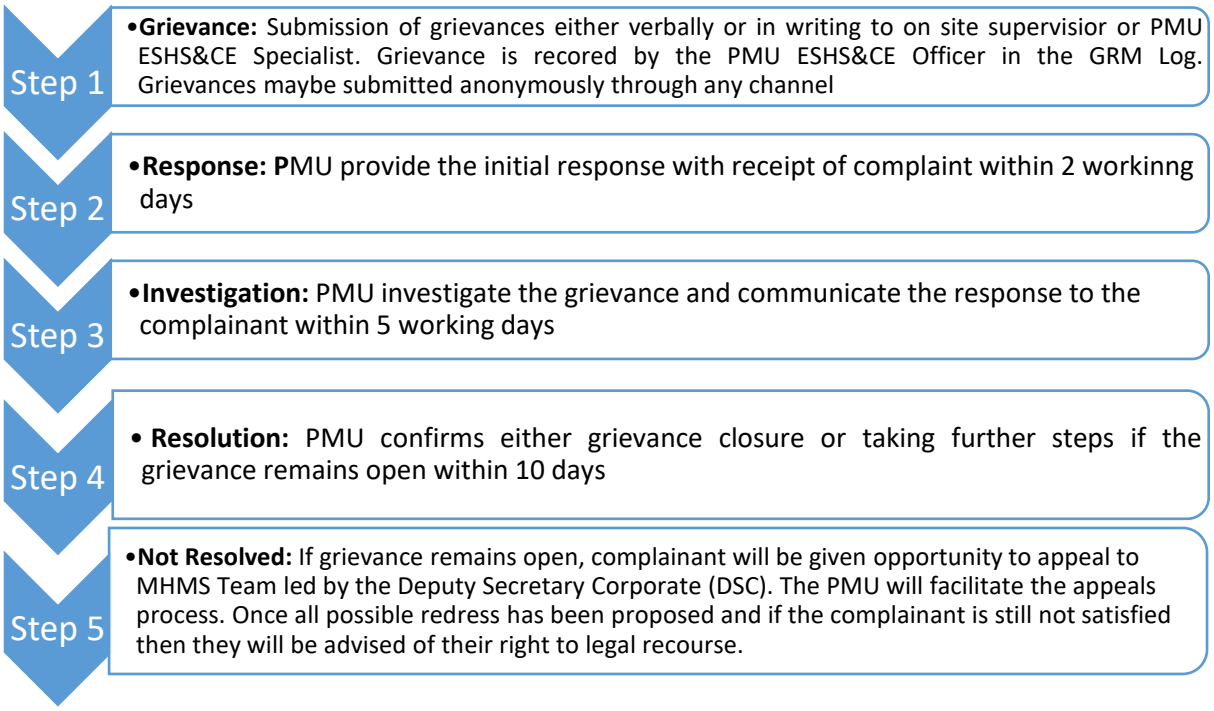
Potential Impacts	Potential Risks	Mitigation	Contractors Requirements	Estimated Cost
		Guidance included in the CoESP		
Local employment	Community grievances	Where possible use locals and local businesses Guidance included in the CoESP	Contractors to priorities local employment and businesses	No cost
Occupational health and safety	Injury or death	Contractor to conform to all OHS laws and regulations All construction workers should be inducted on the health and safety requirements while at Subproject site Workers should be provided with adequate and appropriate PPE (safety helmets, shoes, gloves, mask,) and enforce on use of the PPE's Provision of clean and accessible sanitary facilities and water to workers Install safety signage at the work site should be done by a trained certified, experienced personnel Contractor to report immediately to the PMU any OHS incidents Guidance included in the CoESP	Best practice to be undertaken by the contractor and detailed in CoESP	Contractor to include costs, if any, when bidding
Social disruption	Community grievances	Non local workers to treat locally community with respect and follow the code of conduct (COC) as outlined in the CoESP)	Detailed in CoESP	No cost
COVID - 19	Community infections	All the current at time of construction COVID-19 prevention measures should be observed and may include the following: • Wearing prescribed and appropriate PPE (masks) on site at all times. • Regularly washing hands, sanitizing and observing social distancing at all times • Seeking healthcare services immediately	Contractor to comply with COVID 19 mandates at time of construction	Contractor to include costs, if any, when bidding

Potential Impacts	Potential Risks	Mitigation	Contractors Requirements	Estimated Cost
		one experiences any of the following symptoms (while at home or work): cough, fever and shortness of breath.		

9. Complaints and Grievances

A Grievance Redress Mechanism (GRM) has been established by the PMU to record and resolve any complaint based on the Subproject activities. Any complaints and grievance during the life cycle of the Subproject will be acknowledged and recorded by the PMU ESHS&CE Officer. If the complaints or grievance is minor, the PMU ESHS&CE Officer and/or contractor/site supervisor may resolve it on site. For complaints and grievance that are not resolved onsite, the PMU ESHS&CE Officer will forward to the PMU Program manager (PM). The PMU PM will liaise with the PMU ESHS&CE Officer to negotiate and implement resolution. However, for complaints and grievance that are not resolve at this level, the PMU PM will forward to the Permanent Secretary (PS) MHMH and its executive for resolution. The PMU ESHS&CE Officer will liaise with all the stakeholders of the Subproject. The CoESP (Appendix 1) will provide guidance to the contractor for managing complaints and grievance on site. The GRM provides the steps for recording and resolving of any complaint and grievance of the Subproject. Below are the steps for GRM that the Subproject will be using to invite and resolve grievances.

Figure 9.1 *GRM process and timeframes*



10. Stakeholder Engagement

Different stakeholders are involved in the Subproject lifespan. Since the recruitment of the ESHS&CE Officer, consultations were carried out as detailed in **Table 10.1**. The key stakeholders include Noro Clinic, NTC, MHMS, UCSI and HGH, nearby residents and the public. A Stakeholder Engagement Plan (SEP) has been prepared for the Subproject to assist the stakeholder engagement process. The PMU ESHS&CE Officer conducted several consultations with the Noro Clinic management and staff on the Subproject activities. Following this, nearby residents, church, and vocational school representatives were consulted to provide them with information on the Subproject and likely impacts and risks.

Discussions between the PMU ESHS&CE Officer and the community members based on the direct impacts of incinerator included; how it will improve waste management for the hospital and the types of potential impacts and risks such as erosion, noise, dust, and OH&S. Starting dates for construction activities were discussed along with mitigation strategies to control noise, dust, accidents and community interaction with workers (including GBV, SEA &SH & VAC). A summary of community feedback is provided as Appendix 2.

A team from the WB consisting of international and regional representatives and specialists, PMU staffs and MHMS senior management team also visited Noro Clinic on 5th May 2023 during WB review mission to assess and discuss with the Clinic Staffs regarding the Subproject activities. Here discussions were based on what the Clinic needs and what activity the Subproject is offering for the Clinic. The WB E&S specialists were part of the team which they observe and assessed the sites for the incinerator. Risks are identified and possible mitigation are discussed with the Clinic staffs on site.

Table 10.1 *List of dates and activities carried out for stakeholder engagements for the NORO CLINIC*

Date	Location	Activity Description	Stakeholders consulted
20th April 2023	Noro Clinic	• Site visits to Noro Clinic and incinerator site. • Consultation for incinerator installation.	- Noro Town Council President. - HGH management. - UCSI Assembly.
21st April 2023	Noro Clinic	• Consultations with Clinic workers and nearby residents on the impacts of incinerator.	- Clinic Staffs. - Noro Township residents/representatives - Noro School.
05th May 2023	Noro Clinic	• Site visit to Clinic. • Provide Subproject progress update to Noro Clinic staffs and Noro Town Council staffs. • Gather views and discuss around mitigation measures for construction and operations impacts of incinerator installation activities.	- Clinic workers. - Noro Town Council Staffs.

11. Capacity Development and Training

Capacity development and training is essential for the sustainability of the Subproject. The supplier of the incinerator shall provide training on incinerator handling and safety. This was assured to be done practically upon installation of the first incinerator which is at Good Samaritan Hospital. However, it can also be done virtually to incinerator handlers and staff of the Noro Clinic. The PMU will provide training for the waste handlers through the MHMS IPC group to improve their capacity on waste management. The Subproject shall encourage capacity building and refresher trainings in the long run to improve the Clinic's staff capacity. The Subproject will ensure OHS training for the construction workers are conducted. The MHMS has an Environmental Health Division, which is responsible for provision of OHS training for national Subprojects. In overall, the MHMS being the government, has an ongoing capacity building training program.

12. Incident Management and Emergency Response

Any accident or incident to construction workers, Noro Clinic staff or the public that occur during the Subproject activities and/or on Subproject site will be reported to the PMU ESHS&CE Officer within 24 hours. The PMU and ESHS&CE Officer's contact details will be placed among other basic information of the works on a printed sign board at the construction site. In an accident, the affected individual (s) will be first treated at the Noro Clinic, being the closest health facility to the Subproject site. Then possible referrals can be made to HGH hospital in Munda upon Noro Clinic medical expert's recommendation if/ when the issue is beyond their handling capacity. If the issue is manageable for Noro Clinic, then it should be resolved there. Additionally, medical safety and first aid kits will be provided on site by the contractor as an OHS obligatory requirements expected to be fulfilled. Also, the construction works is within the Noro Clinic compound hence warrants quick response by medical experts for life threatening incidents.

Incident investigations will be completed as required by MHMS PMU in accordance with the World Bank ESIRT process. With regards to fire incidents, it is ensured that the OHS requirements that the contractor is heavily obliged to fulfill should put him in a better position to address such including having a plan, identifying a designated emergency assembly area for workers and additional measures pertaining to fire safety plans and procedures. It is also understood that Noro Clinic also has no fire safety equipment nor response plan in place. The Subproject would ensure such plans are in place and are activated and integrated with a fire response plan and procedure of the Subproject managed by the contractor. As part of the ESHS&CE officer's obligation on safety, a stakeholder engagement undertaking will be activated that would further involve the nearest police station (Noro Township Police station) being consulted and alerted for possible response on reported incidents as they arise from the Subproject site relating to fire, GBV and/ or social disorders relating to the Subproject. Furthermore, the ESHS&CE officer will ensure an OHS training is conducted with the contractor prior to commencement of work. It will cover important areas on safe work practices, emergency procedures for fire, evacuation, natural disasters, GBV, SEA, SH and VAC. This should put the contractor in a much better position to manage incidents at Subproject site.

13. Implementation

The PMU will facilitate the implementation of the Subproject. The PMU ESHS&CE Officer shall ensure that the contractor abide by the WB's environmental and social standards (ESS) and the national E&S frameworks and regulations. The PMU (particularly the ESHS&CE Officer and infrastructure officer) will monitor the overall progress of the Subproject by conducting regular site visits and requesting progress reports from the contractor. The contractor shall provide a Subproject construction schedule to the PMU infrastructure officer. The ESHS&CE Officer shall ensure there is proper coordination between the MHMS, PMU and the contactor.

14. Monitoring

The Ministry of Health and Medical Services (MHMS) will soon develop a guideline for monitoring medical waste incinerators in Health facilities with the help of the WHO for the long-term. This is to be an expansion of the IPCG of the MHMS that the project currently uses which lack coverage on incinerator monitoring. As the need is being recognised, discussions are currently underway to fast-track its development.

The Noro incinerator will eventually be monitored under the guideline once it is enforced but for the meantime, specific actions will be taken as an alternative by the Project in the absence of a guideline.

First, an E&S training will be carried out by the PMU with the help of the WB E&S specialists for relevant staffs within the MHMS who will be engaged in the monitoring including; EHD staff and respective Healthcare management staff (Noro Clinic). This training will basically cover key practical parameters to be monitored which are broadly stated in the subsequent paragraphs.

Generally, monitoring will be carried out on two (2) levels: first during construction and second during operations. It will be specifically focussed on the environmental hygiene aspects and social safety aspects respectively.

During construction period, the PMU will ensure that contractor follow the mitigation measures set in the ESIA report and CoESP.

The Nurse in-Charge of Noro Clinic will have overall responsibility for IPC and waste management. During project implementation and operation, the Nurse in-Charge will ensure that:

- adequate and qualified staff are in place, including those in charge of infection control and waste management;
- if additional staff are required, will recruit and provide trainings on waste management and IPC;
- a dedicated staff/team is assigned for regular review for issues and performance of the incinerator facility.

The Nurse in-Charge will formally appoint a team of 2-4 clinic workers comprising nurses and ancillary staffs to be responsible for implementing the procedures and mitigation measures that have been adopted to avoid or minimize the spread of COVID-19, and other infectious disease. A dedicated team with overall responsibility for infection prevention control and waste management will ensure that IPC and health care waste management activities are carried out in accordance with the MHMS IPCG. This team would also manage, coordinate and regularly review the performance of the facility in terms of how the waste streams in the health-care facilities are separated, tracked and recorded, and oversee the procedures for the safe transportation of potentially infected samples to testing facilities.

As such, comprehensive training for operators will be the key mitigation measure, supported by working with the PMU, NTC and Clinic to ensure that the appropriate measures are in place to ensure that incinerator is maintained.

The tasks of the dedicated team will include:

Oversee and supervise the waste management of the clinic, ensuring that health-care and other wastes are properly disposed in accordance with the IPC guidelines.

Set up the monitoring routine on the waste management and the general functioning of the incinerator, HSE measures and the ash pit condition, and ensure that the dedicated staff properly do the monitoring

Inspect ash removal conveyor and water levels in quench pit hourly if required.

Check opacity, oxygen and temperature monitors; clean under-fire air ports, ash pit and sump; inspect limit switches and door seals daily if required.

Clean heat recovery boiler tubes, blower intakes, burner flame rods and sensors, heat recovery induced draft fan; lubricate latches, hinges, hopper door pins, etc.

The Nurse in-charge of Noro Clinic will ensure that the dedicated team are offered training on the use, operation and basic service of the incinerator by the supplier. It was agreed with the supplier that such training would be conducted during installation and commissioning of the incinerator.

If the dedicated staff/team notice any malfunctions of the incinerator during operation phase, the team will contact the supplier to find out the source and seek for the maintenance and troubleshooting at the soonest.

Apart from the above and from a social stand-point, the PMU will monitor the post-construction phase of the incinerator through observations and community feedback which will be collected via the GRM. The social monitoring will basically be focussed on the handling and operation of the incinerator according to procedures provided by the supplier to ensure optimum usage for efficiency and low emissions level tolerable by the public. Monitoring will also track general community perception and tolerance of residual impacts especially on odour and smoke of incinerator and the handling of wastes by health workers in relation to community safety. The ESHS&CE officer of the project will carry out the monitoring on a monthly basis by site visits for observations and getting feed-back from receptor communities, clinic staffs and stakeholders. However, this should be carried out within the remaining time between completion of construction and end of project.

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Appendix 1. Code of Environment and Social Practice Template

SOLOMON ISLANDS GOVERNMENT

MINISTRY OF HEALTH AND MEDICAL SERVICES

P. O. BOX 349, HONIARA, SOLOMON ISLANDS

CODE OF ENVIRONMENTAL & SOCIAL PRACTICE (CoESP) TEMPLATE

Prepared by PMU – August 2023

Contents

Document history

Revision history			
Version #	**Date**	**Description**	**Name**
1	31/01/2023	Template	Greg Andrews E&S Specialist
2	July 2023	Revised	John P.Labere (ESHS&CE officer) PMU
3	24/07/2023	Revised	Greg Andrews E&S Specialist

Abbreviations and Acronyms

COC	Code of Conduct
CoESP	Code of Environmental and Social Practice
CSS	Contractor's Site Supervisor
E&S	Environmental and Social
EHS	Environmental Health and Safety
ESF	Environmental and Social Framework (World Bank)
ESH	Environmental, Social and Health
ESS	Environmental and Social Standard
GBV	Gender based violence
GRM	Grievance Redress Mechanism
GRS	Grievance Redress System
HCC	Honiara City Council
LUA	Land Use Agreement
MHMS	Ministry of Health and Medical Services
MLHS	Ministry of Lands, Housing and Survey
NC	Noro Clinic
NTC	Noro Town Council
OHS	Occupation Health and Safety
PMU	Subproject Management Unit
POA	Plan of Action
PPE	Personal protective equipment
PS	Permanent Secretary
SIG	Solomon Islands Government
SWD	Social Welfare Department
VAC	Violence Against Children
WB	World Bank

1. Introduction

Generally, construction of small works poses limited environmental and social (E&S) impacts and risks, however it is still very important to take into consideration and implement the principles of best practice environmental and social risk management to facilitate outcomes that are harmonized with World Bank (WB) Environmental and Social Frameworks (ESF) Environmental and Social Standards (ESS) and to avoid any negative E&S impacts on local staff, workers and local communities. An Environmental and Social Assessment (ESIA) has been undertaken as a part of the Subproject approval. The ESIA should guide and be referred to in the completion of this CoESP.

2. Purpose of the Code of Environmental & Social Practice

The Code of Environmental and Social Practice (CoESP) is developed purposely to manage and guide the contractor in their management of environmental and social risks and impacts and the construction of WB projects. The contractor is obliged by the provisions of the contract to undertake the actions detailed in this CoESP which has been approved by the PMU. Should the contractor fail to comply with the provisions of this CoESP, the PMU shall withhold payment of invoices until the contractor resolves the issue(s).

3. Objectives

Key objectives of the CoESP are:

- To guide compliance with relevant Solomon Islands legislation and the CoESP conditions
- To describe the conditions and mitigation measures the contractor will undertake to manage the environmental and social impacts and risks including health and safety of workers.
- To clearly define key personnel roles and responsibilities for the management, implementation, monitoring and reporting of the provisions within the CoESP.
- To detail the contractor's responsibility for any training and internal communications, which ensures their workers, understand the risks and impacts associated with the Subproject.

4. Scope of Works

Contractor to insert scope of works as detailed in their contract.

5. Contractor Obligations

The following information details the minimum actions the contractor must take to mitigate the E&S impacts and risks identified in the ESIA and any additional impacts and risks identified on site.

5.1 Impact and risk mitigation

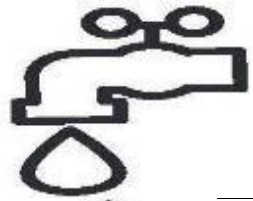
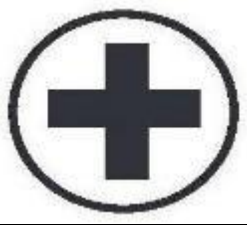
Table 5.1 identifies the mitigation actions identified in the ESIA. The contractor with the PMU during site takeover will identify any additional impacts and risks and include them in **Table 5.1.** The contractor will implement the E&S mitigation strategies detailed in **Table 5.1.**

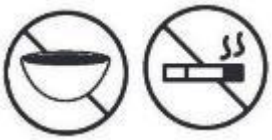
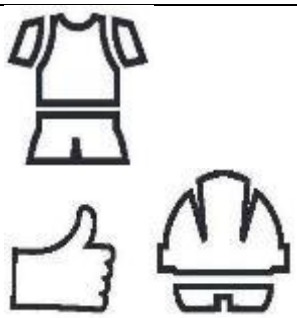
Table 5.1 *Potential Impacts and Risk, ESIA mitigation strategies and additional contractor requirement*

Potential Impacts & Risks	Mitigation as outlined in the ESIA	Site specific actions (contractor to add)
Degradation of lora and fauna	The contractor should ensure that there is minimal disturbance to the Subproject site area The contractor shall as much as possible complete the works in such a manner that natural aesthetics shall be retained at the location No unnecessary removal of plants, bushes, shrubs, trees and palms at the site.	**Contractor to add any additional actions after site assessment**
Water quality, erosion and sediment runoff	The contractor will ensure proper demarcation of the Subproject area to be affected by the works Works to limit vegetation removal at the Subproject site; Any excavation activities should not interfere with local drainage or introduce physical changes that are not in harmony with the physical setting of the Subproject area Retention of grass, herbaceous plants, shrubs and trees, to the extent possible on the Subproject site Drainage system to divert storm water around the facility as per design (Figure 4..3, 4.4 & 4.5)	**Contractor to add any additional actions after site assessment**
Pollution	Ensure proper handling, storage and disposal of waste oil, lubricants, oil filters and fuel from vehicles	**Contractor to add any additional actions after site assessment**
Noise and vibration	Undertake works at suitably agreed times that do not impact the community adversely Observe a common-sense approach to vehicle use, and encourage drivers to switch off vehicle engines when not in use Provision of appropriate PPE (hearing protection ear muffs) to the workers and any other person visiting the site Provision of appropriate PPE (hearing protection ear muffs) to the workers and any other person visiting the site	**Contractor to add any additional actions after site assessment**
Road damage, dust and traffic	Undertake works that do not coincide with the wet season to avoid damage to the road and heavy vehicles getting stuck Reduce speed close to sensitive receptors to reduce dust and traffic accidents	**Contractor to add any additional actions after site assessment**

Potential Impacts & Risks	Mitigation as outlined in the ESIA	Site specific actions (contractor to add)
Solid waste	Ensure all solid waste is deposed to approved landfill sites or in a manner that is acceptable to the community	**Contractor to add any additional actions after site assessment**
Loss of crops	Document any food crops onsite and if required facilitate written agreements through consultation if they are impacted by site works	**Contractor to add any additional actions after site assessment**
Local employment	Where possible use locals and local businesses	**Contractor to add any additional actions after site assessment**
Social disruption	Non local workers to treat locally community with respect and follow the code of conduct (COC) to be signed by all employees	**Contractor to add any additional actions after site assessment**
Occupational health and safety	Contractor to conform to all OHS laws and regulations. **Table 5.2** best describes on-site OHS ways to manage the risks of injury or death during construction activities All construction workers should be inducted on the health and safety requirements while at Subproject site Workers should be provided with adequate and appropriate PPE (safety helmets, shoes, gloves, mask,) and enforce on use of the PPE's Provision of clean and accessible sanitary facilities and water to workers Install safety signage at the work site should be done by a trained certified, experienced personnel Contractor to report immediately to the PMU any OHS incidents	**Contractor to add any additional actions after site assessment** **Local emergency response agencies (Police, hospital ambulance, fire) to be included with emergency numbers**

Table 5.2. *Minimum OHS provisions to be applied*

	Sufficient and clean drinking water to be on site at all times for workers		Toilets on or near the site to be available for all workers
	Suitable protection from rain and sun during rest breaks or weather stoppages to be made available		Workers are not forced to work in extreme weather (heavy rain, strong winds, etc.) or other weather that is dangerous or impactful.
	Site Supervisors should be trained in basic first aid to be able to provide care		The Site Supervisor should know where the nearest hospital/clinic is and where an ambulance or quick transport can be found/accessed

	A first aid kit is to be kept up to date, and on site at all times in a visible, accessible location		No alcoholic drinks or drugs to be taken before starting or during work (kwaso, bettlenut, kava, beer, marijuana). Workers should be not be affected by drugs or alcohol while on site at any time
	Machinery operators must be properly trained to use the machine		Protective clothing to be worn at all times: Safety boots. Reflectorized yellow or orange-colored safety vests or harnesses. Hats where there is strong sun. Goggles/masks when working in dusty condition Gloves when working in bush clearing and removal of obstructions, or mixing concrete/handling other toxic materials. Hard hats/helmets when working on sites where there is a danger of falling objects, e.g., in deep drains, digging pit latrines, work in quarries, etc.

5.2 Community Engagement

The PMU will develop some basic community information disclosure to make aware the recipient community, groups and individuals of the Subproject activities and responsibilities of the contractor. It is very important that the contractor is required to have the name and contact of a community leader/representative and work closely with the community leader/representative on activities regarding any noise, dust or inconvenience that may be caused to the local community during construction. The contractor must erect a construction sign with contact details for making a complaint or seeking further information as detailed in the grievance redress mechanism (GRM) **Annex 1**.

5.3 Worksite Induction

A site induction prior to start of work is very important and it must be undertaken for all site workers to ensure employees are aware of:

- The importance and purpose of the CoESP
- OHS onsite
- Any significant environmental hazards, actual or potential, that may be caused as a result of their activities or the Subproject
- Roles and responsibilities in relation to this CoESP

- Any spill response and or emergency procedure
- Accident and incident reporting and methods of prevention
- Codes of Conduct including responsibilities around Gender based Violence (GBV), Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and Violence against Children (VAC).

The PMU ESHS&CE Officer must be present at the initial site induction;

5.4 Roles and Responsibilities

The contractor has the responsibility to apply this CoESP during construction and to:

- Nominate an onsite supervisor:
  - To be the focal point for the PMU
  - To manage any public interaction
  - To be responsible for reporting any issues to the PMU
  - To ensure all individuals understand this CoESP and their obligations.

The PMU will be responsible for ensuring that the contractor complies with this CoESP with regular site visits and discussions with the nominated onsite manager.

6. Company Acknowledgment of CoESP and Code of Conduct (COC)

The Contractor is committed to ensuring that the Subproject is implemented in a way which minimizes any negative impacts on the local environment, communities, businesses, NMS staff and its workers. This will be done by respecting the environmental and social issues detailed in this CoESP, reporting and if appropriate, responding to issues that are unforeseen and ensuring appropriate OHS standards on-site. The company is also committed to creating and maintaining an environment in which they will not tolerate any breaches of the provisions within the CoESP by any employee, sub-contractor, supplier, associate, or representative of the company.

To ensure that all those engaged in the Subproject are aware of their obligations, the contractor 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:

- The company and all employees, associates, representatives, sub-contractors and suppliers commits to complying with all relevant national laws, rules and regulations.
- The company commits to fully implementing this CoESP.
- 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.
- The company shall ensure that interactions with local community members are done with respect and non-discrimination.

- 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.
- The company will follow all reasonable work instructions from the PMU (including those pertaining to environmental and social safeguards).
- The company will protect and ensure proper use of property (for example, to prohibit theft, carelessness or waste).
- The company will ensure that the Subproject's OHS standards are effectively implemented by company staff, as well as sub-contractors and suppliers.
- The company will ensure that all people on-site wear prescribed and appropriate personal protective equipment (PPE), preventing avoidable accidents and reporting conditions or practices that pose a safety hazard or threaten the environment.

To ensure that the above principles are implemented effectively the company will:

a) Prohibit the use of alcohol during or before work activities.
b) Prohibit the use of narcotics or other substances which can impair faculties at all times.
c) Provide adequate sanitation facilities on site and at any worker accommodation provided for those working on the Subproject.
a) Have all personnel on site sign the Code of Conduct (6.1) confirming their agreement to comply with the CoESP and OHS standards
b) Provide copies of the Company and Codes of Conduct are translated into the appropriate language of use in the work site areas.
c) Have employees attend an induction prior to commencing work on site to ensure they are familiar with the company's commitments within the CoESP and the OHS standards.

I do hereby acknowledge that I have read the abovementioned Code of Practice and 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 CoESP and OH&S standards. I understand that any action inconsistent with this CoESP or failure to act mandated by this CoESP may result in disciplinary action.

Company name: **Insert company name**

Signature: _____

Printed Name: _____

Title: _____

Date: _____

6.1 Code of Conduct (COC)

The following Code of Conduct (COC) must be read and understood by all workers on site including any subcontractors (if required):

I, individual's name, acknowledge that adhering to the provisions as detailed in this COC and following any of the Subproject's Environmental, Social and Health (ESH) or Occupational Health and Safety (OHS) provisions is important.

The Client considers that failure to follow the COC, ESH or OHS standards, be it in an office, on a work site, office and work site surroundings, at workers' camps, in worker's homes, or the surrounding communities constitutes acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment.

I agree that while working on the Subproject I will:

1. Attend and actively participate in any induction or training required for OHS, GBV/SEA/SH and VAC as requested by my employer.
2. Will wear my personal protective equipment (PPE) at all times when required.
3. Implement any OHS requirements
4. Comply with all laws of the Solomon Islands, regulations and other requirements, including protecting the health, safety and well-being of other Contractor's worker and any other persons.
5. Not drink alcohol or use narcotics or other substances which can impair faculties and potentially cause incidents, before or during work activities.
6. Consent to a Police background check if required.
7. 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.
8. Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
9. Not engage in sexual harassment—for instance, making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct, of a sexual nature, including subtle acts of such behavior (e.g., looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; giving personal gifts; making comments about somebody's sex life; etc.).
10. Not engage in sexual favors—for instance, making promises or favorable treatment dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.
11. Not participate in sexual contact or activity with children (persons 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.

12. Unless there is the full consent 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, such sexual activity is considered “non-consensual” within the scope of this COC.
13. Report to my manager any suspected or actual GBV/SEA/SH or VAC by a fellow worker, whether employed by my company or not, or any breaches of this COC.

With regard to children under the age of 18:

14. Wherever possible, ensure that another adult is present when in the proximity of children.
15. Not invite unaccompanied children unrelated to my family into my home, or the works site unless they are at immediate risk of injury or in physical danger.
16. Not use any computers, mobile phones, video and digital cameras or any other medium to exploit or harass children or to access child pornography.
17. Refrain from physical punishment or discipline of children.
18. 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.
19. 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.

Sanctions

I understand that if I breach this COC, my employer will take disciplinary action which could include:

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

I do hereby acknowledge that I have read the foregoing Code of Conduct, have attended the induction training, I understand my role and responsibilities to support the Subproject’s CoESP, OHS, GBV/SEA/SH, VAC and any other E&S conditions determined by the Subproject or the World Bank. I understand that any action inconsistent with this COC may result in disciplinary action and may affect my ongoing employment.

- **I have read and understand the contents and of the COC and my responsibilities**

- **I have attended the induction training and understand my responsibilities with regards to OHS, GBV/SEA/SH and VAC**

Signature:

Printed Name:

Date:

Annex 1. Grievance Redress Mechanism (GRM)

The purpose of the GRM is to address and record any complaints that may arise during the implementation of the contract. The GRM works within existing legal and cultural frameworks.

The key objectives of the GRM are:

- Settle the grievances through consultation including informing stakeholders of solutions.
- Forward any unresolved cases to the relevant authority.
- Record, categorize and prioritize the grievances.

Potential construction grievances, which are minor and site-specific, could be easily resolved on-site by the Contractor's Site Supervisor (CSS) or the PMU ESHS&CE Officer. They usually revolve around nuisances generated during construction such as traffic, obstruction of access, noise, dust, vibration, workers' dispute's etc. On-site grievances that are easily resolved still need to be communicated to the PMU ESHS&CE Officer for recording, including how the dispute came about and how it was resolved. However, some complaints are likely to be unresolved on site. The CSS shall inform the PMU ESHS&CE Officer and formal GRM will be activated.

The CSS or PMU ESHS&CE Officer will request the complainant to fill out the grievance form or give details to the PMU ESHS&CE Officer in person, by phone or email. The PMU ESHS&CE Officer will note the date, time, name and contact details of the complainant, and the nature of the complaint in the Complaints Register. The PMU ESHS&CE Officer will inform the complainant of the formal receipt of the complaint utilizing a standard response letter and a timeframe for a response.

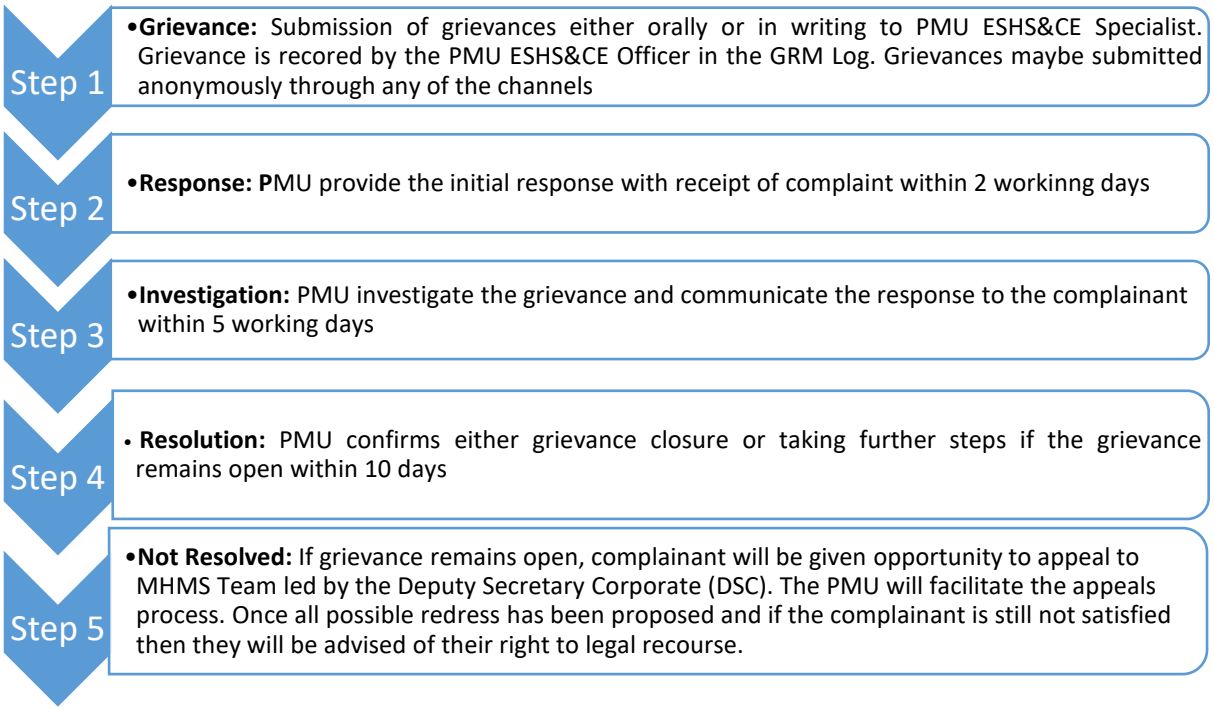
The PMU ESHS&CE Officer will endeavour to address the issue with direct dialog with the complainant in the first stage of the GRM. If the PMU ESHS&CE Officer is not able to resolve the complaint to the satisfaction of the affected person(s), it will then be forwarded to the PMU Project Manager (PM). The PMU PM and ESHS&CE Officer will develop a Plan of Action (POA) to resolve the issue and communicate this back to the complainant. At all stages, the complainant must be kept informed about the course of action being taken within a period of five days from the date that the complaint was received. If it is a land related issue, the PMU PM will inform the MHMS to communicate with MLHS to provide relevant documents to develop best resolution.

If the complaint is not resolved by the PMU PM to the satisfaction of the complainant, it will then be referred to the Permanent Secretary (PS) MHMS. The PS MHMS will be supported by the PMU to inform and advice. The PS MHMS is required to address the concern within 10 days. The PMU ESHS&CE Officer will draft a revised POA to resolve the issue based on the PSs' determination and take this POA to the complainant for resolution. In circumstances where measures outlined in the POA fail to satisfy the complainant, the aggrieved party is free to

take his/her grievance to the Ombudsman's Office for mediation and a decision by the Ombudsman. If the complainant does not accept any resolution at this stage, the GRM will not obstruct complainants' access to the legal system. At any time, the complainant may take the matter to the appropriate legal or judicial authority as per the laws of Solomon Islands. Complainants can also access the WB Grievance Redress System (GRS www.worldbank.org/grs).

Signs must be erected at the sites of all works providing the public with updated information and summarizing the GRM process, including contact details of the PMU ESHS&CE Officer. Anyone will be able to lodge a complaint through a number of methods (including the complaints form, in person, by telephone in either English or Solomon Islands Pidgin). The PMU must provide a GRM that makes every effort not to inhibit the lodgement of a complaint. The PMU ESHS&CE Officer, who will log the details and maintain the Complaints Register. This information will be included in PMU progress reports to the WB.

GRM process and timeframes



Gender Based Violence (GBV), Sexual Exploitation and Abuse, (SEA) Sexual Harassment (SH) and Violence against Children (VAC) Process

This process includes serious and minor incidents of Gender Based Violence (GBV)/SEA/SH and VAC and Sexual Exploitation and Abuse (SEA). Issues of minor sexual harassment on project construction sites such as lewd remarks, wolf whistling or bad language should use the normal GRM.

For incidents that are more serious the complainant must be made aware they can make a complaint directly to the MHMS Social Welfare Department (SWD) and PMU ESHS&CE Officer. The MHMS SWD may report the incident to the Police at the discretion of the complainant.

GBV/SEA/SH and VAC incidents related to a World Bank project will include the following:

- Incidents of GBV/SEA/SH and VAC perpetrated by, or upon, a person directly contracted by a World Bank project. This includes PMU staff and any direct workers and contracted workers as determined by the LMP
- Incidents of GBV/SEA/SH and VAC that have been perpetrated at a designated construction or project site funded by the World Bank
- Incidents of GBV/SEA/SH and VAC that are perpetrated by local civil works contractors and subcontractors and their staff as detailed in the LMP.

Appendix 2. Stakeholder Feedback

The consultation process used basically comprises the following; Firstly, PMU did a stakeholder review of Noro Clinic to ascertain rightful persons and entities responsible for the Clinic to consult by getting information within the MHMS (database) about names and details of relevant health workers at the management level. Next, an appointment was scheduled as a preliminary step, for a brief visit with the objective of getting relevant background information about the Clinic and its environment and also to obtain a wider range of stakeholder information and contact details within the existing social network of the Clinic. Then successive visits were arranged by PMU through a wide circulation of messages to key stakeholders through phone calls and SMS, meeting them on varied occasions and groupings. The entire process was relatively informal (deliberately meant to allow free flow of information) in that some of the discussions were made outdoor in the Subproject site vicinity and should there be a round table meeting, usually the level of discussion is pretty much informal

Community engagement utilized in the process of obtaining community views through consultation visits, site observations and incorporating them into planning of risk and impact management. A feedback mechanism was activated in that PMU's contact details were handed out to stakeholders for feed-back. This will be enhanced soon through the use of Subproject fact-sheet that is currently being developed for each Subproject. The engagement is an ongoing process and would yet to reach fulfillment which is at the Subproject's peak of implementation.

The table below shows record of some of the key feedback obtained from stakeholders through the consultation process.

Dates	Stakeholder	Stakeholder feedback
1. 20th April 2023 2. 21st April 2023 3. 5th May 2023	NORO CLINIC: 1. Noro Town Council	• So pleased to be receiving an appropriate incinerator for Noro Clinic. It will help improve waste management services for the Clinic. The clinic has been practicing inappropriate waste disposal methods for a long time which exposes staffs and patients to risk of infections. • We hope the cost of running the new incinerator would be within our means. Operation cost should be less considered than the benefit of having a proper incinerator which is unaffordable by the clinic. NTC will liaise with Clinic staffs later during operation of the incinerator to know details of its running and costs per period and work out how to raise funds to meet the cost.

		• NTC is currently working with WPG to pursue rectification of Land title for the Clinic with the Lands Commissioner. Although there has already been a positive response received from the commissioner. But the sub-project must go on, we will do our part with the land, and guarantee that there is no dispute over the land, it's a crown land. • You may create a new gate to make a new access for vehicles so that wastes from outside of the clinic such as HGH can easily be transported to the incinerator and also the contractor can use that entrance during construction to avoid congesting clinic operations at the front. • What other things you need for us to fulfill before we can have the incinerator installed, please let us know.
	HGH Management	• We are happy to have a 2nd option for incinerator and hope that it incinerates well as we experienced our incinerator not being able to burn certain types of wastes especially those with high moisture content. • Noro is a partner clinic that often runs to us for help so we would go along together very easily regarding the incinerator. • PMU should broker an MOU between HGH and Noro Clinic for the use of incinerator.
	UCSI Assembly	• UCSI is very pleased about the increasing support provided by MHMS with the help of its donor partners to help our health facilities. The Church, from the beginning, was a strong supporter and advocator for health and educational services. • We have members in Noro who will benefit from the improved waste management system that is going to be established through the introduction of a new incinerator. • HGH and Noro clinic are two major health facilities that provide much needed essential health services to communities around New Georgia, Vonavona and Rendova.
	2. Noro Township residents	• Workers must respect our female children and women when they pass by along the road. The construction would be very close to the road so they will have better view or people going past, hence we want respect from them. • Vehicle drivers must use the road responsibly, drive slowly past our residences to avoid causing too much dust. • We don't want workers to consume alcohol during weekends in the area. • We do not want excessive noise, dust and odor pollution during construction works. Any noisy work must stop before 6pm in the evening. • Appropriate measures and care must be taken in handling waste water to avoid water-logging and muddy patches beside the road during construction because it will create a breeding ground for mosquitoes. Already we have a problem with mosquitoes so help us reduce its population.

	3. Noro Clinic Staff residents	• Fume and odor emission from the current practice of open pit burning of waste is pretty much disgusting. Quickly build establish an incinerator so that emissions can be minimized or manageable. • Dogs and Cats usually spread infectious wastes such human tissues and stained bandages around the Clinic compound. They're also infested by flies which then came around in our homes and sit on our food. This is a terrible experience we had to live with. Thank you so much for the incinerator we're about to receive soon. • Most rubbish are unseen being covered by grass and bushes, but in reality, we are living amongst tones of rubbish in the area the whole time.
	4. Noro School	• We are a distant out from the proposed incinerator site, hope that its fume would not reach us. • Our children commute the road networks around here to and from school, so the construction firm must be careful when running heavy vehicles on these roads. • Vehicles must drive slowly and cautiously to avoid generating excessive dust and noise. • Workers at the site must respect our female students whom most of them often walk alone to and from school.
	5. Noro Township Church reps	• As the hospital service expands, so does the need for proper planning of the area. All parties occupying adjacent land to the hospital shall always be consulted as they too have plans for collaboration. • The sisterhood might want to maintain their portion of land hence would not allow it for access road to the incinerator. You can use the feeder road and turning in along the fence to get to the incinerator site. • The mission acknowledges the support of World Bank through MHMS to improve NORO CLINIC services for the people. • This is a community hence incoming workers for the construction must respect members of the community (health workers, Mission workers, patients and residents). Respect rules and guidelines, social norms and values of the community.