Vanuatu affordable & resilient settlements project (VARS)

Environmental and Social Impact Assessment (ESIA)

Etas Subdivision

Prepared for Government of Vanuatu
Prepared by Beca International Consultants Ltd

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Contents

Appendices

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Acronyms Glossary

Acronym	Definition
BoQ	Bill of Quantities
CERC	Contingent Emergency Response
CESMP	Contractor Environmental and Social Management Plan
CLO	Community Liaison Officer
CSP	Contractor Safety Plan
DEPC	Department of Environmental Protection and Conservation
DSC	Design and Supervision Consultant
DSS	Design and Supervision Specialist
EIA	Environmental Impact Assessment
ENSO	El Niño Southern Oscillation
EPC	Vanuatu Environmental Protection & Conservation Act
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESHG	Environmental Health and Safety Guidelines
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESO	Environment and Safety Officer
ESR	Environmental and Social Receptors
ESIRT	Environmental and Social Incident Response Toolkit
ESS	Environmental and Social Standards
GBV	Gender Based Violence
GoV	Government of Vanuatu
GRM	Grievance Redress Mechanism
HIV	Human Immuno-Deficiency Virus
MCCA	Ministry of Climate Change Adaptation
MIA	Ministry of Internal Affairs
MIPU	Ministry of Infrastructure and Public Utilities
MoLNR	Ministry of Lands and Natural Resources
OHS	Occupational Health & Safety
PICs	Pacific Island Countries
PMU	Project Management Unit
PPE	Personal Protective Equipment
SEAH	Sexual Exploitation Assault Harassment
STI	Sexually Transmitted Infections

Acronym	Definition
TMP	Traffic Management Plan
UNELCO	Producer and distributor of energy and water in Efate
UXO	Unexploded Ordinance
VARS	Vanuatu Affordable and Resilient Settlements Project
WHO	World Health Organisation
WMP	Waste Management Plan

Executive Summary

Purpose of the ESIA

This Environmental and Social Impact Assessment (ESIA) supports Subcomponent 1.1 of the Vanuatu Affordable Resilient Settlement (VARS) Project. It identifies and assesses the potential environmental and social risks, evaluates alternatives and proposes mitigation and monitoring measures for a proposed subdivision at Etas, Efate. The assessment includes ancillary infrastructure and associated facilities.

The ESIA provides a baseline overview of existing environmental and social conditions and predicts potential impacts—both qualitative and quantitative—arising from the project. It outlines measures to avoid, reduce, or remedy adverse effects. It also reviews relevant national legislation, World Bank Environmental and Social Framework (ESF) standards, and other international requirements. Institutional roles and responsibilities for environmental and social management are defined.

Project Description

The VARS project has four components: Component 1: Affordable and Resilient New Settlement Development; Component 2: Affordable and Resilient Settlement Upgrading; Component 3: Strengthening Institutional Capacity for Implementation and Sustainability, and Component 4: Contingent Emergency Response.

This ESIA assesses Subcomponent 1.1 of VARS being a 130-lot subdivision located at Etas on the island of Efate, Shefa Province, Vanuatu. The location is some 6.5 kms east of the capital Port Vila.

The site will be developed into affordable, climate-resilient residential lots with supporting infrastructure: roads, stormwater drainage, septic wastewater collection, solid waste management, and solar-powered street lighting. While the design reserves space for a community market, government precinct, and recreation area, these facilities are not part of the current development. However, associated risks have been assessed in this ESIA.

Key Findings

The project is expected to have **limited off-site environmental and social impacts**, most of which can be mitigated effectively through standard management practices.

- **Environmental impacts** are largely confined within the site boundary. Short-term impacts include increased traffic, dust, and noise, especially during peak construction phases.
- **Social impacts** are minimal due to the rural setting, low surrounding population, and absence of informal land use. However, **schoolchildren regularly pass the site**, requiring specific safety measures.
- **Temporary external impacts** may occur during off-site drainage and road junction works. These will involve brief disruptions along Etas Road and require traffic and pedestrian safety controls.

Consultation and Disclosure

An ESIA summary will be translated into Bislama and made publicly available through the Shefa Provincial council, Etas school and online through the Ministry of Lands and Natural Resources (MoLNR) website.

Hard copies of this ESIA along with other disclosable project documents will be held at MoLNR front desk and the Project Management Unit (PMU) office.

Impacts and Mitigation Measures:

The project site has been assessed for environmental and social impacts. Key findings include:

Flora and Fauna:

The site is a former plantation that has been overgrown and recently cleared. No critical habitats or endangered species were identified within the immediate project area, however; some common species and native vegetation will be affected by the development of the site.

Mitigation Measures:

- Preservation of large trees and trees of cultural significance. A total of seven banyan trees (three large trees and four smaller trees) has been preserved on the site along with at least 40 other trees of differing maturity and sizes, the latter primarily located in the escarpment area.
- Preservation of a significant green space within the subdivision (21.1% of total area as green space).
- Rehabilitation to include planting native tree species in community purpose areas around the site to offset vegetation loss.
- Implementing erosion control measures to prevent sedimentation of drains and instability.
- Requiring construction activities, in particular bulk earthworks, to be programmed to minimise habitat disturbance.

Social and Community:

The site is state-leased and unoccupied. No economic or physical displacement is anticipated. Adjacent properties are over 30 meters away.

Construction-phase risks include:

- Disruption from construction traffic on Etas Road.
- Potential safety concerns from an influx of workers, including the risk of **sexual exploitation, abuse and harassment (SEAH)**.
- Possible cultural tensions or misunderstandings between workers and local communities.
- Need to safeguard nearby schoolchildren and ensure community cohesion.

Mitigation measures include:

- Local recruitment prioritization.
- Mandatory Community Liaison Officer (CLO) to facilitate engagement and implement the Help Desk grievance mechanism.
- SEAH and HIV awareness and prevention training for all workers.
- Community health and safety plan including dust suppression, noise reduction, and road safety signage.
- Gender-inclusive employment opportunities encouraged.
- Project signage to display contact information for public inquiries.

Legal and Regulatory Compliance:

The findings of this ESIA confirms that the project complies with:

- **Vanuatu's Environmental Protection and Conservation Act**: An Environmental Permit has been applied for, with this ESIA forming the basis of the required EIA.
- **Land Subdivision Policy and Building Code**: Ensuring infrastructure and safety standards.
- **World Bank ESF**: The project aligns with seven Environmental and Social Standards, including ESS1 (Assessment and Management of Risks), ESS4 (Community Health & Safety), and ESS10 (Stakeholder Engagement).

All construction activities will proceed only after securing the necessary environmental permits and ensuring ongoing monitoring, reporting, and compliance with contractual and legal obligations.

However, the subdivision design—particularly minimum lot sizes, road widths, and frontage requirements—is not currently compliant with Sections 46 and 47 of the **Land Surveyors Regulations**. To address this, the Ministry of Lands and Natural Resources is preparing a **bespoke regulatory amendment** (proposed new Regulations 46A and 47A), which will apply exclusively to the Etas site. The amendment requires **Ministerial approval** but does **not require approval from the Council of Ministers**. This legal adjustment is necessary to ensure full compliance with Vanuatu's land development framework.

All construction activities will proceed only after securing the necessary environmental permits and formalizing the regulatory amendment, alongside ongoing monitoring, reporting, and compliance with contractual and legal obligations.

1 Introduction

1.1 Project Background

The VARS Project is a Government of Vanuatu initiative supported by the World Bank to increase access to resilient and affordable housing in urban and peri-urban areas. Subcomponent 1.1 involves the development of a new subdivision at Etas, Efate, to provide serviced residential lots for low- and middle-income households within the Greater Port Vila area.

The Etas site was identified and confirmed for the pilot subdivision through a series of World Bank-led missions between 2020 and 2022. During the Pre-Identification and Identification Missions, the Ministry of Lands and Natural Resources (MoLNR) proposed Etas as the preferred location based on key selection criteria, including land availability, legal status, proximity to Port Vila, and suitability for subdivision. The 10-hectare greenfield site—already held under lease by the Government—was the only unoccupied, state-controlled parcel of sufficient size within Greater Port Vila and was formally endorsed for project preparation during subsequent missions.

VARS is being implemented by the Ministry of Lands and Natural Resources (MoLNR), supported by the Ministry of Internal Affairs (MIA), Ministry of Infrastructure and Public Utilities (MIPU), Ministry of Climate Change Adaptation, Meteorology and Geohazards (MCCA), Port Vila City Council and the Shefa Provincial Council. The executing agency is the Ministry of Finance and Economic Management (MFEM).

1.2 Project Description

The VARS project aims to improve access to and resilience of infrastructure and services in selected settlements and strengthen relevant public institutions' systems to manage human settlement. Subcomponent 1.1 of the Vanuatu Affordable Resilient Settlements (VARS) Project involves the development of a 130-lot residential subdivision on a 10-hectare greenfield site at Etas, approximately 6.5 km east of Port Vila in Shefa Province. The subdivision is part of the Government of Vanuatu's efforts to expand access to affordable, serviced, and climate-resilient housing in peri-urban areas.

Subcomponent 1.1 is implemented in two phases:

1) **Clearing and fencing** of the site to enable site investigation and survey. The clearing and fencing activity, as minor works, was implemented under an Environmental and Social Code of Practice and Labour Management Plan (approved 04 July 2024 and 19 July 2024 respectively). The works contract was signed 10 September 2024 and works completed January 2025, with a contract variation for the ongoing grass cutting of the site.
2) **Site development** of roads, drainage, infiltration, 130 lots, parks and public spaces. The activity will be implemented under this ESIA and accompanying ESMP and CESMP.

The project site is situated in a semi-rural area, previously used as a plantation, and is held under formal lease by the Government. To the north lies the Teouma River Valley and hill country; to the south is a mix of grazing lands, former plantations, and other past uses. The site borders the sealed Efate Ring Road to the southwest and unsealed Bouffa Road to the east. Nearby developments include the Stella Mare Stage 2 subdivision, local housing clusters, a school, and small-scale agricultural gardens.

Topographically, the site is gently to moderately sloping, with a central escarpment. Until recently used for grazing, the land had become overgrown. Vegetation clearance undertaken in late 2024 has retained a number of mature trees (e.g., Whitewood, Melekwood, Nambanga) and revealed a ground cover of

herbs and shrubs. Notably, the site includes several large trees over 400 mm dbh and maintains a green, semi-natural character.

The proposed subdivision will include:

- 130 serviced residential lots,
- Internal access roads,
- Stormwater drainage and onsite detention,
- Septic-based wastewater treatment,
- Solid waste collection platforms, and
- Solar-powered Street lighting.

Designated open spaces (21.1% of total site area) have been incorporated to accommodate potential future development of a community market, government precinct, and recreational areas. These facilities, while not part of the current project scope, are treated as associated facilities for the purpose of impact assessment.

Offsite infrastructure requirements are minimal but include:

- Minor upgrades to road junctions and drainage at the site boundary,
- Connections to existing water and electricity supply networks, and
- Temporary works along Bouffa Road for construction access.

The project will use a local head contractor and local suppliers wherever feasible, with construction materials sourced from licensed suppliers on Efate. The subcontractor for power and water is intended to be the local utility provider, UNELCO, who will source certain key materials from France. Temporary construction impacts such as increased traffic, dust, and noise are expected but will be managed through standard mitigation measures.

Construction is anticipated to begin following the necessary approvals and permits, with works implemented over an estimated 18-month period. Environmental and social safeguards will be monitored throughout in accordance with national regulations and World Bank Environmental and Social Framework (ESF) standards.

In accordance with the World Bank Environmental and Social Framework (ESF), the project will implement a comprehensive Environmental and Social Management Plan (ESMP) to meet the requirements of ESS1 through ESS10. These include commitments to manage environmental risks (e.g., erosion, biodiversity loss), social risks (e.g., community health and safety, labour influx), and uphold transparency, stakeholder engagement, and grievance resolution. A Contractor's Environmental and Social Management Plan (CESMP), site-specific mitigation measures, and regular monitoring and reporting will be enforced to ensure compliance with national regulations and international safeguards.

1.3 Project Location

The project is taking place within Shefa Province in an area considered as Greater Port Vila. Port Vila had an estimated urban population of 49,034 in the 2020 Population and Housing Census within the municipal area and is growing at a rate of 1% per year[1].

Port Vila municipality has already outgrown its original urban boundaries due to substantial population growth, along with urban migration and rapid development of squatter and informal settlements. Because of the need for planning infrastructure and population growth a larger area encompassing the expanded population is increasingly used. Referred to as Greater Port Vila, this area includes the municipal urban area and the peri urban areas surrounding Port Vila.

The Project involves construction of sites and services at a proposed new settlement in Etas, outlined in white in Figure 2 below:

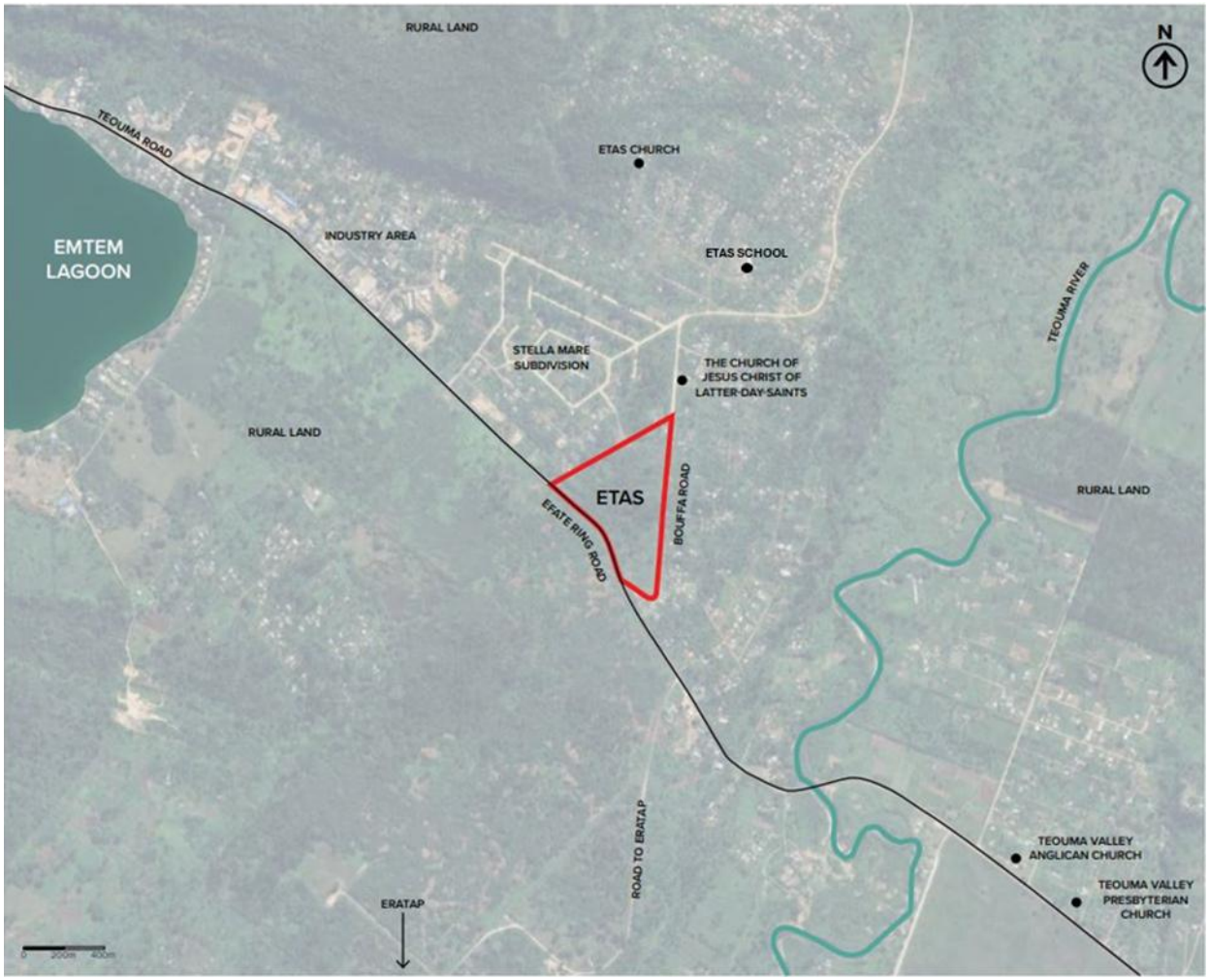

Figure 1. Location of Etas Subdivision

[1] Vanuatu National Statistics Office (2020). Population and Housing Census. Accessed from https://vbos.gov.vu/sites/default/files/2020_Vanuatu_National_Population_and_Housing_Census_-_Analytical_report_Volume_2.pdf

1.4 Objective of the ESIA

The main objective of this ESIA is to identify, predict and evaluate potential impacts of the proposed subdivision under Subcomponent 1.1 and incorporate mitigation and/or enhancement measures into its design and development options, the construction and operation phases. Specifically, the ESIA aimed to:

- Environmental Impacts: Identify and assess potential impacts on the physical and biological environment.
- Social Impacts: Identify and assess potential impacts on communities, livelihoods, and cultural heritage.
- Mitigation Measures: Propose measures to avoid, minimise, or compensate for adverse impacts.
- Residual Impacts: Discuss any impacts that remain after mitigation.

1.5 Methodology

The ESIA adopts a mixed methods methodology including i) desk-based review of relevant literature and project reports, ii) stakeholder consultation, iii) baseline surveys and iv) field visits. This mixed methods approach helped to triangulate and validate findings as well as ensure efficiencies in data collection. The impact of this project on the physical, biological and social environment was assessed against the current levels of use, site disturbance and the likely activities associated with each stage of the project including the design and initial investigation, clearance, construction, decommissioning and operation.

Literature Review. The literature review included a review of the available information on the proposed development and related literature, including legislation and national policies and publications including census and other data. Wider information was gathered from published studies and reports containing relevant environmental and other social or cultural information. A list of references is included as Appendix A – References to this report.

Project Reports. The ESIA draws on four analytical reports commissioned under the project. These reports provided critical inputs to the baseline assessment, institutional analysis, eligibility framework, and risk mitigation strategy.

The ***Market Appetite Report*** (November 2024) offered foundational insight into the feasibility of the Etas Subdivision by assessing the interest, capacity, and constraints of key market actors—including builders, developers, lenders, and service providers. It informed understanding of affordability thresholds, construction readiness, and the private sector's appetite for participation. **The *Site Tenure and Management Analysis*** (December 2024) evaluated legal and operational options for land tenure delivery, including standard lease, sublease, and community title models. This analysis shaped the ESIA's review of institutional responsibilities and supported the design of a secure and sustainable tenure approach.

The ***Eligibility Criteria Report*** (February 2025) was instrumental in defining inclusion measures, documenting socio-economic thresholds for land allocation, and prioritizing low-income and vulnerable groups—particularly women-headed households and those with informal housing backgrounds. Finally, the ***Marketing Strategy Report*** (February 2025) contributed to the assessment of stakeholder awareness, public engagement methods, and risk communication channels. It identified outreach tools suitable for the target demographic and informed the ESIA's evaluation of information dissemination, feedback mechanisms, and social risk mitigation.

Baseline Surveys. Initial technical studies were reviewed as part of the ESIA including surveys and modelling that form part of the site assessment and basis for design. These studies included: site surveys, geotechnical survey, hydrology, drainage surveys and socio-economic baseline survey of 32 households in proximity to the Etas Subdivision site.

Stakeholder Consultation. Stakeholder engagement for the Etas Subdivision has been led by the Project Management Unit (PMU) working closely with the DSS and Advisory Services, MoLNR and Shefa Province. Consultation activities began in 2023 and have been iterative and inclusive, involving local households, customary landowners, community groups, and government representatives.

On **23 November 2023**, a significant milestone was marked with a **customary ceremony at the project site**. The event included the participation of the Chairman of the Malvatumauri Council of Chiefs, the Chairman of the Vaturisu Council of Chiefs, and a representative of the Eratap Customary Landowners. The ceremony served to formally acknowledge the customary landowners and the Government's intention to proceed with the pilot subdivision. On the same day, **project signage** was installed in the three official languages of Vanuatu to demarcate the site boundary and provide contact information for the project's **Help Desk**, supporting community access to project updates and grievance redress.

In **May and June 2024** a socio-economic survey was conducted with 32 households neighbouring the site. The survey involved **in-depth consultations** and provided an opportunity to those living closest to the site to raise questions and be **made aware of the project Help Desk** (grievance mechanism).

Between **August and September 2024**, the **Policy, Legal and Marketing (PLM) Advisory Services** conducted targeted consultations with a broad range of stakeholders. These engagements focused on gauging interest and assessing feasible options for both public and private sector participation in service delivery for the Etas subdivision. These PLM-led consultations will continue in **November 2024**. As part of their mandate, PLM Advisory Services is developing a **marketing strategy and implementation plan** for the transparent allocation of subdivision lots. Once finalized, this strategy and plan will be appended to the Stakeholder Engagement Plan (SEP).

In **mid-September 2024**, the PMU conducted **community-specific consultations** with Ambrym, Buninga, and Tanna cluster groups residing in Etas. These meetings provided advance notice of upcoming site clearance activities and were also used to **register expressions of interest** from low-income residents willing to participate in ground-clearing work.

On **26 September 2024**, a **groundbreaking ceremony** was held at the site, attended by senior government officials, representatives from the Shefa Provincial Government and Port Vila Municipal Council, custom landowners, national and local chiefs, and Etas community members. The event was followed by **initial site clearing and fencing works**, which provided short-term employment opportunities to low-income residents living adjacent to the site.

Field Visits. Findings from the literature review, baseline surveys and stakeholder consultation were triangulated and verified during site visitations.

1.6 Area of Influence

The boundaries of the Etas site are established and marked on the land title. Project works will take place within the site boundary or immediately adjacent (road and drainage works, utilities etc).

Some impacts will be felt externally, primarily during construction and will need to be minimised, mitigated and managed to ensure that these do not adversely affect the local environment or population, including road users passing the site. The mitigation and management measures are included in the Environmental and Social Management Plan (ESMP), presented as Appendix B.

For the purpose of defining the area of influence, the area is assessed according to the potential extent of the social and environmental impacts beyond the site boundary. A table setting out the project's area of influence is set out in the Table 1 below.

Table 1: Area of Influence

#	Environmental or Social Issue	Area of Influence	Explanation
1.	Air Quality	100 m	Dust emissions, fugitive dust, etc. is typically observed within 100m from the construction/operation area.
2.	Noise Pollution	200 m (day)	Daytime noise is generally undetectable from 200 m from source. Night is further, up to 500m from source.
3.	Erosion deposition, sedimentation	50 m	Erosion or deposition will be limited and if present, will occur within or close to the site boundary.
4.	Traffic disruption and impacts to surrounding communities	10 m to 1 km	Site traffic poses a risk to local pedestrian and vehicular traffic. Traffic disruption may arise for short periods from construction vehicles, associated road or drainage works.

It should be noted that construction activities will take place across the 10 ha site that is some 500 metres long and 300 metres wide meaning the potentially impacting activities will often be well within the area of influence. Nonetheless a 100 m strip around the subdivision site is designated as the primary impact area and therefore the primary area of influence. This is the area that will likely be directly affected by physical disturbance due to construction activities, e.g. excavation, hauling of materials and the movement of vehicles that will generate nuisance noise and dust which may impact people residing near the site and the environment.

Beyond 100m, the general impacts from the site will be managed by the project ESMP to a minimal level so posing low to minimal risk or impacts to humans and the environment.

2 Etas Subdivision: Project Design

2.1 Design Parameters

The intention is to use the Etas design as a model for future ***affordable*** and ***resilient*** development in other parts of Port Vila and wider Vanuatu. This subdivision is therefore a pilot project for both the GoV and the World Bank. The ability to showcase higher density residential and mixed-use development, on-site sanitation and a pedestrian friendly, accessible environment including public recreational spaces is a key outcome of the project.

Achieving good connectivity between new and existing developments (particularly between Etas and the Stella Mare subdivision) is also an important consideration for the subdivision design.

In order to meet the project design objectives, the subdivision is required to take into account the social and cultural norms and values of Vanuatu and where possible incorporate cultural features and areas for community use such as parks and open spaces.

In order to provide the project's affordability objective, the subdivision aims to provide a high-quality environment while at the same time remaining affordable for low to middle income families. This requires a certain level of settlement density that can be sustainable and not adversely impacting the

environment. This objective also means limiting road widths and access lanes with a preference for footpaths for access between lots in order to maximise the number of lots and public spaces.

Using crushed limestone surfacing for minor internal roads and access lanes, footpaths and carparks will reduce development costs and at the same time increase onsite permeability for drainage, so reducing impacts and costs of stormwater management.

The development is also intended to dispose of normal stormwater volumes within the site, making use of a low-lying area (former borrow pit) at the northwest corner. On-site septic collection and treatment will also be required with the mandatory use of septic tanks and soakage fields.

To assist with sustainability, the site's mature trees are preserved where possible and all culturally significant trees (Nambanga) are to be preserved and integrated into parks and open spaces. This includes the escarpment that is too steep to build on and will be retained as a public space and a significant landscape feature of the subdivision. For trees located within private lots, decisions about retention will be made based on size, type, and potential title requirements. Figure 3 shows some of the significant trees that have been retained on site, looking towards the escarpment area.

Figure 3. Significant trees on the Etas site, looking towards the escarpment

2.2 Subdivision Layout

The overall layout for the subdivision is presented in **Error! Reference source not found.**4 below, including lot layouts and the proposed road and footpath network. Figure 5 shows the location of green spaces and trees around the subdivision.

The subdivision design primarily aims to maximise lot yield and minimise the width of the internal road corridors. The proposed subdivision layout provides for 130 residential lots with a minimum lot size of 400sqm and a maximum lot size of 648sqm. The majority of the lots range between 400 – 500sqm. Of the 130, only 10-15 will be larger than 500sqm in order to accommodate areas of steeper topography.

In general, there are 3 typical lot types within the subdivision, they comprise;

- Square lots approximately 20m x 20m
- Irregular lots approximately 22 x 18m
- Rectangular lots approximately 15m x 27m

MOVEMENT NETWORK

Figure 2. Subdivision layout showing roads

Figure 3. Subdivision layout showing green spaces

2.3 Services, Open Spaces and Recreation

Identified community and service spaces, such as the proposed Community Market, Etas Road Entrance Park, and Etas Road Hilltop Park will be reserved but not fully developed until the subdivision is sufficiently occupied and funds are available to fully develop and sustain these facilities and services. A schedule of parks and open spaces is provided in Table 2 below.

Table 2: Schedule of parks and open spaces

Parks and Open Spaces	Typology	Key Features
Etas Road Entrance Park	Active / Passive Park	The large Nambanga tree near Etas Road is a defining feature of this portion of the subdivision. Space for a pocket park has been designed around the tree to protect and celebrate its presence, creating a gateway into the subdivision. This park includes: • A large retained culturally significant tree providing extensive shade. • An open lawn area for flexible use. • Gardens around the tree and entrance, suitable for public artwork or sculpture.
Etas Road Hilltop Park	Active / Passive Park	The large sloping space adjoining Stella Mare subdivision and Etas Road presents an opportunity for a 'gateway' park. Due to the low-pressure water supply zone, residential lot development is limited, allowing for substantial public open space. Space allocated within this park includes: • A large retained culturally significant tree providing extensive shade. • Extensive open lawn areas for flexible use. • Gardens on steep slopes and around the existing tree. • Groups of trees for shade.
Escarpment Park	Passive Park / nature space	The escarpment, which forms a natural division between upper and lower Etas, provides an opportunity for passive recreation and a 'nature space' around existing mature trees. This park includes: • A perimeter path network for pedestrian circulation. • Two pathways traversing the slope for connections between upper and lower Etas. • A set of steps for direct connection for more able-bodied users. • Retained mature trees across the escarpment. • Extensive native vegetation restoration for biodiversity, slope stability, and visual amenity. • Low planting along pathways to minimize overgrown foliage.
Greenway Pocket Park	Passive Park	• A pocket park adjoining the floodway running parallel with the internal connector road. This park includes: • Large retained mature trees for shade. • A perimeter path for access and boundary delineation. • An open lawn area for flexible use. • A swale culvert for pathway crossing.
Community Market Space	Market /passive park / active park	Located at the intersection of Efate Ring Road and the main entrance into the subdivision, this space is allocated for the future

Parks and Open Spaces	Typology	Key Features
		development of a community hall and market building with sufficient area allotted for parking and recreational space.
Quarry Park	Passive Park / Stormwater	The Etas subdivision incorporates a portion of an existing quarry at the northwest corner of the site, transforming it into usable public open space. This park includes: • Minor earthworks shaping to the edge of the quarry site. • An open lawn area elevated above Efate Ring Road. • A planted drainage basin. • Gardens and trees to enclose the lawn areas and screen the quarry site.

2.4 Utilities and Infrastructure

The proposal is to supply the subdivision and each individual lot with the necessary utilities to comply with the National Land Subdivision Policy, including water supply and electricity. Above and beyond the policy, the subdivision will provide for solar street lighting. Solid waste platforms will be provided and homeowners will be responsible for the construction of septic and waste water systems.

Drainage is also planned for the subdivision to avoid flooding and increase the subdivisions' resilience.

2.4.1 Water Supply

Potable water is to be supplied to each lot per the National Land Subdivision Policy. The water supply is to be provided by UNELCO as the water utility provider. An initial water supply assessment was undertaken by UNELCO on the 30th of August 2024. The assessment noted that the Etas subdivision site is not within the current UNELCO water concession area. Therefore, prior to any construction of the water supply network, the water concession area will be extended through an addendum to the existing water concession contract. This task is underway with the Department of Water Resources working to revise the concessionary agreement with the service provider UNELCO. The Vanuatu State Law Office has already granted approval for the request to revise the agreement, which will be signed before the commencement of any construction.

The developed design as presented in this ESIA shows an illustrative water supply layout arrangement which is to be amended and confirmed by UNELCO.

The water supply layout considers the following:

- A water network extension around Efate Ring Road and Etas Road.
- A water supply network around each internal road with connections running up the internal accesses to each property.
- A low water pressure exclusion zone in the northeast of the site due to its elevation above the ring main. Any lot building platform above RL67.5m will not be able to be serviced by a water supply. The exclusion zone will limit the number and configuration of the lots in the northeast of the site as presented in the site layout plan (Figure 6).

Figure 4. Water Supply Plan

Water utilities within the subdivision will be located on the opposite side of the road to the electrical supply and lighting.

The water supply design includes:

- Fire hydrants.
- A network extension around Efate Ring Road and Etas Road.
- A low-pressure exclusion zone above RL 67.5m in the site's northeast.

2.4.2 Drainage

The site is within a 20.6 ha contributing catchment (see Figure 7).

There is some minor residential development northeast of the Etas site which contributes to the overland flows paths across Etas.

Stormwater flow will be managed through a network of kerbs and grass swales leading to an infiltration pond in the northwest corner of the site. The infiltration basin will be located within a former roadside borrow pit (quarry) that will be adapted for the purpose of stormwater infiltration. Investigations and modelling demonstrate that the enhanced pond will be sufficient to manage regular and heavy rainfall events. Swales are used instead of piped networks to reduce blockages and maintenance requirements. Piped stormwater systems have been limited to specific road crossings. Downstream discharge locations north and west of Efate Ring Road will continue to be used as overflow points and secondary flow paths; flows are expected to be similar to pre-development levels.

Roof runoff from the subdivision is assumed to be managed via on-site soakage pits. As it is common practice in Vanuatu to collect rainwater from roofs for domestic use, it is likely that many houses will use

water tanks. This limits the size (and cost) of drainage infrastructure to only be required for new road impervious increase and any other areas of hardstanding or impermeable ground in the settlement.

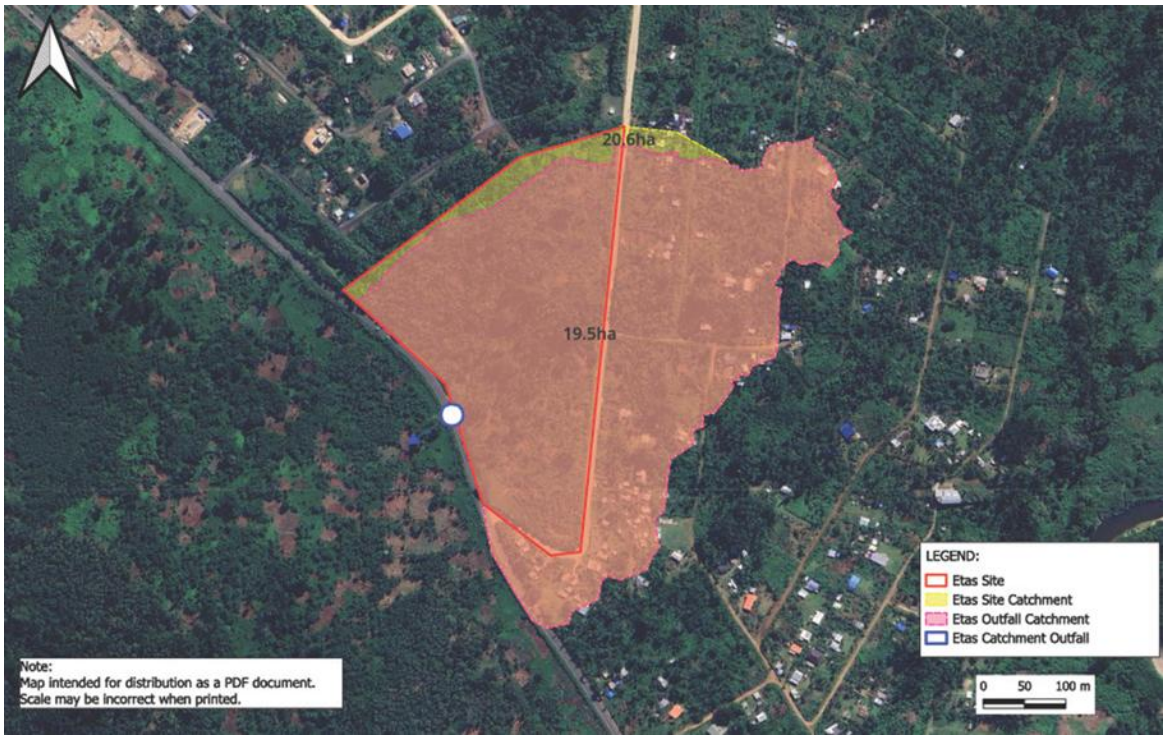

Figure 5. Map showing catchment

Stormwater runoff is managed onsite via soakage pits, limiting drainage infrastructure to roads and other impermeable areas. Permeable surface will be used for access roads, footpaths and car parks with the quarry in north-western corner of the site used as a soakaway for excess flows. Figure 8 below shows the location of the quarry and drainage plans are presented as Figure 9 on the following page.

Figure 6. Quarry (in foreground of photo)

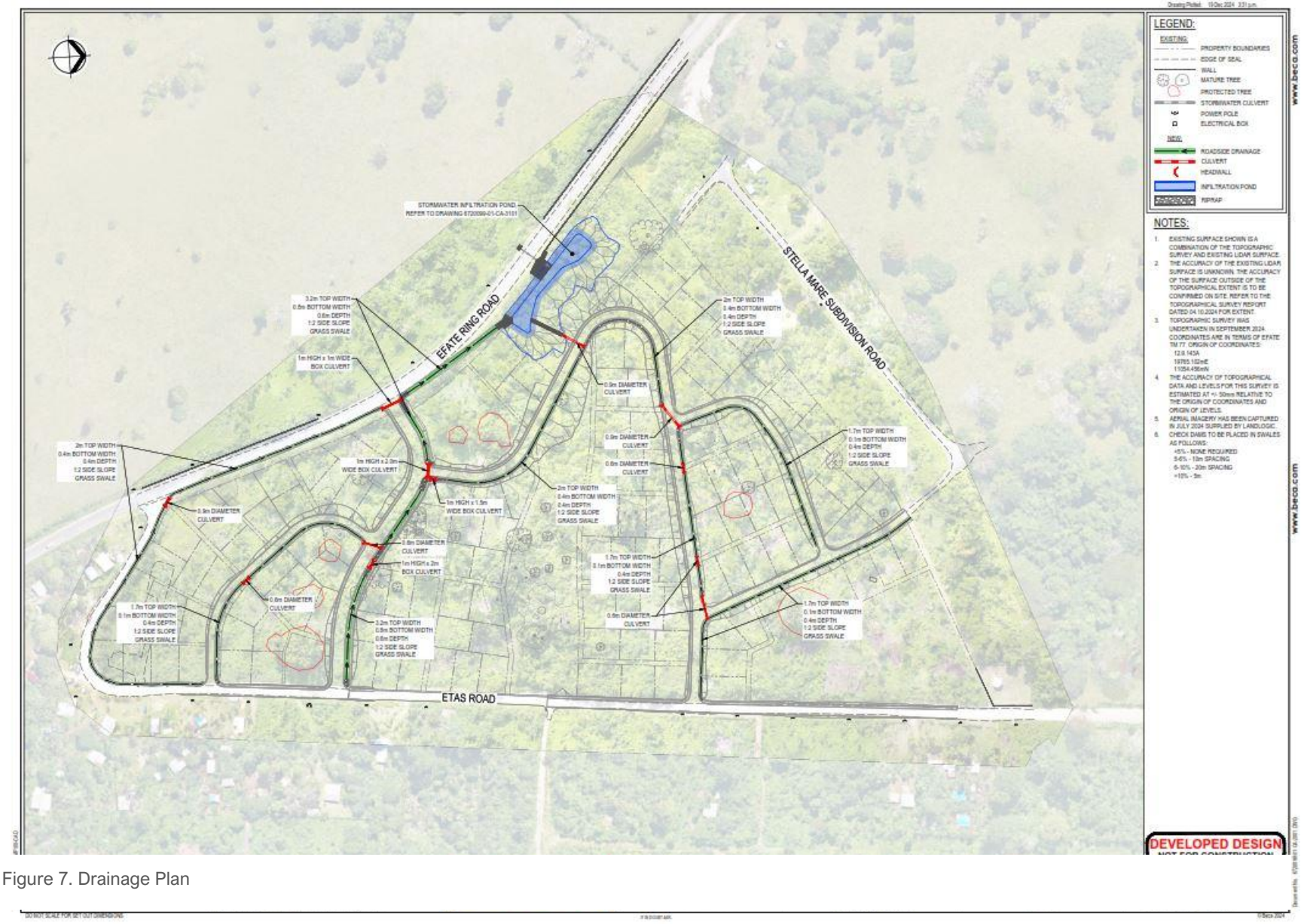

Figure 7. Drainage Plan

2.4.3 Sanitation

Onsite septic and soakaway systems are planned for each 400 m² - 500m² lot, compliant with the Vanuatu Building Code. Lots with slopes above 10% may require adjustments to accommodate soakaways.

2.4.4 Electrical Supply

The subdivision will provide for electrical supply to each individual lot in accordance with the National Land Subdivision Policy.

The subdivision is less than one kilometre away from the round island electricity main operated by UNELCO under concession. This means that the subdivision can be connected to the electricity main.

Similar to the water supply, the design for the electrical will be provided by UNELCO (mandatory requirement). UNELCO will also organise the construction of the electrical supply through a UNELCO approved contractor.

A meeting with UNELCO on the 22th October 2024 identified the following key considerations for the electrical supply:

- There is an existing overhead electrical supply along Etas Road that can be used to supply the subdivision.
- A new PCB (Polychlorinated Biphenyls)-free transformer will be required to supply the subdivision from the overhead supply.
- The transformer cables and other equipment has a 12 month procurement period as it has to be sourced from Europe. This is unavoidable as the equipment must be fully compatible with the existing supply system.

The electrical supply design is to be undertaken by UNELCO and is to adhere to the UNELCO design criteria and is to provide electrical supply to each individual lot in accordance with the National Land Subdivision Policy.

2.4.5 Lighting

The lighting layout design is to be undertaken in accordance with Australian New Zealand Standard Lighting Roads and Public Spaces AS/NSS 1158.3.1.

The luminaire and street light design criteria will be in accordance with the streetlight ownership and maintenance requirements of the subdivision. The proposed streetlight ownership and maintenance responsibilities will lie with the Shefa Provincial Government Council and will be formally confirmed prior to construction. The ownership, operation and maintenance of the streetlighting must be confirmed as part of the operation of the subdivision to ensure the streetlights remain in service.

The design is intended to provide guidance and safety for residents and use for mixed vehicle and pedestrian road use. The streetlights are located on the footpath side of the road. The indicative street light layout for the internal streets is lights based on a 50 metre spacing on posts.

2.5 Sanitation & Waste Management

The scope of the sanitation design is to provide a sanitation system for the collection and safe disposal of sewage and liquid waste for each individual lot in accordance with the National Land Subdivision

Policy. The scope of the wastewater solution is covered in the VARS Settlements and Etas Sanitation Assessment, dated 8th November 2024.

The project sanitation scope covered by the Sanitation Assessment considers the technical viability of smaller onsite household-based sceptic and soakaway facilities, considering a standard lot size of 400 square meters.

The summary of the Etas sanitation assessment is as follows:

A 400 square metre lot complies with the National Land Subdivision Policy requirement of a maximum 15 dwelling units per hectare, when averaged across the entire 10ha site. Some areas of the site do not comply with the with maximum 15 dwelling units per hectare site for onsite wastewater treatment and disposal when assessed against each individual hectare. This assessment considers Etas as a High-Density Residential Area.

Soakage tests undertaken on Etas indicate infiltration rates of 0.8m/hr and up to14m/hr. There is sufficient infiltration capacity to service a standalone sanitation soakaway for each 400m2 size lot, considering a 6 person household and a conservative 0.03 m/hr infiltration rate.

A typical lot layout has been assessed to demonstrate that there is sufficient space within a 400m2 size lot to locate a sanitation septic system with a soakaway. This is applicable on flat or moderately sloped lots of up to 10% grade which are anticipated to not require or have minimal benching.

Lots which are located on slopes greater than 10% may require benching or retaining. For these lots it is not achievable to locate the soakaways away from cut or fill embankments. The depth of the soakage for these sites will need to be increased to sit beneath existing natural ground level. Minimum soak hole setback and depth requirements will be confirmed through geotechnical analysis at detailed design in coordination with the final lot layout and site grading.

Maintenance access has been provided to each lot for the provision of sludge removal from septic tanks. A maximum distance of 35m to each lot is currently provided. Hydro excavation trucks will be required to park adjacent to pedestrian access or reverse down a vehicle access and use a hydro excavation hose to undertake maintenance. The final lot layout and maintenance access will be confirmed at detailed design.

Vanuatu Building Code

The Vanuatu National Building Code NF 6.1.1 stipulates that sanitation facilities must ensure:

a. no discharge of wastewater of any kind to surface water;

b. no discharge to a soil surface that is less than 2.5 metres above maximum groundwater level;

c. the maximum design loading to a soil surface shall not exceed;

- 35mm per day for septic tank (primary) effluent.
- 70mm per day for secondary or better treated effluent.

d. the effluent distribution system shall achieve a uniform application at or less than the maximum design loading rate.

Also stipulated in the Vanuatu National Building Code (page DF-31), a minimum horizontal distance of 15m (absorption trenches) or 30m (soak pits) is required between these and potable water sources.

The setback distances cited in the Vanuatu National Building Code are more conservative than the World Health Organisation (WHO) recommended minimum safe distances between a soil absorption system and a potable ground water source of:

- 2 metres vertical separation above the maximum ground water level, or

- 15 metres horizontal separation if located within the groundwater, at a maximum wastewater loading rate to the soil absorption system of 50 mm/day.

These minimum safe distances based on global evidence of pathogen survival times and migration rates in unsaturated and saturated soil are conservative in the context of the Etas subdivision due to:

- the likely reduction in the survival time of pathogens due to the high ambient temperatures of the soil and the high exposure to sun, air and evaporation; and
- the likely reduction in the migration of pathogens due to the low lateral groundwater velocities, high temperature and aerobic state of the groundwater.

Soil absorption systems are effective in neutralising pathogens and the attenuating phosphorous (within the minimum safe distances specified above).

The lot sizes and requirements for building on the subdivision means that the requirements of the Vanuatu Building Code will be met. These requirements are more stringent than the equivalent requirements of the WHO. Therefore, it is anticipated that the risks from sanitation treatment and soakage on individual lots will be low. These risks are further reduced in that there are no sources of bore water on or adjacent to the site.

Solid Waste

Waste collection platforms are included in the subdivision design and solid waste will be collected and disposed of by a licensed waste management company on contract to Shefa Provincial Government Council.

2.6 Construction Materials & Contracting

The project will use a local head contractor and local suppliers wherever feasible, with construction materials sourced from licensed suppliers on Efate. New transformer for Etas will not contain PCBs (Polychlorinated Biphenyls) and this will be stipulated in the sub-contract for power and water.

2.7 Roading Infrastructure

2.7.1 Internal Roading and Access

The road design vertical and horizontal alignments have sought to minimise the earthworks cut and fill volume, while seeking to comply with the Vanuatu Design Guide geometrics design criteria. The geometrics cannot fully comply with the Vanuatu Design Guide due to the existing site grades so some minor departures from the geometric design criteria is required. There is opportunity to further depart from the Vanuatu Design Guide to minimise the cut and fill volumes and more closely match the existing site grades where appropriate.

The road design hierarchy and associated cross section widths have been guided by the Vanuatu Road Design Guide. Due to the site constraints, focus on pedestrian and reduced vehicle movements and maximised lot yield the road design cross sections have departed from the Vanuatu Road Design Guide and National Land Subdivision Policy. The approval for departure from these standards is to be confirmed through the review process of the Vanuatu Land Management Planning Committee (LMPC).

The design intends that access to each lot will primarily be through pedestrian movements, and that vehicle access will not be provided to each lot, although it is achievable to the majority of lots. The specific design of access to each individual lot either through pedestrian or vehicles is not part of the project scope and will be undertaken by the lot purchaser.

2.7.2 External Roading Linkages

The project design will include the upgrading of existing roads around the site. This will take place when developing new junctions from the subdivision to the existing roads. The junctions will be at the Efate Ring Road and the Etas Road.

2.8 Project Phases

Project phases are presented in accordance with the discreet requirements for environmental and social safeguards management of the Etas subdivision project component.

Project Phase	Description	Key Activities
Preliminary Works and Design	Includes ESIA, engineering design, and preparation of tender documents. Determines layout and technical specs for services and lots.	• Topographic and geotechnical surveys • Vegetation clearance (with preservation) • Design confirmation • Design amendments to meet ESIA or other requirements • Tender document preparation
Preconstruction	Preparation by the selected contractor before construction begins, including safeguards planning.	• Site induction for contractor • Materials sources/landfill sites and disposal sites to be pre-approved by local authorities • Confirm plant/equipment and key personnel • Preparation & Approval of CESMP
Construction	Main physical works phase expected to last up to 18 months, involving earthworks, roads, drainage, utilities, and landscaping. Will involve the mobilization of the contractor, establishment of site offices, works yard and storage facilities.	• Earthworks (excavation, cut and fill, erosion control) • Drainage systems (basins, culverts) • Roads (grading, surfacing, access/ junction improvements) • Utilities (water and electricity installation) • Facilities (lighting, footpaths/ramps, parks, public spaces, landscaping)

The engineering design determines the location of the proposed subdivision services, facilities and lots. Figure 10 shows the indicative cut and fill plan for the site.

Figure 10: Indicative cut and fill plan for the site

3 Analysis of Alternatives

3.1 Overview

The Etas Subdivision design and implementation process considered several strategic, technical, and operational alternatives throughout the planning cycle. These alternatives were evaluated for their social and environmental impact, cost-effectiveness, equity, sustainability, and alignment with the project's development objectives and safeguards. This section outlines the major alternatives considered in project design, lot pricing, tenure arrangements, service provision (particularly wastewater), and delivery mechanisms, and explains the rationale for the preferred options.

3.2 Dates for Project Identification

- June 2020 – Virtual Pre-Identification Mission
    - Conducted by the World Bank team, led by Ms. Artessa Saldivar-Sali.
    - The Aide Memoire (AM) notes that a 10-hectare site at Etas was acquired by the Government of Vanuatu (GoV) for the greenfield site and services.
- November 2020 – Virtual Identification Mission
    - Conducted by the World Bank team, led by Ms. Artessa Saldivar-Sali.
    - The AM states that MoLNR identified the 10-hectare site based on key selection criteria.
- September – October 2021 – Preparation Mission
    - Conducted by the World Bank team, led by Ms. Artessa Saldivar-Sali.
    - Annex 2 of the AM confirms that MoLNR identified the 10-hectare site based on key selection criteria.
- July 2022 Project Launch and Implementation Support Mission
    - Conducted by the World Bank team, led by Mr Artessa Saldivar-Sali
    - AM Implementation Progress notes that options for concept plans for the Etas subdivision have been prepared.

3.3 Alternative Project Sites

From the project's pre-identification phase through to its launch, the 10-hectare greenfield site at Etas was the only site considered for the VARS pilot subdivision. This is because it is the only parcel of suitably large, unoccupied state-controlled land available to the Government of Vanuatu within Greater Port Vila. Although no formal evaluation of alternative sites appears to have been undertaken, multiple alternatives relating to site layout, subdivision design, servicing technologies, and implementation approaches have been thoroughly examined as part of project preparation.

The "no project" scenario would eliminate the opportunity to pilot an affordable, serviced subdivision in proximity to Port Vila—thereby delaying or preventing the development of replicable models for planned urban expansion and inclusive housing.

3.4 Design Alternatives

The original subdivision layout followed a conventional grid-style design guided by the National Land Subdivision Policy 2019. However, this approach was later reassessed to better accommodate affordability, resilience, and community-oriented living. A revised design philosophy was endorsed, drawing on AMCORD principles (Australian Model Code for Residential Development), with key elements including:

- A reduction in paved roads and emphasis on pedestrian pathways,
- Grouped lot layouts that mirror traditional Vanuatu community structures,
- Integrated service centres and pocket parks,
- Use of solar panels at the household level to reduce grid dependency,
- Environmental sensitivity, including improved drainage design and septic management.

This holistic, **community-focused design** was selected over the more formal, infrastructure-intensive model due to its alignment with local social practices, cost-saving potential, and climate resilience goals

Lot Size and Septic System Options

A central design challenge was determining whether individual lots of 400m² were sufficient to support standalone septic tanks. The PAD had originally assumed communal septic systems would be required due to potential soil absorption limitations. However, ongoing DSS investigations in late 2024 suggested individual tanks may be feasible, which would reduce infrastructure complexity and enhance self-sufficiency.

Septic System Alternatives considered

- **Communal Septic Systems**: Higher initial cost, increased complexity, risk of shared maintenance failures.
- **Individual Septic Systems** (Preferred): Simpler operation, lower shared risks, but places responsibility on individual owners.

The Project Steering Committee (PSC) approved design retains the 400m² lot size with individual septic options. This balances yield, affordability, and infrastructure viability.

Tenure Models

Three legal tenure models were assessed for the subdivision:

- **Standard Lease** (Preferred): Individual derivative leases; simple to manage, supports direct ownership.
- **Sublease**: Retains MoLNR ownership; risk of arrears and administrative complexity.
- **Community Title**: Complex management, unfamiliar legal precedent in Vanuatu, and high institutional risk.

The **Standard Derivate Lease model** was adopted by the PSC as it minimizes institutional risk while supporting sustainability, long-term ownership, and replicability for future subdivisions.

Lot Pricing Strategies

Four models were analysed:

- **Cost-Recovery Pricing**: Based on PAD infrastructure cost estimates (up to VT2.13M per lot), but exceeds market affordability.

- **Uniform Market-Based Pricing** (Preferred): VT1.71M, based on independent valuation, fairer and easier to administer.
- **Tiered Market Pricing**: Reflects location and lot-specific attributes, but administratively complex.
- **Affordability-Based Pricing**: Income-adjusted pricing, but risks deviating from fair market principles.

The decision to adopt a **uniform market-based pricing approach** supports transparency, ease of communication, and administrative efficiency, while enabling broader access for low- and middle-income households.

Eligibility Criteria Framework

Eligibility alternatives were assessed to determine the optimal framework for social equity and inclusion:

- Original criteria were revised to a streamlined four-point system (citizenship, age, no land ownership, and income limits).
- **Three priority groups** were introduced: (1) Single women/widows, (2) women applicants, and (3) Port Vila/South Efate residents.
- The final eligibility framework balances fairness, inclusion, and feasibility, and includes public lottery, verification audits, and appeals processes.

Marketing and Delivery Mechanism

Alternatives included:

- Centralized government-led marketing,
- Outsourced delivery via a licensed real estate agent (Preferred),
- Hybrid arrangements.

The real estate agent model was adopted to manage the application process, outreach, and sales functions under a clear Terms of Reference. This leverages private sector expertise and ensures transparency, stakeholder confidence, and timeliness in lot allocation.

Environmental and Social Considerations in Alternative Analysis

Each of the alternatives evaluated carried potential environmental and social implications. Key considerations included:

- **Communal vs. individual septic systems** affect land use intensity and downstream water quality.
- **Lot pricing models** impact affordability and potential social exclusion.
- **Design configurations** influence walkability, social cohesion, and tree retention.
- **Tenure arrangements** affect long-term sustainability, dispute risks, and institutional burden.

Where relevant, mitigation measures have been embedded into the project's design, including:

- Retention of culturally significant trees,
- Community access to green spaces,
- Grievance redress procedures,
- Flexible implementation options that allow for policy adjustment over time.

4 Legal and Institutional Framework

4.1 Overview

The Government of Vanuatu (GoV) maintains a well-developed environmental and social policy and legal framework. This framework is grounded in both statutory law and customary governance practices and is supported by a range of national institutions responsible for environmental protection, land use planning, health, and labor. The VARS project will comply with both GoV legislation and the World Bank's Environmental and Social Framework (ESF), applying the more stringent requirements in case of divergence.

This section outlines:

- Relevant national laws, policies, and plans,
- Institutional roles and responsibilities,
- A comparison with the World Bank's ESS1–10, and
- Identified gaps and actions to bridge them.

4.2 National Policy Context

Several key national policy documents guide Vanuatu's sustainable development and risk governance:

Policy	Relevance to VARS
Vanuatu National Sustainable Development Plan 2016–2030	Anchors the project within national development priorities, especially resilience, environment, and housing.
National Environment Policy and Implementation Plan (NEPIP) 2016–2030	Directs environmental protection strategies and inter-sector coordination.
Land Use Planning Policy (2013)	Frames land use decisions; VARS aligns with its principles of *kastom*, equity, and sustainable development.
Land Subdivision Policy (2019)	Ensures socially and environmentally sustainable land subdivision practices.
National Energy Roadmap (NERM) 2016–2030	Guides renewable energy and utility access, supporting resilient infrastructure design.

4.3 Vanuatu Legal and Regulatory Instruments

Vanuatu's legal system regulates land development and environmental and social impacts through a combination of permitting requirements, statutory standards, and institutional oversight. This legal framework underpins environmental protection, infrastructure safety, and the orderly growth of settlements. However, the VARS project—particularly the Etas subdivision—presents a **pilot model** that challenges conventional development norms, and must navigate regulatory misalignments as part of broader reform.

The VARS Project Appraisal Document (PAD) explicitly supports the use of innovative, cost-effective approaches to urban development, emphasizing compact and climate-resilient layouts. It highlights a "key design principle" as the use of **higher-density residential parcels**—averaging 15 cluster or attached units per hectare—or **approximately 400 m² per individual plot**, compared to the **conventional minimum of 1,000 m²**. Historically, this larger minimum was based on the absence of water-borne sewerage systems in Port Vila and its peri-urban areas, where large plots were considered necessary for on-site effluent disposal.

However, **comprehensive geotechnical and hydrogeological assessments conducted for the Etas site** confirm that smaller plots—down to 390 m²—can safely accommodate individual septic systems. Based on this evidence, the VARS Project Steering Committee formally approved the use of septic tanks on lots between 390 and 420 m² on **8 December 2024**, clearing the path for a regulatory amendment.

While the Etas design aligns with the **National Land Subdivision Policy (NLSP)** introduced in 2019, the policy itself is not yet fully aligned with older statutory instruments—particularly the **Land Surveyors Regulations**, which are made under the **Land Surveyors Act**. These regulations (notably, Sections 46 and 47) prescribe subdivision standards that **conflict with the approved Etas layout**, specifically:

- A **minimum lot size** of 1,000 m²,
- A **minimum road frontage** of 20 meters,
- **Minimum road widths** of 15m for primary roads, 10m for secondary, and 8m for residential access roads.

In contrast, the Etas design includes:

- **Residential lots ranging from 390–420 m²**,
- **Roads as narrow as 3–7 meters**,
- **Some lots accessed via shared lanes without direct road frontage**.

To enable implementation of the Etas subdivision, a **site-specific regulatory amendment** is being prepared. This amendment will create **Regulations 46A and 47A**, applying exclusively to the Etas site and granting exemptions from the incompatible provisions of Regulations 46 and 47. Key details of the amendment process include:

- It is a **regulatory** (not legislative) change, requiring **Ministerial approval** from the Minister of Lands and Natural Resources but not approval from the Council of Ministers (COM),
- Drafting instructions have been prepared and submitted to the **State Law Office**,
- The amendment is a **prerequisite for formal subdivision approval** and is aligned with the government's intent to use Etas as a **proof-of-concept** for high-density, affordable housing development on state land.

This approach is not without precedent. For example, the **Vanuatu National Housing Corporation (NHC)** previously subdivided state land at Freshwater to create **172 plots**, many of which were **smaller than 400 m²**. These lots supported affordable housing development and remain an important precedent for demonstrating that smaller, serviced residential plots can be viable within Vanuatu's context.

In sum, the proposed amendment to the Land Surveyors Regulations reflects both a practical necessity and a strategic policy shift. It provides the legal flexibility needed to implement a nationally significant pilot, while preserving the integrity of the regulatory framework through a carefully scoped, site-specific exception.

Table 3 below outlines the relevant Vanuatu legislation and safeguards functions:

Table 3. Relevant national laws and regulations

Law / Regulation	Safeguard Function	Applicability to VARS
Environmental Protection and Conservation Act & EIA Regulations	Mandates permit, EIA process, and ESMPs	Applies to subdivision and drainage works
Waste Management Act (2014) & Regulation No. 15 of 2018	Waste classification and disposal standards	Requires compliance for construction waste
Water Resources Management Act (2002)	Protects water use and discharge	Applicable for construction-related water use
Public Health Act (1994)	Enforces sanitation and public health	Applies to infrastructure, especially housing
Building Code (2000)	Construction standards, fire, sanitation	Applies to all built elements of the subdivision
Physical Planning Act (1986)	Land development control	Required permits for subdivision and housing
Employment Act, Workmen's Compensation, OH&S Acts	Labour and safety protections	Relevant for all contracted labour
Land Lease and Acquisition Acts	Regulate land title, transfer, and access	Project is on state-leased land; no land acquisition required
Land Surveyors Act and Regulations	Defines lot sizes, frontage, road width standards	Etas design is non-compliant with Regulations 46 & 47. Bespoke amendments (46A, 47A) are being developed to legalize project parameters.
Public Roads Act 2013	Ensures road design and construction meet regulations.	Provides for formal gazetting of subdivision roads.

4.4 Institutional Responsibilities

Table 4. Institutional Responsibilities

Agency	Role in VARS
Department of Environmental Protection and Conservation (DEPC)	Lead on environmental permitting, EIA oversight
Ministry of Lands and Natural Resources (MoLNR)	Project proponent; safeguards and land management
Public Works Department (PWD)	Road and infrastructure oversight
Shefa Provincial Government	Local permitting and coordination
Department of Water Resources, Geology & Mines, Health	Water resource, quarry/excavation approvals

4.5 Alignment with ESS

The VARS project has screened for the relevance of the World Bank's ten ESSs. Seven ESSs are applicable. Table 5 compares the project-applicable ESSs to Vanuatu's legal framework and identifies gaps and mitigation actions.

Table 5. Comparative Analysis of ESS and National Systems

ESS	Relevant National Law	Gaps Identified	Planned Measures
ESS1: Assessment and Management of Environmental and Social Risks	EPC Act, EIA Regulations	Varying enforcement and capacity	ESIA and ESMP prepared; PMU to lead safeguards with WB oversight
ESS2: Labour and Working Conditions	Employment Act, OH&S Act	Limited enforcement of worker safety standards	Labour Management Procedures (LMP) and site supervision
ESS3: Resource Efficiency and Pollution	Waste, Quarry, Water Acts	No formal requirements for resource efficiency	Guidance included in ESMP; CESMP to address mitigation
ESS4: Community Health and Safety	Public Health Act, Roads Act	Limited scope for traffic safety, SEAH risks	OHS Plan, SEAH training, road safety signage included
ESS5: Land Acquisition and Involuntary Resettlement	Land Acquisition Act, Lease Act	No comprehensive framework for informal occupants	Land Due Diligence, exclusion of physical/economic displacement
ESS6: Biodiversity and Living Resources	EPC Act	Limited habitat screening standards	Habitat assessment included in ESIA
ESS8: Cultural Heritage	Preservation of Sites and Artefacts Act	No formal chance-find procedure	ESMP includes chance-find protocol
ESS10: Stakeholder Engagement	Implicit in DEPC and sectoral laws	No legal basis for structured engagement	SEP, Help Desk, and CLO to ensure inclusive engagement

4.6 Table of Required Permits and Approvals

Table 6 below summarises the required permits and approvals for the Etas subdivision works.

Table 6. Summary of permits and approval required for project

Legislation	Type of Permit	Activity covered	Responsible Party
EPC Act and EIA Regulations	Environmental Permit	Design and establishment of the subdivision	Design and Supervision Consultant (DSC) with support from PMU
Quarry Act	Quarry Permits Landscape Permit	Supply of construction aggregates Bulk earthworks	Contractor DSS
Public Roads Act 2013	Road Works Permit	Construction of new roads and changes to intersections	PMU
Physical Planning Act No. 22 of 1986.	SPGC Land Subdivision Permit and Planning Permission	Land Subdivision and Development	PMU
Physical Planning Act No. 22 of 1986.	LMPC Approval for Rural Subdivision	Rural Land Subdivision and Development	PMU

Legislation	Type of Permit	Activity covered	Responsible Party
Vanuatu Land Subdivision Policy			
Physical Planning Act No. 22 of 1986.	Construction Permit SPGC	Construction of dwellings and other buildings	Individual owners, public sector agencies.

4.7 Summary

Vanuatu's policy and legal framework is generally broadly aligned with the World Bank's ESS Framework. However, several gaps exist in terms of enforcement capacity, stakeholder engagement, informal land use protections, and specific mitigation protocols (e.g., SEAH, traffic safety). These will be addressed through project-specific instruments, including:

- A robust ESIA and ESMP
- Preparation, approval, implementation and monitoring of the CESMP and sub-plans including, waste management, traffic management, works camp management (if required), potentially a quarry plan and other sub-plans as required.
- A tailored Labour Management Procedure (LMP),
- A Stakeholder Engagement Plan (SEP) and operational Grievance Redress Mechanism (GRM),
- The recruitment of safeguards specialists and key contractor personnel to support monitoring and implementation.

This alignment ensures that the Etas Subdivision under VARS will meet both national regulatory obligations and World Bank ESS requirements, safeguarding environmental and social outcomes throughout the project lifecycle.

4.8 World Bank Environmental, Health and Safety Guidelines (EHS) Guidelines

The World Bank EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice. They are intended to be used together with relevant industry sector EHS Guidelines. The applicability of the EHS Guidelines should be tailored to the hazards and risks established for each project on the basis of the results of an environmental assessment in which site-specific variables are taken into account.

The following EHS guidelines are relevant to the project and have been used to guide the development of the ESMF and will also be reflected in the site-specific ESIA/ESMPs, as well as Contractor's Safety Plan.

- **General EHS Guidelines: Environmental:** provides methods and approaches for the management of wastewater, noise and dust during construction, water conservation and solid waste management.
- **General EHS Guidelines: Occupational Health and Safety (OHS)**: The fundamental premise for OHS under the EHS Guidelines is that "Employers and supervisors are obliged to implement all reasonable precautions to protect the health and safety of workers" and that "Companies should hire contractors that have the technical capability to manage the occupational health and safety issues of

their employee". The EHS Guidelines also require that prevention and control measures to minimise occupational hazards should be based on comprehensive job safety analyses (JSA).

- **General EHS Guidelines: Construction and Demolition**: provides guidance for specific community and occupational health and safety and environmental issues relating to new buildings or building renovation.
- **General EHS Guidelines: Community Health and Safety:** provides approaches and methods for drinking water quality, life and fire safety for building design and structural design of buildings. Some guidance may be useful for new building construction and renovation, relating to traffic safety (transport of materials) and communicable disease control from imported labour.

4.9 World Bank's Environmental and Social Incident Response Toolkit (ESIRT)

Borrowers need to report to the Bank any incident or accident related to or having an impact on the Bank-financed project, together with the actions they are to taking to address it. The World Bank's Environmental and Social Incident Response Toolkit (ESIRT) is a procedure set up to investigate and report on certain environmental and social incidents on a project.

The intention is to identify the actions required to prevent recurrence after an investigation of the incident. The level of the investigation and the techniques for any required analysis should take into consideration the type of the incident and be adequate to understand the causes of the incident.

OHS incidents require an investigator competent in safety (to comply with ESHG) to investigate and respond within 48 hours.

The VARS World Bank Task Team is responsible for following the ESIRT and reporting incidents internally. In order to do so, the PMU, DSS and Contractor must be aware of the different categories of reportable incidents as set out in the ESIRT found in Appendix B - ESMP. All investigations and reports should be completed within timeframes using the forms in the appendices of the ESIRT

The World Bank's ESIRT sets out the types of reportable incidents that should follow the process. These are reproduced as Appendix B of this ESIA.

5 Environmental Baseline

This section describes the baseline environmental conditions relevant to the Etas subdivision, providing a foundation for assessing potential environmental impacts. Data were obtained through desktop studies, site visits, technical investigations, and stakeholder consultations.

The Etas site reflects the broader environmental trends of peri-urban Port Vila—**disturbed, semi-vegetated land** with **remnant plantation trees** and **low biodiversity value**. No rare, endangered, or culturally significant ecological features have been identified. The site offers a suitable location for development from an environmental baseline perspective, provided mitigation measures protect remaining trees and manage stormwater to prevent erosion.

5.1 Summary of Site Conditions

Category	Site Condition	Notes / Source
Site Area	10 hectares	Government leasehold
Topography	Gently to moderately sloping with limestone escarpment	Section 5.1.2

Soils	Coral-derived brown soils; variable permeability	Soakage tests, 2024
Geology	Fractured reef limestone (Late Pleistocene)	Section 5.1.1
Land Use History	Former grazing and plantation land; cleared for development	Site screening, 2023
Current Land Use	Vacant; peri-urban setting	SES, SEP
Local Climate Risk	Exposure to intense rainfall, cyclones, and drought	Sections 5.1.4
Geohazards	Earthquake-prone area; low tsunami and volcano risk	VMGD, Section 5.1.5
Air Quality	Generally good; affected by landfill fires (Nov 2024)	Section 5.1.6
Noise Levels	Low baseline; intermittent vehicle and community noise	Section 5.1.6
Freshwater Resources	No streams on site; 600m distant from Teouma River	Section 5.1.7
Marine Resources	No connectivity or impacts expected	Section 5.1.8
Vegetation	Highly Disturbed; scattered emergent trees retained	Section 5.2.1
Wildlife	Common local birds, reptiles; no threatened species recorded	Section 5.3
Biodiversity Value	Low; highly modified former agricultural site	Section 5.2.2 & 5.2.3

5.1.1 Geology and Soils

The Etas subdivision site lies on the limestone periphery of Efate Island, underlain by Late Pleistocene reef limestone that is heavily fractured due to seismic activity. The site's soils are calcareous brown soils derived from coral deposits—typical of former plantation areas in central Efate.

Five soakage tests were conducted across the site to evaluate subsurface permeability for drainage and wastewater systems. Results showed variable soakage rates, ranging from 0.51 L/s in the southern area to over 5 L/s in the northern and western areas. Fissures were observed in most test pits, indicating an extensive subsurface cavity network. These findings support the proposed use of soakaways for drainage and septic systems but also highlight the need for careful management of potential groundwater contamination.

5.1.2 Topography

The site is gently to moderately sloping, with a limestone escarpment running through the center that divides it into upper and lower sections. The terrain slopes primarily to the south, toward Etas Road and the Efate Ring Road, which border the site. The north-facing slopes are more moderate. The site sits approximately 3.3 km inland from the Teouma River mouth, at elevations well above sea level, minimizing risk of coastal flooding.

This topography influences drainage design, lot layout, and access planning, and has been incorporated into the subdivision's earthworks and stormwater management strategy.

Figure 10 & 11 below show the topography of the site

Figure 8. Site Contours

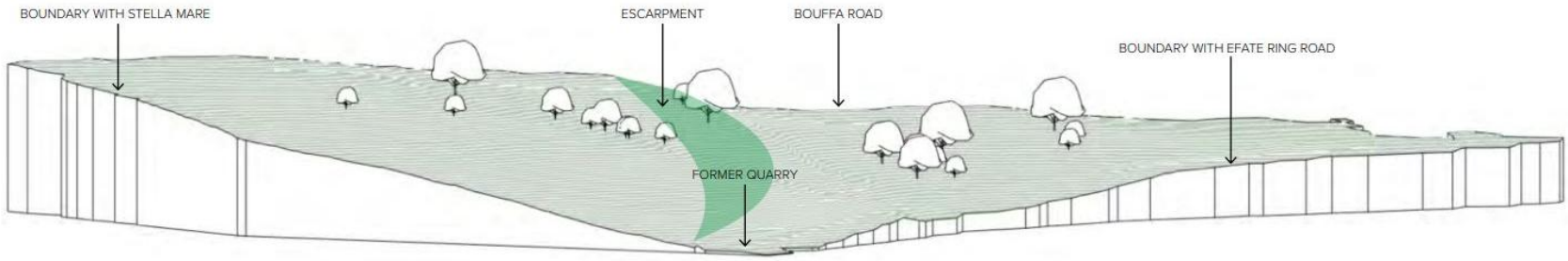

Figure 9. Terraine model perspective

5.1.3 Land Use

Current Land Use

The Etas site is located in a mixed-use peri-urban area that includes nearby rural residences, subdivisions, and informal settlements. Immediately north lies the Etas settlement, including a school that services the local population. To the northeast, the site adjoins the Stella Mare subdivision, a low-density residential and commercial area characterized by relatively large ploys and retained vegetation cover.

Bouffa Road, which borders the eastern edge of the site, connects to the Port Vila landfill (Bouffa landfill) approximately 2 km southeast. The landfill is operational five days per week and is accessed via light and medium trucks—conditions relevant for assessing potential traffic interactions and waste management logistics during construction.

The project site itself was formerly used for grazing and plantation agriculture and has since been cleared of overgrowth in preparation for development. The Etas lease is held by the Government of Vanuatu. As of April 2025, there are no structures or food gardens present at the site; nor any form of formal or informal land use.

Historic land Use and Cultural Context

While there are no known archaeological sites on the Etas subdivision land, a significant Lapita burial site is located approximately 3.1 km south at Teouma Bay. The Teouma site is one of the most important Lapita-era archaeological sites in the Pacific, featuring burial remains and pottery from early settlers of Vanuatu There is a low but non-negligible potential for chance finds during excavation.

Due to Vanuatu's history as a World War II theatre there have been UXO discoveries in and around Port Vila harbour and on the west coast around Havanah. Etas was not a WWII target area and so there is a very low risk of unexploded ordnance (UXO) within the Etas project site. The site has been previously used for grazing and shows no known history of military occupation.

A Chance Find Procedure has been incorporated into the Environmental and Social Management Plan (ESMP) to ensure protection and compliance should any heritage artifacts, human remains or UXO be discovered during construction. In the event of a UXO, the Vanuatu Military Force Ordnance Disposal Unit must be contacted without delay and the area of the site closed off. UXO risk assessment shall be undertaken by a qualified contractor, and clearance certificates must be obtained where required.

5.1.4 Climate and Local Climate Risks

Etas experiences a humid equatorial climate with high rainfall concentrated between November and April. Tropical cyclones are common and can bring destructive winds and extreme rainfall. The site is also influenced by El Niño Southern Oscillation (ENSO) driven droughts and variability. ENSO events are relevant for planning stormwater drainage, water supply resilience, and vegetation restoration at the Etas site. Design measures include cyclone-resilient structures and enhanced drainage systems.

At the Etas site, climate risks include:

- Severe rainfall and stormwater runoff,
- Wind damage from tropical cyclones,
- Potential water scarcity during dry periods.

In response, the subdivision's stormwater drainage and detention systems are designed to accommodate higher-intensity rainfall. Soakage tests and site-specific grading inform runoff management. The project also adheres to cyclone-resilient building standards outlined in the Vanuatu Building Code, which is a mandatory requirement for all residential lot development.

These measures ensure the project meets both national climate resilience policies and the World Bank's ESS1 (Environmental and Social Risk Management) and ESS4 (Community Health and Safety) standards, supporting long-term environmental and structural resilience in a changing climate.

Figure 10 below illustrates fluctuations and changes in rainfall in Port Vila, over a period in excess of 60 years.

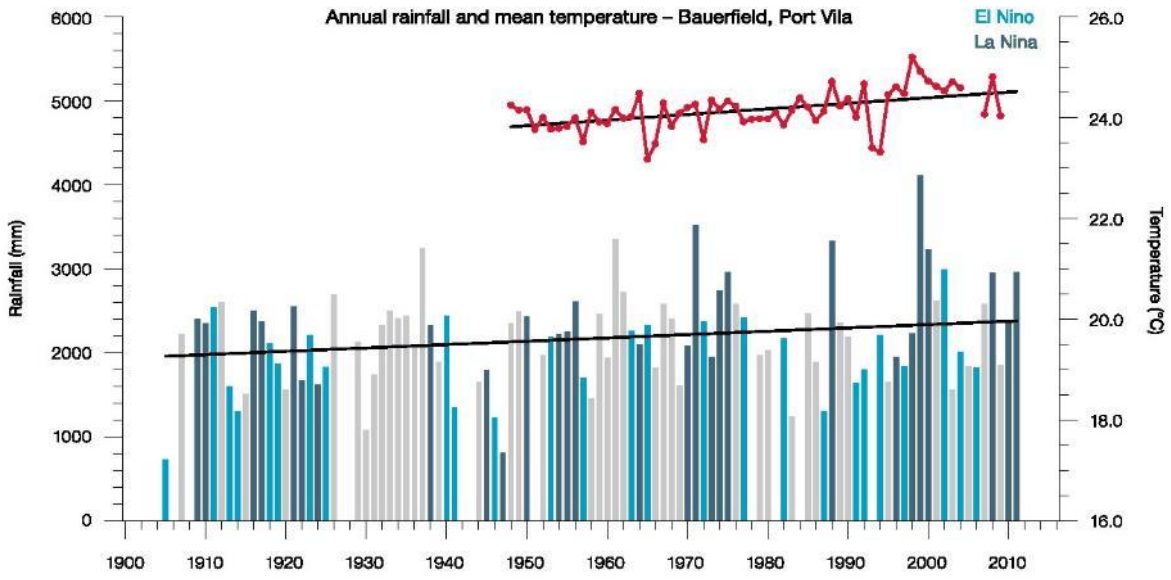

Figure 10. Annual average air temperature and total rainfall at Bauerfield Airport, Port Vila. *Source: PCCSAP (2015).* Note: air temperature (red dots and line) and total rainfall (bars). Light blue, dark blue and grey bars indicate El Niño, La Niña and neutral years respectively. No bars indicate that data is not available. The solid black lines show the trends.

The Vanuatu Climate Futures project[2] sets out the following projected changes for Shefa province in both a low and high emissions scenario:

[2] University of Hawaii, CSIRO and Climate Comms (2023). ibid.

Shefa Future Climate Projected changes for Shefa province for 20-year periods centred on 2050 and 2090 relative to a 20-year period centred on 1995 for low (RCP2.6) and high (RCP8.5) emissions scenarios.							
	Emissions scenario	Annual-average temperature (°C)[1]	Rainfall Nov-Apr (%)[1]	Rainfall May-Oct (%)[1]	1-in-20-year Extreme daily rainfall (%)[1]	Annual-average sea level (cm)[1]	Annual-average marine heatwaves (days)[2]
2050	Low	0.5-1.0	-10 to 8	-13 to 9		17-30	80–150
	High	0.9-1.6	-17 to 10	-22 to 13	-5 to 30	22-37	170–300
2090	Low	0.4-1.0	-19 to 8	-20 to 4		30-56	110–190
	High	2.0-3.3	-26 to 18	-32 to 28	9 to 54	56-99	320–360

Figure 11: Shefa Future Climate

5.1.5 Geohazards

Vanuatu is one of the most disaster-prone countries globally, situated in the Pacific "Ring of Fire" and cyclone belt. Natural hazards include earthquakes, cyclones, tsunamis, volcanic activity, and flooding. The Etas subdivision must therefore be designed with a high degree of geohazard resilience.

Earthquake Risk (Relevant to Project Site)

Etas is located in a seismically active zone. While not directly impacted by the December 2024 magnitude 7.3 earthquake, earthquake-resilient building standards are mandatory.

The site is elevated and not at risk from tsunamis or volcanic activity. Disaster risk reduction is embedded into site design, in line with Vanuatu Building Code standard and World Bank policies.

Volcanic and Tsunami Risk

Vanuatu has several active volcanoes, but all are located far from the Etas site. The site lies at an elevation of 50–60 meters above sea level, well above the elevation typically associated with tsunami risk. According to the Vanuatu Meteorology and Geo-Hazards Department (VMGD), the Etas site is not in a designated tsunami hazard zone.

Disaster Preparedness and Institutional Measure: The Vanuatu Meteorology & Geo-Hazards Department maintains national monitoring systems for earthquakes, volcanoes, and tsunamis. Vanuatu's 2018 National Policy on Climate Change and Disaster-Induced Displacement emphasizes resilience in land use and urban planning. The project complies with this policy through its focus on elevated site selection, earthquake-compliant structures, and stormwater management aligned with climate change projections.

5.1.6 Air and Noise Quality

Air quality is generally good. However, landfill fires in 2024 affected air quality temporarily. Localized pollution from vehicle emissions is possible. Baseline noise levels are low, typical of a semi-rural setting, with main sources being traffic and community activity.

Table 7 Air quality in Port Vila, February 2025

Date	PM2.5	PM10	O3	SO2	NO2

13 February 2025- Concentration [3]	6 µg/m^3	10 µg/m^3	36 µg/m^3	0 µg/m^3	0 µg/m^3
AQI	23	14	12	0	0
17 February 2025 Concentration	8 µg/m^3	16 µg/m^3	43 µg/m^3	6 µg/m^3	0 µg/m^3
AQI	28	21	14	6	0

Vehicle emissions, particularly from older diesel-powered vehicles, contribute to localized air pollution. Across Vanuatu, vehicle maintenance standards are variable, and there are currently no national emissions regulations or mandatory testing, which can result in elevated levels of exhaust particulates near road corridors.

Baseline noise levels in the area are typically low, reflecting the low-density residential and semi-rural character of the surroundings. Anthropogenic noise sources include passing vehicles and occasional community or household activity, with no significant industrial or commercial noise sources in the immediate vicinity.

Mitigation during construction includes truck speed limits, haul time restrictions (0700–1800H), and dust suppression.

Figure 12 summarises the typical noise signature of construction equipment. Any vehicle noise is intermittent and confined to locations close to the surrounding roads.

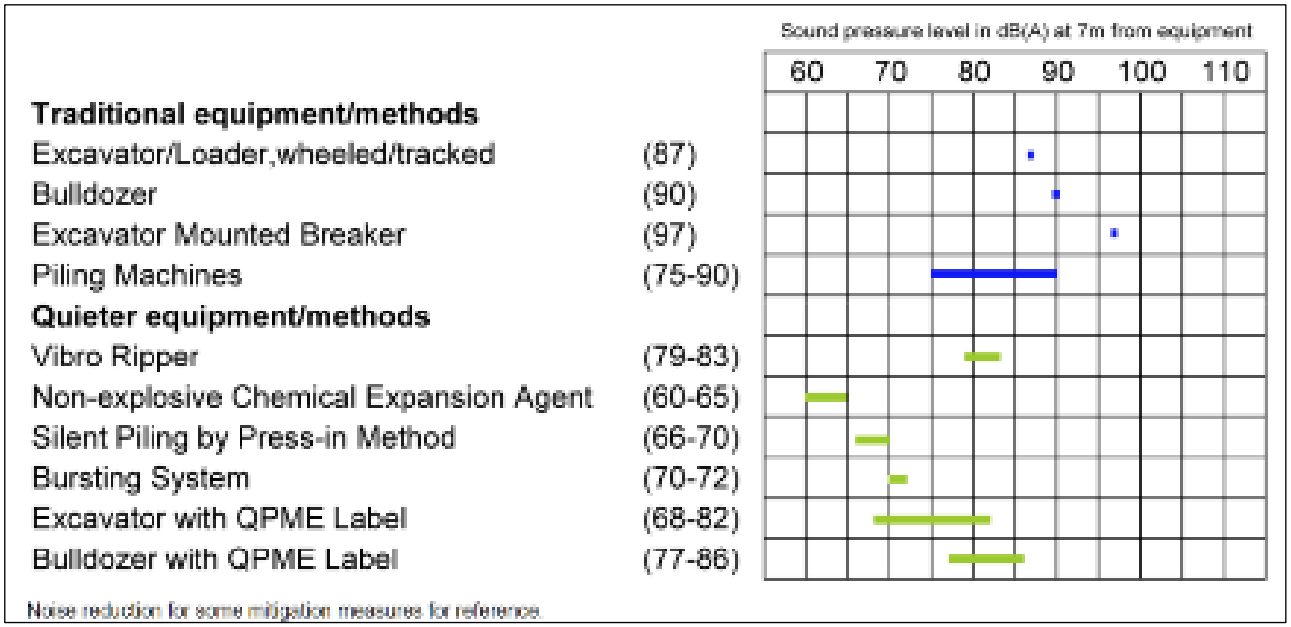

Figure 12: Noise signatures of construction equipment. *Source: The Government of the Hong Kong Special Administrative Region of the People's Republic of China.* https://www.epd.gov.hk/epd/misc/construction_noise/contents/index.php/en/foundation-works/49-quieter-construction-equipment.htm

[3] AccuWeather (2025). Port Vila, Shefa. https://www.accuweather.com/en/vu/port-vila/355924/air-quality-index/355924 accessed 13/02/2025.

Table 8: Noise decay using the doubling distance rule

Distance in m	7	20	40	60	80	100	120	140	160	180	200	220	240	260	280
Noise dB(A)	87	77.9	71.8	68.3	65.8	63.9	62.3	61	59.8	58.8	58	57.1	56.3	55.6	55

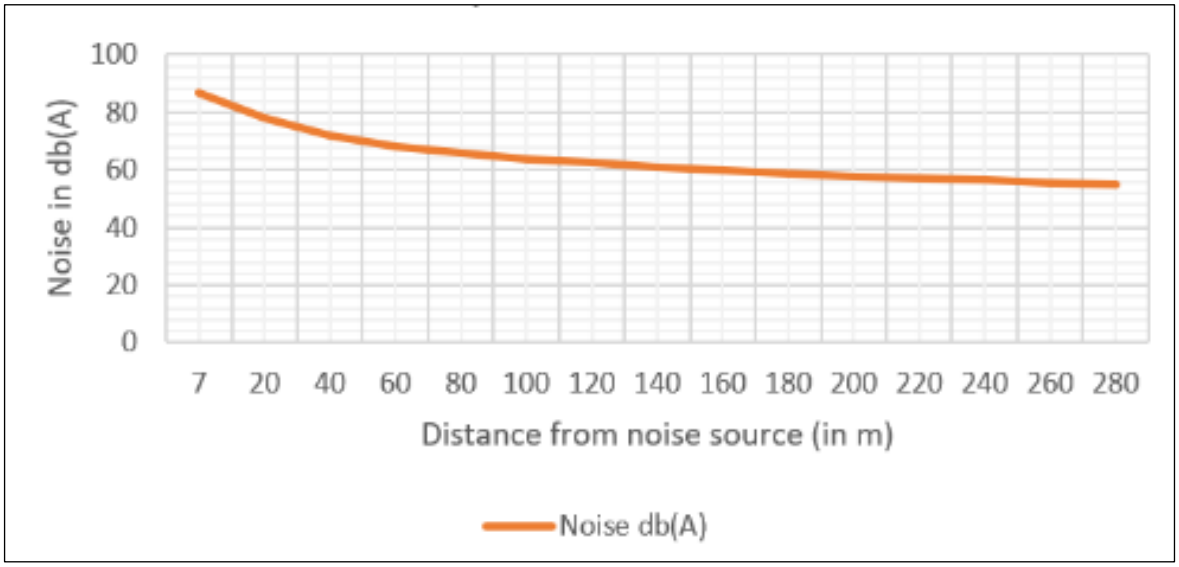

Figure 13: Attenuation of Excavator/Payloader with doubling distance rule

5.1.7 Freshwater Resources

The Etas site is located on the western slopes of the Teouma River floodplain. The Teouma River itself is approximately 600m to the east of the Etas site. Several properties and access roads lie between the project site and the river, creating a natural buffer.

There is no direct hydrological connection between the site and the river. Stormwater runoff from the subdivision will be directed to an infiltration basin at the western edge of the site, which lies between 800 and 1,000 meters from the river. As such, no stormwater discharge is expected to reach the Teouma River, and both construction and long-term site use are unlikely to impact river conditions.

Water supply to the subdivision will be provided via mains water infrastructure, supplemented at the household level by rainwater harvesting—a common practice in Port Vila. Rainwater collection is expected to slightly reduce stormwater flow into the drainage network during wet periods.

Surface drainage relies primarily on road drains, while subsurface flows are influenced by the area's coralline limestone geology, which features sinkholes and variable permeability. These characteristics require attention in drainage and wastewater design to avoid unintended groundwater impacts.

Groundwater quality in the area is generally considered good, though variable depending on subsurface structure. Onsite wastewater treatment via septic systems is designed to limit contamination risks.

5.1.8 Marine Resources

The closest coast to the Etas site is at Shark (Teouma) Bay some 3.3 kms south of the site. Given the elevation, inland location, and lack of surface water discharge pathways to the coast, the project area lies well outside the zone of influence for any marine or coastal ecosystems.

No impacts to marine resources are anticipated during construction or operation of the subdivision.

5.2 Biological Environment

The Etas subdivision site is located in a previously cleared plantation area on the outskirts of Port Vila, with no intact natural ecosystems present. The biological environment is consistent with disturbed peri-urban habitats typical of former coconut and cattle plantation land. Construction activities are expected to remain entirely within the site boundary, with no anticipated offsite ecological impacts.

5.2.1 Vegetation and Terrestrial Habitat

The vegetation is highly disturbed, and is characterized by a mix of grasses, shrubs, and a number of emergent trees, including whitewood (*Endospermum medullosum*), melekwood (*Antiaris toxicana*), and banyan trees (*Ficus spp*). These trees are remnants from previous land use or were intentionally planted. The site has been cleared of undergrowth in preparation for subdivision works, with significant mature trees preserved, especially in designated green space and escarpment areas.

No threatened or endemic plant or animal species have been recorded at the site. The land has been regularly disturbed due to past agricultural use, tree felling, and small-scale cultivation, reducing its ecological sensitivity. Surrounding areas—including the Stella Mare subdivision—are developed on similarly altered land.

During an assessment site visit to the project site on 20 July 2024 and a second site visit on 9 November 2024, the following bird species were observed:

Table 9: Bird species observed July & November 2024

Species	Scientific	Location
Common myna	*Acridotheres tristis*	Roadsides
White-breasted Woodswallow	*Artamus leucorynchus tenuis*	Roadside power lines.
Grey-eared honey eater	*Lichmera incana griseoviridis*	Inside site, adjoining sites.
Glossy swiftlet	*Collocalia esculenta*	Flying overhead.
Uniform swiftlet	*Collocalia vanikorensis*	Flying overhead.
Pacific kingfisher	*Todiramphus chloris*	Heard July, observed November.
Coconut lorikeet	*Trichoglossus haematodus massena*	Heard November.
Pacific emerald dove	*Chalcophaps indica*	Inside site, July.
Melanesian whistler	*Pachycephala caledonica*	Large trees, November.
Grey fantail	*Rhipidura fuliginosa*	Inside site, July.

In terms of other fauna, the following were observed on site visits

Table 10:Other species observed January/April; 2024

Species	Scientific	Location
Lepidoptera		
Autumn Leaf butterfly	*Doleshalia bisaltide*	Inside site, July, November
Grass yellow butterfly	*Eurema hecabe*	Inside site, July.
Moon butterfly	*Hypolimnas bolina ssp. nerina*	Inside site, July.

Polka dot moth	*Euchromia rubricollis*	Inside site, November.
Reptiles		
Common Emo Skink	*Emoia erronan*	Inside site, July, November
Melanesian Blue-tailed Skink	*Emoia caeruleocauda*	Inside site November

Other reptiles likely to be present on this site would include various common species of skinks (Emoia spp) and geckos (Nactus and Lepidodactylus spp). The Pacific Tree Boa (Candoia bibroni) is likely also present on the site as it is commonly encountered in southern Efate and around Port Vila.

5.2.2 Freshwater Biodiversity

The Teouma River, located approximately 600 meters east of the Etas site, is the nearest freshwater ecosystem. It is hydrologically disconnected from the subdivision area due to intervening land parcels and distance. There are no streams or wetlands on or near the site, and therefore, the project will have no direct or indirect impacts on freshwater biodiversity.

5.2.3 Marine Biodiversity

The Etas site lies approximately 3.3 kilometers inland from the coast at Shark (Teouma) Bay. Given the elevation, distance, and lack of drainage connectivity, the subdivision will not impact coastal or marine ecosystems. The project is outside the area of influence for marine biodiversity, including coral reef and lagoon habitats that may be sensitive to land-based runoff.

5.2.4 Broader Ecological Context

While Vanuatu is part of the East Melanesian Islands biodiversity hotspot, the Etas site does not fall within any protected area or intact natural forest zone.

5.3 Rare or Endangered Species

The 2008 International Union for Conservation of Nature (IUCN) Red List categorised a total of nine threatened species in Vanuatu, of which seven are endemic to Vanuatu. The IUCN Red List of Threatened Species™ (IUCN Red List) is widely recognised as the most comprehensive, apolitical approach for assessing and monitoring the status of biodiversity. The IUCN regards the threatened status of animals and plants as one of the most useful signs for assessing the condition of an ecosystem and its biodiversity.

The nine species and their red list categories are listed below:

- Akihito Vanuatu (fish species) – least concern.
- Vanuatu Starling – vulnerable.
- Vanuatu Imperial Pigeon – vulnerable.
- Vanuatu Silver Vine Skink – least concern.
- Vanuatu Thicket Bird – near threatened.
- Vanuatu Scrub Fowl – vulnerable.
- Vanuatu Saw Tailed Gecko – data deficient.
- Vanuatu Kingfisher– near threatened.
- Vanuatu White Eye (bird species) – least concern.

Of these species, the only one commonly found around Port Vila and Efate is the Vanuatu White Eye, a passerine bird often present in parks and gardens. This species may be encountered in the vicinity of the project site. As a passerine with abundant alternative habitat in the project location, little or no

negative impacts are anticipated from the project on this species as the parks and gardens of the new subdivision will increase suitable nesting and foraging habitat.

6 Social Baseline

6.1 Purpose and Scope

This section presents the socio-economic baseline relevant to decisions about the location, design, operation, and mitigation measures for the proposed Etas subdivision. It incorporates findings from the 2020 National Census, a targeted socio-economic survey of 32 households (May 2024), the Stakeholder Engagement Plan (October 2024), and four key thematic studies:

1. Market Appetite Report (November 2024)
2. Land Tenure Options Report (December 2024)
3. Eligibility Criteria Report (February 2025)
4. Marketing Strategy Report (February 2025)

The data provides insight into community demographics, tenure status, income patterns, infrastructure gaps, and stakeholder perceptions—all of which inform subdivision layout, tenure models, communications planning, eligibility screening, and risk mitigation design.

6.2 Dates for Project Identification

Project site identification was made during a June 2020 pre-identification mission and confirmed during subsequent missions in November 2020 and September 2021 through the project launch mission in July 2022. These are summarised in the project alternatives section of this ESIA. The Etas site was selected during the June 2020 mission based on key criteria: state leasehold tenure, location near transport corridors, manageable hazard exposure, and suitability for mixed-use development.

6.3 Data Sources and Limitations

Data Sources:

- Vanuatu 2020 Population and Housing Census (VNSO)
- Site reconnaissance and land use verification (2023–2024)
- VARS Household Socio-Economic Survey (32 HHs, May 2024)
- Stakeholder Engagement Plan (SEP, October 2024)
- Market Appetite Report (Land Equity International - LEI), 2024)
- Land Tenure Options Report (LEI, 2024)
- Eligibility Criteria Report (LEI, 2025)
- Marketing Strategy Report (LEI, 2025)

Data Reliability and Limitations:

- Income data in the household survey may be underreported where household heads did not participate directly;
- No disaggregated health, education, or infrastructure access data exists at the Etas ward or sub-ward level;
- Market sentiment analysis (via stakeholder consultations) was largely qualitative, though triangulated across multiple sources.

6.4 Socio-economic Conditions at Etas

Vanuatu Land Context

Prior to independence in 1980, approximately 20% of Vanuatu's land area had been alienated by foreign interests. With the passage of the *Land Reform Act (1980)* at Independence, all land was formally returned to the indigenous customary owners. The Constitution of Vanuatu establishes that land ownership and use are governed by *kastom* (customary law), which forms the legal basis for land tenure across the country.

Outside the Port Vila Municipality—within Shefa Province—most land is held under customary tenure. However, some areas are subject to private leaseholds, formal subdivisions, or are owned by the Church. In rural areas, lease titles may exist even where no custom owner has been formally declared.

Before the enactment of the *Custom Land Management Act (CLMA)* in 2013, the Minister of Lands could issue lease titles—sometimes up to 75 years—on behalf of disputing custom owners, with the Minister listed as the lessor. In many rural areas today, customary landowners may hold a *green Certificate of Recorded Interest in Land*, which recognizes their interest but may or may not be accompanied by a registered land title.

To formalize the identification of custom landowners and resolve disputes, Parliament enacted the CLMA in 2013. Administered by the Custom Land Management Office (CLMO) under the Ministry of Justice and Community Services, the Act establishes a legal framework for determining rightful custom ownership. Based on decisions made by Land Tribunals, the CLMO issues green Certificates of Recorded Interest in Land (commonly known as Green Certificates) to validated custom owners, following a legislated process.

Land Tenure

The proposed project site is located on registered lease title **12/0923/602**, currently held by the **Government of Vanuatu**. This title originated from a 75-year head lease initially granted to Stella Mare Limited, which provides land use rights until 2072 (with 47 years remaining). Adjacent to the site is the Stella Mare Subdivision, a residential area comprising owner-built homes.

Title 12/0923/602 was created through subdivision of the original Stella Mare lease and was transferred to the Government in 2008 (see *Appendix E*). While the site was originally earmarked for correctional services, a change in government policy occurred in December 2021 when the Council of Ministers (COM) resolved to transfer the title from the Ministry of Justice and Community Services to the Ministry of Lands and Natural Resources (MoLNR). With MoLNR as lessee, the government is positioned to proceed with subdivision development at the site.

Custom Landowners

The original lease was signed in 1997 by the Minister of Lands, acting on behalf of disputing custom landowners, in accordance with the Land Reform Act. Following the enactment of the Custom Land Management Act (2013), the custom landowner-lessors secured a Green Certificate, issued by the Custom Land Management Office (CLMO).

Section 13 of the 2013 Act:

"*Custom owners whose land is already the subject of a lease before the commencement of this Act (2013), including those for which the Minister of Lands is the designated Lessor, may request the National Coordinator (CLMO) to apply section 6B of the Land Reform Act to create a Recorded Interest in Land*."

Green Certificates are issued to families or clans, with specified individuals named as their representatives. These certificates reflect the determinations of a village land tribunal and can only be

overturned through due process. The Etas lease lies within Etas Naisraper Land owned by the Kalmet, Kaltatak, and Maseimerman families.

Change of Lease Register

The lease register for title 12/0923/602 has been amended on several occasions to reflect updated custom ownership representation:

- 7 June 2019: The Lessor designation was changed from the Minister of Lands to the Kalmet, Kaltatak, and Maseimerman families, represented by Andrew Bakoa Kalpoilep, Kalkot Kaltatak, and Jack Kalon of Eratap Village.
- 20 July 2020: The list of Lessor representatives was revised to include: Andre Willy Laklokai, Samuel Andrew, Jack Norris Kalmet, Kalkot Kaltatak, and Charlot Nawen Rutau Maseimerman.
- 26 Aug 2024: The list of Lessor representatives was revised to include: Andre Willy Laklokai, Samuel Andrew, Jack Norris Kalmet, Kalkot Kaltatak, Joseph Kaltapas, Charles Kalkot, Charlot Nawen Rutau Maseimerman, Kalserei Yonah Rutua, Kalwat Joseph and John Markal (see Appendix E: Lease Register).

Under the 2013 amendment to the Land Reform Act, custom landowners may, at any time, pass a resolution by consensus to change their official representatives. This provision allows for evolving representation to reflect customary decisions. The most recent variation is documented in the Green Certificate dated 20 October 2022, which was formally verified by the National Coordinator of the CLMO.

Next Steps and Negotiations

The Director of Lands (MoLNR) will lead negotiations with the custom landowner-lessors to secure their agreement on the following:

- Surrender of title 12/0923/602 to enable a change in lease classification from E-Special to mixed-use (residential and commercial).
- Subdivision of the existing title into 130 derivative leases[4].
- Finalisation of lease conditions.

Upon completion of these negotiations, a land due diligence report will be submitted to the World Bank for review.

6.5 Land Use and Summary of Impacts on Informal Users (Gardeners)

The Etas site is a vacant greenfield, with no permanent structures, occupants, or recorded access routes. During the preliminary design phase in May 2022, it was confirmed that informal land users were gardening within the Etas subdivision site. These households—who live on large, rural blocks surrounding the project area—were consulted at that time about the informal use of the Etas site, the types of crops being planted and expected harvest times. These consultations were designed to inform land use planning that would enable informal users to harvest crops and discontinue planting without causing any type of economic losses.

[4] VARS Project contracted Land Equity International delivered a Land Tenure Options Report (December 2024), which assessed community title, sublease, and standard derivative lease options. The VARS Project Steering Committee approved the standard derivative lease option, which supports clarity, affordability, and long-term maintenance.

On 23 November 2023, a custom ceremony was held at the site to acknowledge the traditional custom landowners, recognize the government-held title, and formally announce the project. The event was attended by representatives from the Malvatumauri and Vaturisu Councils of Chiefs, relevant Ministries, and the Shefa Provincial Government. Boundary signs and project grievance mechanism information were installed in the three official languages (English, French and Bislama). The ceremony also marked the cut-off date for new planting within the site. All gardeners were given a six-month period (ending June 2024) to harvest their crops which was agreed with the informal land users, the arrangement was publicly communicated through local media.

A socio-economic survey conducted in April–May 2024 with 32 nearby households confirmed that:

- **10 households** were not using the site for gardening.
- **22 households** had been gardening but were no longer planting new crops and were able to complete their crop harvests before the June deadline.
- **All households** reported having access to alternative garden sites, including nearby vacant lands held by VNPF and Caillard Kaddour Real Estate.
- **No trees were planted** within the site except for banana plants, which can be transplanted.

Of the four households growing significant quantities:

- Two households sold excess crops roadside but had already transitioned to new garden areas.
- Income data was inconsistent, but all households surveyed had at least one income source, including full-time, part-time, or overseas employment. The income data findings suggest that no household would be financially disadvantaged as a result of discontinued planting at the Etas site.

Support for Vulnerable Households

One female-headed household was identified as vulnerable. This household, supported by an adult son with full-time employment, confirmed that they had access to new gardening land, were able to harvest remaining crops, and expressed appreciation for the proposed development and services.

As part of project implementation, vulnerable households were prioritized for employment during site clearing and fencing activities and local households – including the female-headed household - continue to be engaged in ongoing site maintenance work. This approach supports income stability while building community ownership of the project. All households were given access to firewood from the clearing activity.

Clearing and Fencing

The first sub activity for subcomponent 1.1 was the clearing and fencing activity to enable site investigations and surveys. This minor works contract was signed 10 September 2024 and completed January 2025, with a contract variation for ongoing grass cutting of the site. 12 local households have been employed under this minor works contract.

Compliance with Entitlements

The project complies fully with the Entitlement Matrix. Affected informal land users (gardeners) were:

- Clearly informed of the cut-off date and their rights;
- Given more than six months to harvest crops which was indicated as sufficient in consultation with them;
- Informed of their right to compensation at replacement cost if unable to harvest;

- Vulnerable families were provided with opportunities for livelihood support.

A land use screening in April 2025 verified the absence of current land use or crop presence; the site is encumbrance free.

Nearby Households and Demographics

Surrounding households include migrants from outer islands (including Ambrym, Tanna, Malekula, Pentecost and Buninga,), most of whom lack formal tenure and reside in semi-permanent dwellings. Social cohesion is primarily through island kinship networks rather than a shared community structure. The 2024 socio-economic survey shows:

- Average household size of 5.94
- Predominantly male-headed households (31 of 32)
- Mixed nuclear and extended family structures

Basic Services and Infrastructure

The area has limited access to formal services:

- **Water:** Reliant on rainwater collection for HHs survey. Stella Mare neighbours have access to piped water,
- **Sanitation**: Reliance on pit latrines or water seal toilets,
- **Electricity:** Solar kits and generators, with Stella Mare neighbours having access to grid connection.

The subdivision design responds directly to these service gaps with on-site sanitation, water access points, and dedicated waste management planning. These decisions were influenced by both stakeholder feedback and technical analysis.

Livelihoods and Market Dynamics

Most households surveyed engage in:

- Employment in construction, security, and domestic services
- Seasonal work under the RSE program
- Informal vending (e.g., food, kava, produce)
- Trades and small business operations

Community Perception and Engagement

The **Stakeholder Engagement Plan** documents over 25 community meetings and dialogues from 2022 to 2024. Key findings include:

- Broad-based support for the project and trust in the Help Desk mechanism
- Anticipation of improved services and infrastructure
- Concerns around access, affordability, and application clarity
- Enhance road and drainage infrastructure.

The project has contracted Land Equity International (LEI) to deliver an **Eligibility Criteria Report**, which formalized a prioritization mechanism for selection of purchasers of the Etas lots. The mechanism favors low-income households, single-parent families, and applicants with disabilities.

LEI also prepared a **Market Appetite Report** which showed high interest in purchasing lots among low- and lower-middle income groups but limited appetite among developers and financiers for speculative investment. The **Marketing Strategy** identifies affordability, secure tenure, and visible public benefit as essential for uptake. Household income distribution aligns with the project's income targeting strategy, with most survey respondents falling within the defined affordability band (45,000–87,000 Vatu/month).

6.6 Cultural and Social Context

Etas is not a customary village and has no unified chiefly structure. However, strong kinship ties exist based on island origin. The project recognizes the importance of maintaining cultural touchstones: for example, nambanga (banyan) trees within the site have been preserved in the subdivision layout to provide communal space. These spaces were identified in both the SEP and household survey as important for reinforcing social bonds and encouraging informal community governance structures.

6.7 Considerations for Project Design

Given the current baseline:

- Social infrastructure (e.g., gathering areas, pedestrian access) should be designed to strengthen cohesion among a fragmented community.
- The gendered dimensions of access to water, safety, and livelihoods should be addressed during implementation planning.
- Ongoing community engagement and monitoring will be needed to ensure the project continues to meet local needs.

7 Stakeholder Consultation

7.1 Introduction

The area around Etas site has limited or no identifiable resident traditional communities. Some island groups have retained their chiefly structure or recognition of local chiefs from their islands and these have been included in initial stakeholder consultation meetings to date.

As a recently settled peri-urban area, the majority of Etas residents come from different islands and there are no community facilities such as markets or nakamals where communities can gather. Island groups tend to aggregate based on familial lines and members typically congregate in residential yards.

7.2 Engagement to Date

Engagement and information sharing for the VARS project has been ongoing for a number of years. Table 11 below sets out, at a high level, the consultation activities that have been undertaken to date.

Table 11: Engagement to date

Date	Consultation activity	Details
10 May 2022	Consultation with Etas informal gardeners: Rex Tari, MoLNR Lands Compliance Officer, Jennifer Manua, QCL Social Officer, spoke with families from Tanna and SE Ambrym households neighbouring the Etas site. Jack Amos was community rep.	GoV intention to develop the site as a subdivision was disclosed. The gardeners were advised to not plant any new crops or trees as the project was planning to start in 2023.

Date	Consultation activity	Details
	4 M / 6 W	
31 Oct 2023	Consultation with Etas Leadership: Local Chiefs representing SE Ambrym & Buninga and 6 women, met with Custom Landowner Sam Kalpoilep and MoLNR represented by; Jeff Malmangrou, Project Officer, A/DG Erickson Sammy, Director Gordon Willie, Jay Hinge Executive Officer and PMU 6 M / 6W	Etas Community and Leaders were consulted regarding the Etas greenfield planned investment.
23 Nov 2023	Custom Ceremony to mark cut-off date: Cliffson Kalarus Eratap Custom Landowner Representative, Malvatumauri President Chief Raven Paul Robert and CEO Chief Pierre Tom and Vaurisu Chairman Chief Poilapa. Met with MIA A/DG Leith Veremaita, MFEM A/DG Tony Sewen, MoLNR; Jeff Malmangrou, Project Officer, A/DG Erickson Sammy, Director Gordon Willie, Jay Hinge Executive Officer, PVCC A/Town Clerk Mandes K Tangaras, Shefa A/SG Liah Kaltoi, DUAP Jenny Naki, and members of the local community. 19 M / 9 W	Custom Ceremony with Chiefs and Etas Custom Landowners to give thanks for the Subdivision greenspace and to disclose and socialize the cut-off date.
22 Jan 2024	Meeting with Land Management Planning Committee	To discuss next steps with Etas proposed development
31 Jan 2024	Consultation with Eratap Customary Landowners: Kalserei Jonah- Eratap Village, Chief John Tau – Eratap Village, Chief Charlot Nawen Maseimerman (Erakor Chief), Johnston Kalman – Eratap Community Samuel Kaltabang- Spokesman of Chief Maseimerman (Erakor Village) met with Erickson Sammy -A/DG- MOLNR Gordon Willie- Director Lands, Jeff Malmangrou- PO MOLNR, Darren Fatu- Lands Officer , Alick Kalmelu- LMPC Chairman and the PMU 14 M/ 0 W	Disclose GoV intention to develop the Etas lease as a subdivision.
9 Feb 2024	Consultation with Custom Landowners: Chief Johnstone Tau met with MoLNR A/DG Erickson Sammy and Director of Lands Gorden Willie and the PMU 10 M / 0 W	Follow-up consultation with custom landowners regarding the planned investment.
06 March 2024	Consultation with DEPC: Acting Director Trinison Tari and PMU 3 M / 1 W	To discuss the details of the planned investment and the process for environmental permit
10 April 2024	Consultation with Custom Landowner/Lessors:	To secure signed access consent from custom owners.

Date	Consultation activity	Details
	Andrew Willy Laklokai, Samuel Andrew, Jack Norris Kalmet, Kalkot Kaltatak, Jack Kallon and the PMU 5 M / 0 W	
19 April 2024	Consultation with DEPC: DEPC A/Director Rolenas Tavue Baereleo, EIA OIC Frazer Alo, Trinison Tari 4 M / 2 W	To discuss the details of the planned investment and the process for environmental permit with the newly appointed Director.
26 April 2024	Consultation with Shefa Province representatives: A/SG Shefa Liah John Kaltoi, Administrator Shefa Ali Nangof, Eratap Area Administrator Jason Kalman, Eratap Area Council Secretary Delwyne Kalopong, Eratap Area Council Chairman Kalorus, Presbyterian Church Pastor Songi Worman, PMU. 4 M / 2 W	To discuss the socio-economic survey of the Etas community
26 April 2024	Consultation with Etas gardeners: Stacey George, Rose Tomaki, Claude Takahne, Serima Ambong, Yvanna Albert, Alick Albert, Renata Albert, Chief Sam Kalpoilep 4 M / 10 W	To disclose and socialize the upcoming socio-economic survey.
26 April – 6 May 2024	Consultation with Etas gardeners and local community to raise awareness and provide information on socio-economic survey. 32x socio-economic surveys conducted, provided information on help desk and distributed brochures for help desk.	Gather socio-economic data and socialise help desk information
19 June 2024	Meeting with new secretary general of Shefa Provincial Council	Provide project briefing and encourage involvement of Chiefs and Provincial Council in ongoing consultations at Etas
22 August 2024	Consultation with Etas Custom Landowner and new Chairman of the Vaturisu Council of Chiefs, Chief Charlot Nawen Rutau Maseimerman	Provide a project update and share date for Ground Breaking Ceremony
Aug -September 2024	Meeting with Department of Urban Affairs and Planning	To establish and understand physical planning areas, zoning and development control plans and constraints on the Etas subdivision. To establish areas of collaboration and coordination between the Etas subdivision and the National Housing Policy in consideration of accessible housing and building standards
	Meeting with Special Envoy for Climate Change, former Minister for Lands Ralph Regenvanu	To discuss environmental policies, protections and history of NLSP.

Date	Consultation activity	Details
	Meeting with Greater Port Vila Urban Resilience Project	To establish work undertaken to date on Physical Planning Areas and the Port Vila Zoning and Development Plan and Emergency Shelters.
	Meeting with IFC	To determine synergies between IFC's PPP low-cost housing approach and the Etas subdivision.
	Meeting with Habitat for Humanity	To understand the housing value chain analysis undertaken and understand affordable housing and building capacity challenges.
	Meeting with government partners: Shefa Provincial Government: Secretary General (Lionel Kaluat), Assistant Secretary General (Liah Kaltoi)	To establish the appetite of Shefa Provincial Government to participate in various aspects of the governance and service provision to the Etas subdivision.
	Meetings with Reserve Bank of Vanuatu Financial Inclusion Unit and ANZ Money Minded.	To determine appetite and ability to provide and facilitate financial literacy training for targeted purchasers and qualified buyers.
	Meetings with representatives of Vanuatu banks and financing organisations: • National Bank of Vanuatu • Bred Bank • Bank South Pacific (Vanuatu) Limited • ANZ Bank (Vanuatu) Limited • Wanguteng Bank Limited • Vanuatu Rural Development Bank • Vanuatu National Provident Fund • Fiji National Provident Fund	Meeting to establish the capacity / appetite of banks to provide financing to Etas subdivision purchasers.
	Meetings with developers / builders: • Enterprise Dinh Van Tu • Pierre Brunet Enterprise General • Caillard and Kaddour • Island Property • Le Fare Development Company • Vanuatu Teachers Union • Lumu Design • Naka Homes • Charlie Robert Construction • Christophe Dinh Construction • Module X • Vancorp • Franconierri & Son Construction • Fletcher Construction Ninane Construction	Meeting to establish the capacity / appetite of developers/builders to support development of the Etas subdivision and of low cost housing.
	Meetings with not-for-profit housing and regional developers:	Meeting to establish appetite of housing organisations to participate in

Date	Consultation activity	Details
	• Home in Place Habitat for Humanity	management services for the Etas subdivision.
	Meeting with UN Women, Markets for Change	To establish appetite to participate in the development of a community market in Etas subdivision through their Market for Change programme.
	Meeting with V2Life – Teouma Christian Academy	To establish appetite to potentially establish a school in the Etas subdivision.
	Meeting with Marine Reach Vanuatu Family Care Centre	To establish appetite to potentially establish a health clinic in the Etas subdivision.
	Meeting with management services providers: ● Law Partners ● Home in Place	To establish appetite to potentially provide community title or body corporate professional services in the Etas subdivision.
10-12 Sept 2024	Consultation with Chiefs and Etas Community members from Ambrym, Buninga and Tanna household clusters. 21 W & 21 M	Disclosed the upcoming ground-breaking ceremony and gathered names and numbers of community members seeking labour opportunity in the ground clearing activity. Provided information on Help Desk.
26 Sept 2024	High-level officials from MOLNR, MIA, SPGC, PVCC, MFEM, as well as Etas Custom Landowners and community members 42 W & 45 M	Project objectives and progress update provided, with speeches from Minister of Internal Affairs and Minister of Lands and Natural Resources

Note that the chiefs of the area referred to in the table are the kastom landowners of recognised locations in the area around Etas.

7.3 Ongoing Engagement

Etas Community: While the Etas site does not currently have a community of residents, neighbouring residents and stakeholders will have varying levels of interest in the proposed subdivision. The local community around Etas (Shefa Province) must be kept informed about the works so that they understand what is proposed and how the project might impact on their lifestyles and in particular their ability to move through the area and the roads around the project site.

The critical next stage in engagement will involve the marketing and sales of the subdivision blocks.

Selection of future residents (purchasers) of the Etas subdivision is guided by a transparent and equitable framework designed to prioritize low to lower-middle income households. The eligibility criteria, defined in a dedicated Eligibility Criteria Report, include income thresholds, residency and identification requirements, and priority categorisations such as gender (e.g. encouraging women-led ownership) and special interest groups.

A multi-phase application and qualification process is central to the purchaser selection. This includes:

- Publicly advertised eligibility criteria and application processes.
- A fair and transparent selection process, potentially involving a lottery system in case of oversubscription.

- A qualification period following initial selection, during which applicants must verify their eligibility and participate in financial literacy and housing awareness training.
- A structured approach to managing a waitlist to fill places vacated by dropouts or unqualified applicants.

This process is underpinned by principles of fairness, financial sustainability, and transparency to build trust and ensure the subdivision reaches its targeted demographic.

Marketing Strategy and Public Engagement

The Etas marketing strategy is built around inclusive, widespread, and transparent engagement. Key objectives include:

- Ensuring broad public awareness of the opportunity to purchase affordable, secure tenure lots in the subdivision.
- Educating the public and key stakeholders about the project's goals, affordability models, and long-term sustainability.
- Building public trust, especially in a context where past informal land dealings have fostered mistrust.

The strategy employs a diverse set of tools and channels, including:

- Digital and traditional media: Facebook, SMS messaging, radio, TV, newspapers, and dedicated webpages.
- Community outreach: Public meetings across Port Vila and South Efate, led by Shefa Province and local municipal authorities, with targeted sessions for women, seasonal workers, and persons with disabilities.
- Information support: A centralised Help Desk and website offering application guidance, downloadable forms, FAQs, and contact information.
- Marketing partnerships: Engagements with financial institutions, civil society organisations, and government departments to promote information-sharing and outreach.

A unified campaign identity and thematically consistent messaging (e.g. "Etas: Wan Gudfala Komuniti" or "Etas Komuniti stanap strong") help ensure clear public understanding.

Pre-sales and ongoing awareness activities are carefully sequenced through a multi-phase marketing implementation plan, from initial public awareness to post-sale follow-up. Financial literacy, bank loan criteria sessions, and builder awareness workshops are integrated to prepare purchasers for sustainable ownership.

Stakeholder Engagement Plan: Communications and the provisions of the project's Stakeholder Engagement Plan will continue to be applied. Particular care will be taken to ensure regular users of the road and local residents are kept informed about the project as it progresses. This will include information on impacts, safeguards provision and complaints mechanisms included in the project Help Desk (GRM).

8 Environmental and Social Impact Assessment

This ESIA and the accompanying ESMP evaluate the environmental and social risks and impacts at each stage of the Etas Subdivision project lifecycle. The subdivision is anticipated to generate substantial social benefits by facilitating access to serviced housing in Greater Port Vila. While construction and early operation stages may present **moderate to low environmental and social risks**, these are deemed **manageable with appropriate mitigation measures**, most of which are embedded within the design and to be implemented through the CESMP.

8.1 Environmental and Social Receptors

Environmental and Social Receptors (ESRs) are the environmental and human systems most likely to be affected by the project. These ESRs were identified through desktop review, field visits, stakeholder consultation, and analysis of baseline data.

Table 12: Environmental and Social Receptors and factors identified for the subdivision

Environmental and Social Receptor	Factors to Be Considered
Water Resources	- Changes in surface water movement and flooding - Changes in groundwater quality
Geological Resources	- Erosion and soil instability - Changes in soil quality
Atmospheric Environment	- Dust and air emissions during construction
Acoustic Environment	- Construction-related noise and vibration
Terrestrial Environment	- Loss of vegetation - Habitat disturbance
Community Services & Infrastructure	- Strain on waste disposal - Impacts on traffic and road condition
Land Use	- Conversion of land from vacant/greenfield to residential and community use
Social Environment	- Access to services and opportunities - Gender equity, youth, and vulnerable groups - Community cohesion and safety
Workers' Health and Safety	- Accidents, exposure to hazards, inadequate PPE
Community Health and Safety	- Exposure to SEAH and communicable diseases - Construction hazards, dust, and vehicle movement

This framework forms the basis for identifying risks and assessing their **significance**, discussed in the following sections.

8.2 Methodology for Risk and Impact Assessment

The assessment follows the World Bank Environmental and Social Framework (ESF), including application of:

- **Scoping** of relevant risks and ESRs
- **Impact Significance Matrix**
- **Risk Significance Matrix**
- Definition of **direct**, **indirect**, and **cumulative** impacts

Risk and Impact Significance Classification

Impact Magnitude	Criteria
High	Long-term, widespread, or irreversible impact; high stakeholder concern
Moderate	Reversible with mitigation; localised; medium duration
Low	Localised, short-term, easily mitigated
Negligible	No discernible effect on the environment or population
Probability	**Criteria**
High	Expected to occur in most cases
Moderate	Likely to occur during project phase
Low	Unlikely, but possible
Negligible	Very rare occurrence

Significance is then rated based on **magnitude × probability**, with mitigation reducing significance over time.

8.3 Impact Summary by Project Phase

We assess the environmental and social risks and impacts across each of the following phases:

- **Design**
- **Tender and Contractor Selection**
- **Preconstruction (mobilisation and setup)**
- **Construction**
- **Post-Construction / Demobilisation**
- **Operation**

In each phase, potential impacts are identified alongside proposed mitigation measures and links to relevant ESSs. A summary mitigation matrix will follow after the full narrative.

8.4 Design Phase Impacts and Mitigations

The design phase plays a critical role in establishing long-term environmental and social resilience and in minimizing avoidable risks during construction and operation. Integrating risk mitigation early in the design process ensures lower implementation costs, fewer delays, and enhanced sustainability. It also sets the stage for safeguards implementation through the ESMP and CESMP.

8.4.1 Design-Related Environmental and Social Risks

Key risks at this stage include:

Risk	Impact
Insufficient provision for stormwater management	Failure of drainage system leading to erosion and localised flooding
Inadequate lot sizing or layout	Failure of sanitation (septic) functions and pollution of groundwater
Fragmenting or eliminating green spaces and corridors or mature trees	Reduction on biodiversity and amenity values.
Inadequate consideration of future infrastructure needs,	Cumulative strain on existing infrastructure.
Failure to plan for natural disaster resilience,	Vulnerability to earthquake, cyclone and other natural disasters.
Lack of provisions to address social inclusion, accessibility, and gender-sensitive design	Poor social cohesion and increased vulnerability to community members and women.

Most of these risks are **indirect** in nature but can lead to **cumulative and direct consequences** during operation if not taken into account in the design.

8.4.2 Design-Based Mitigation Measures

The detailed design incorporates the following measures to directly address the above risks.

Risk / Impact	Mitigation Measure	Relevant ESS
Failure of drainage system leading to erosion and localised flooding	Use of swales, graded slopes and a soakage basin to capture peak flows and reduce runoff Alignment of road and lot layout with natural topography to avoid major cut/fill operations Provision for overflow capacity during extreme rainfall events Roadside and lot-level drains designed for high rainfall intensity, in line with climate projections	ESS1, ESS4
Failure of sanitation (septic) functions and pollution of groundwater	Lot sizing and layout accommodate on-site sanitation with safe soakage distances Soil permeability results from soakage tests integrated into the sanitation design criteria Avoidance of septic installations near steep slopes or drainage features	ESS1, ESS3

Risk / Impact	Mitigation Measure	Relevant ESS
Reduction on biodiversity and amenity values.	Retention of significant nambanga and other large trees in designated green space Escarpment and slope protection included in layout, restricting development on vulnerable terrain Revegetation requirements for post-construction rehabilitation planned into grading strategy	ESS6
Cumulative strain on existing infrastructure.	Suitable provision for utilities for number of lots and proposed ancillary activities. Allowance for future service expansion, reducing uncoordinated installations Drainage and road design to account for increased use of infrastructure and long design life. Coordination of community infrastructure (e.g., market, transport hubs) within the subdivision layout to reduce unplanned encroachment or pressure Traffic calming and site permeability measures to minimize heavy vehicle movement	ESS1, ESS4, ESS10
Vulnerability to earthquake, cyclone and other natural disasters.	Design of internal infrastructure and housing lots to comply with the **Vanuatu Building Code**, incorporating **cyclone** and **seismic** resilience Drainage and road design to account for climate change projections (ESS4) Lot boundaries and rights-of-way designed to avoid obstruction of emergency access	ESS1, ESS4
Poor social cohesion and increased vulnerability to community members and women.	Designs allow for **inclusive community facilities**, including safely lit public space access for women and children Design reflects anticipated **tenure arrangements** and allocates areas for mixed-use development	ESS4, ESS10

8.4.3 Environmental and Social Management Plan (ESMP)

The **ESMP** outlines all environmental and social safeguards measures to be implemented throughout the project lifecycle. Key design-phase provisions within the ESMP include:

- Risk register and mitigation table for pre-construction risks
- Site-specific constraints maps

- Earthworks, erosion control, and vegetation preservation provisions
- Detailed drainage and stormwater management standards
- Guidance on layout to preserve visual, ecological, and cultural values

8.4.4 Summary of Cumulative Design Impacts

Cumulative Impact	Design Mitigation	Relevant ESS
Flooding due to increased runoff	Drainage integrated with topography; soakage basin	ESS1, ESS4
Strain on infrastructure (roads, market, water)	Phased layout, capacity planning, cross-agency coordination	ESS1, ESS10
Loss of biodiversity corridors	Tree preservation zones, green space retention	ESS6
Noise and dust during future in-fill development	Staging controls, zoning buffers	ESS3
Accessibility gaps for vulnerable groups	Inclusive design of roads, footpaths, and community spaces	ESS10

8.5 Tender Phase Impacts and Mitigations

The tender phase presents a critical juncture where the environmental and social risk management framework is **contractually locked into implementation**. The preparation of detailed and enforceable safeguards clauses, the inclusion of the ESMP in tender documents, and the evaluation of contractors' technical capacity all influence downstream environmental and social outcomes. Poor preparation at this phase can result in ineffective mitigation, contractor non-compliance, or legal disputes.

8.5.1 Risks and Impacts During the Tender Phase

Key risks at this stage include:

Risk	Impact
Omission or insufficient integration of safeguards in tender documents	Environmental and social risks not priced or addressed by contractor
Weak technical specifications for safeguards	Ambiguity in compliance requirements, ineffective enforcement
Inadequate evaluation of contractor qualifications	Engagement of contractors unable to meet E&S obligations
Failure to allocate time for CESMP review	Project delays, rushed or non-compliant CESMP

Risk	Impact
Absence of safeguards personnel in team proposals	Lack of accountability and technical oversight during works

These risks are **indirect** in nature but can lead to **significant cumulative and direct consequences** during mobilisation and construction if not controlled early.

8.5.2 Mitigation Measures

To address the above risks, the following measures must be implemented:

Tender Documentation Requirements

- The full **Environmental and Social Management Plan (ESMP)** must be included in the **tender dossier** and clearly identified as a binding annex to the construction contract.
- The **CESMP** must be treated as a **Key Deliverable**, with associated **payment milestones** tied to its preparation and approval.

Contractor Prequalification and Bid Evaluation

- Contractors must include a **statement of past E&S performance**, confirming their track record in environmental and social safeguards compliance without penalty or non-performance.
- The bid must nominate a **Key Expert** for environmental and social safeguards (e.g. E&S Officer and OH&S Officer) with **minimum qualifications and relevant experience**, as defined in the bid documents.

Bids that do not include the safeguards Key Expert or omit the E&S declaration will be deemed **non-compliant**.

CESMP Preparation and Approval

- Bidders must confirm that **preparation of the CESMP has been costed and included in the bid price**.
- The CESMP and all sub-plans must be submitted in **draft form no less than 21 working days** before the planned start of works.
- The CESMP must be reviewed and approved by the PMU and World Bank before actual construction can commence.
- The PMU, with support from the DSS and the World Bank (where required), will review the CESMP for adequacy and consistency with the ESMP, national legislation, and World Bank ESSs.

Training and Orientation Commitments

- Contractors must outline in their bids how they will:
    - Conduct initial **safeguards training** for all personnel prior to mobilisation
    - Integrate **GRM orientation**, **SEAH prevention**, and **labour conditions** awareness into pre-mobilisation procedures
    - Comply with grievance reporting, incident logging, and supervision protocols outlined in the ESMP

8.5.3 Summary of Key Risks & Mitigation Measures During the Tender Phase

Risk / Impact	Mitigation Measure	Relevant ESS
Omission or weak inclusion of E&S safeguards in tender documents	Include ESMP in full as contractual annex; cross-reference ESMP in BoQ, specs, and TOR	ESS1, ESS10
Contractor unprepared or underqualified to implement safeguards	Require E&S qualifications and experience for Key Expert in bid	ESS1, ESS2
CESMP not prepared on time or to required standard	Require CESMP submission at least 21 days before construction; tie payment milestone to CESMP approval	ESS1, ESS4
Safeguards measures not budgeted or costed in bid	Require written confirmation that CESMP is costed in bid price	ESS1
No review time allowed before works start	**Include mandatory condition:** "CESMP must be reviewed and approved by the PMU and World Bank before actual construction can begin."	ESS1, ESS4
Contractor unaware of labour conditions, SEAH obligations, or GRM protocols	Require bid statement on training plan and pre-mobilisation induction content (labour, SEAH, GRM)	ESS2, ESS4, ESS10

8.5.4 Roles and Responsibilities During Tender Phase

Entity	Key Responsibilities
PMU (MoLNR)	Oversight of bid package preparation; inclusion of ESMP and safeguards clauses; bid evaluation
DSS (Design and Supervision Specialist)	Technical advice on E&S criteria, bid compliance checks, review of CESMP
World Bank	Final review and no-objection to CESMP prior to construction
Contractor	Submission of compliant bid, nomination of safeguards staff, preparation and submission of CESMP

Residual Risk

Provided these mitigation measures are implemented, the residual risks related to tendering are expected to be **low**. The successful integration of safeguards at this stage strengthens safeguards compliance in all subsequent phases and reinforces the accountability structure for environmental and social performance.

8.6 Preconstruction Phase Impacts and Mitigation

The preconstruction phase bridges the tender award and the start of major civil works. It involves site establishment, planning, approvals, and safeguards preparation. This phase is critical for **translating design commitments into actionable safeguards**, and for confirming the contractor's readiness to manage environmental and social risks. If preconstruction measures are delayed or incomplete, risks during construction may escalate or become unmanageable.

8.6.1 Induction of Contractor to the Site.

Following contract signing, the contractor will undertake site visits and participate in a formal induction process coordinated by the PMU and Design and Supervision Specialist (DSS). This ensures early familiarisation with:

- Sensitive environmental features (e.g. escarpments, nambanga trees)
- Local communities, access routes, and neighbouring landowners
- Utility locations and potential constraints

Mitigation Measures:

- Site-specific risks reviewed jointly by contractor and DSS
- Community Liaison Officer (CLO) nominated before mobilisation
- Stakeholder Engagement Plan (SEP) protocols explained to contractor team

8.6.2 Confirming Material Sources and Disposal Sites

The sourcing of raw materials and the disposal of spoil and surplus must comply with national regulations and the ESMP.

Mitigation Measures:

- Only pre-approved, licensed commercial quarries on Efate to be used
- Quarry licences must be submitted as part of the CESMP
- Spoil disposal agreements and permits confirmed before works begin
- Spoil reuse prioritised to minimise off-site disposal

8.6.3 Confirming Equipment and Plant Locations.

All proposed contractor facilities must be assessed before mobilisation, including:

- Laydown and storage areas
- Workshops, batching plants, fuel and lubricant storage

- Waste storage and sanitation infrastructure

Mitigation Measures:

- Contractor to submit facility layout plan for DSS and PMU approval
- No establishment of unapproved facilities
- All sites to be included in CESMP, with biosecurity and safety controls

8.6.4 Confirming Safeguards Personnel.

Safeguards compliance depends on the contractor's team having **dedicated personnel** with clear roles.

Minimum Requirements:

- Qualified **E&S Officer** responsible for CESMP preparation and oversight (ESS1, ESS2)
- Occupational Health & Safety (OH&S) Officer
- Community Liaison Officer (CLO)

These personnel are to be identified by name, with CVs provided, and confirmed in the CESMP. Failure to appoint qualified individuals is grounds for non-compliance.

8.6.5 Preparing the Contractor's Environmental and Social Management Plan (CESMP).

The CESMP is a **legally binding sub-plan** under the contract and forms the core of contractor safeguards implementation.

Requirements:

- Submitted a minimum of **21 working days** before intended mobilisation. Must include all required sub-plans:
    - Waste Management Plan
    - Traffic Management Plan
    - Earthworks Management Plan
    - Labour Management Plan and Code of Conduct
    - SEAH & STI Prevention Plan
    - Community Liaison Plan
    - Safety Plan
    - Chance Finds Procedure
    - Camp Management Plan (if required)
    - Quarry Management Plan (if required)
- Must attach all relevant **permits**, **facility licenses**, and **material sourcing approvals**
- Must include site-specific maps and control measures

Approval Process:

- The CESMP will be reviewed by the DSS and PMU.

- **CESMP must be approved by the PMU, DSS and World Bank before actual construction can begin.**

Training and Awareness:

- All contractor staff and subcontractors must be trained in CESMP content, including:
    - Grievance Redress Mechanism (Help Desk)
    - Incident reporting and tracking
    - SEAH prevention and response protocols

8.6.6 Residual Impacts

If the above safeguards are implemented effectively, **residual risks in the preconstruction phase are expected to be low**. Early-stage diligence ensures:

- The contractor is competent and accountable
- Risks are well understood and embedded into planning
- Sensitive environmental and community receptors are protected from the outset

8.7 Construction Phase Impacts and Mitigations

The construction phase covers the full scope of physical works—from mobilisation and site establishment to bulk earthworks, drainage, road construction, and demobilisation. This phase presents the most **intensive direct and indirect impacts**, and can give rise to **cumulative environmental and social risks** if not properly managed.

The CESMP must be developed, reviewed, and approved before construction begins and must cover all safeguards requirements. The CESMP shall incorporate a full suite of sub-plans addressing key risks, and the contractor must ensure **daily compliance, documentation, and reporting**.

Construction must not commence until the CESMP is reviewed and approved by the PMU and World Bank.

8.7.1 Overview of Construction Risks and Mitigation Measures

Activity	Potential Impacts (Direct / Cumulative)	Mitigation Measures	Relevant ESSs
Site clearing and excavation	Vegetation loss, soil erosion, sedimentation; cumulative flood risk	Limit clearing to defined areas; phased works; retain trees; install erosion controls (silt fences, bunds)	ESS1, ESS3, ESS6
Bulk earthworks and cut/fill	Landslip risk, slope instability, water runoff	Bench slopes; install temporary drains; avoid rainy season excavation; slope stabilisation	ESS1, ESS3

Activity	Potential Impacts (Direct / Cumulative)	Mitigation Measures	Relevant ESSs
Construction traffic and material haulage	Dust, noise, safety risks to pedestrians and schoolchildren; cumulative air quality and traffic burden	Traffic Management Plan (TMP); speed limits; watering haul roads; flag personnel near school	ESS1, ESS4, ESS10
Concrete works and machinery use	Air and noise emissions; occupational hazards	Maintain equipment; limit work hours; provide PPE; locate batching plant away from receptors	ESS2, ESS3, ESS4
Hazardous material use (fuel, lubricants)	Spills, groundwater contamination	Bunded storage; spill kits; spill response plan; worker training	ESS1, ESS3, ESS4
Waste generation (construction and domestic)	Illegal dumping, strain on landfill; cumulative solid waste load	Waste Management Plan; daily logs; use Bouffa landfill; sort and recycle waste where possible	ESS1, ESS3
Worker presence / camp (if applicable)	SEAH risk, communicable disease, resource stress	SEAH & STI Prevention Plan; CLO engagement; Camp Management Plan if required	ESS2, ESS4, ESS10
Proximity to sensitive receptors (Etas School, homes)	Noise, dust, safety hazards	Construction limited to 07:00–18:00; community notice; site fencing and signage	ESS1, ESS4, ESS10
Vegetation and fauna disturbance	Biodiversity loss, habitat fragmentation	Protect escarpment; prohibit poaching; retain large trees; inform workers of biodiversity rules	ESS6
Chance finds (archaeological)	Disruption to cultural heritage	Implement Chance Find Procedure; stop work and notify Vanuatu Cultural Centre	ESS8
Combined activity impacts (cumulative)	Increased flood risk, dust concentration, road wear	Schedule staging; avoid overlapping high-impact activities; monitor cumulative indicators	ESS1, ESS3, ESS4

Construction activities assessed as most likely to cause impacts include:

- Site clearing, grading, cut and fill, drainage excavation
- Hauling and transport of materials
- Operation of concrete and asphalt facilities (if used)
- Storage and use of fuels, lubricants, and chemicals
- Workforce mobilisation and any work camp operations (noting that a work camp will not be permitted or located at the work site)

Affected Receptors include: soil resources, air quality, flora and fauna, nearby households, sensitive receptors (school, pedestrians), and the contractor's own workers.

8.7.2 Cumulative Impacts and Interactions

Construction impacts may not only arise from a single activity but from **interacting activities** over time, or due to their **spatial concentration**. Key examples include:

Cumulative Risk	Contributing Factors	Potential Effects
Flooding or soil instability	Combined effect of road grading, vegetation clearance, heavy rainfall	Downstream flooding, sedimentation
Air quality degradation	Dust from haul routes + emissions from equipment + nearby landfill activity	Extended dust nuisance, health impacts
Noise disturbance	Heavy machinery + haul trucks + roadside drainage work near homes	Prolonged community nuisance, disrupted school operations
Waste overload	Construction waste + illegal dumping on vacant lots	Stress on Bouffa landfill, informal burning
Worker-community tension	Workforce presence + traffic + SEAH risk + lack of engagement	Social conflict, grievances, reputational damage

These cumulative impacts highlight the need for **phased coordination**, **timing of activities**, and **cross-sectoral mitigation** throughout the construction period.

8.7.3 Integrated Mitigation Measures for Construction

Site Phasing and Work Planning

- CESMP must phase high-impact works to avoid overlap (e.g. drainage and heavy trucking not concurrent near homes or schools)
- Sensitive works scheduled outside of heavy pedestrian periods
- Real-time supervision to ensure works stay within defined zones

Traffic and Air Quality

- Traffic Management Plan to avoid haul traffic during peak hours
- Coordination with landfill and utility traffic (Bouffa Road)
- Haul routes watered frequently; road edges protected from rutting

Vegetation and Erosion

- Escarpment protected at all times; no works permitted in exclusion zones
- Staged vegetation removal to limit large open soil areas
- Combined use of silt fences, bunding, and sediment traps downstream of works

Worker and Community Interaction

- Labour Management Plan and SEAH Prevention Plan implemented before mobilisation
- Workers trained in cultural sensitivity, community rules, grievance protocol
- Contractor to provide approved accommodation standards (if applicable)

Waste Management

- Waste Management Plan to include daily logs, photos of disposal, and signed disposal dockets
- Bouffa landfill coordination to avoid surges
- Designated clean fill sites for spoil reuse or disposal

8.7.4 Construction Monitoring and Adaptive Management

Cumulative impacts must be monitored over time, not just by activity. The CESMP must include:

- Site-wide monitoring (e.g. rainfall vs. runoff conditions, dust levels, community complaints)
- Weekly and event-triggered inspections (e.g. after heavy rains, roadside incidents)
- Clear escalation and reporting channels for emerging cumulative risks

Residual Impacts

Provided all controls are implemented, **residual construction-phase impacts will be low to moderate in significance** and confined to the construction period. Cumulative risks—particularly dust, noise, and sedimentation—are **manageable if construction is staged, mitigated, and actively supervised**.

8.8 Impacts on the Physical Environment

The Etas Subdivision's construction will temporarily alter the site's physical environment. However, with robust mitigation measures—most of which are embedded in the design and enforced through the CESMP—residual impacts are expected to be **short-term, reversible, and low to moderate** in magnitude.

8.8.1 Air Quality

Potential Impacts:

- Dust from excavation, unsealed haul roads, and stockpiles
- Emissions from construction vehicles and equipment
- Occasional odour issues if landfill fires reoccur (Bouffa landfill)

Cumulative Risks:

- Extended dust exposure for residents due to combined haul traffic, landfill activity, and on-site works
- Dust affecting Etas School and neighbouring households

Mitigation Measures:

- Watering of haul routes and work areas during dry periods
- Dust suppression at stockpiles and concrete batching areas
- No burning of construction waste
- Well-maintained machinery and vehicle emissions control
- Air quality monitoring near sensitive receptors if complaints arise
- Distribution and use of PPE (e.g. dust masks)

Residual Impact: Low, localised, and temporary if controls are applied.

8.8.2 Land and Geology

Potential Impacts:

- Soil erosion due to loss of vegetation
- Instability and minor landslip on slopes, particularly post-clearing
- Soil compaction and loss of topsoil quality

Cumulative Risks:

- Erosion from multiple sites at once (roads, lots, drains) can lead to downstream sedimentation
- Poor slope management increases downstream scouring risk

Mitigation Measures:

- Earthworks Management Plan and Erosion & Sediment Control Plan required in CESMP
- Cut slopes designed with benches and side drains
- Minimise exposed soil during rainy periods; stabilise slopes immediately
- Silt traps, bunds, and staged excavation to reduce sediment loss
- All spoil sorted for reuse or licensed disposal

Residual Impact: Moderate to low, managed through planning and monitoring.

8.8.3 Noise and Vibration

Potential Impacts:

- Noise from heavy machinery, excavation, and transport
- Vibration near existing structures, especially at boundaries

Cumulative Risks:

- Overlapping construction and traffic noise increases annoyance
- Disruption to Etas School if construction occurs during class hours

Mitigation Measures:

- Noise-reducing equipment; regular maintenance
- Limit working hours (07:00–18:00 only)
- Temporary relocation or schedule adjustment if school is impacted
- Portable noise meters for monitoring near residences and school
- Community notifications before high-noise works

Residual Impact: Low and manageable with scheduling and communication.

8.8.4 Water Quality

Potential Impacts:

- Runoff carrying sediments, oil, or construction debris

- Concrete wash water discharge
- Sanitation waste mismanagement

Cumulative Risks:

- Sediment and contaminants affecting groundwater
- Combined runoff from unsealed roads and cleared lots overwhelming infiltration capacity

Mitigation Measures:

- Stormwater managed on-site via infiltration basins
- Spill kits and refuelling protocols; dedicated washing areas
- No waste discharge within 30m of any drain or soakage area
- Worksite sanitation facilities to be sealed and regularly serviced
- Training for spill prevention and response

Residual Impact: Negligible if mitigation is followed.

8.8.5 Waste

Potential Impacts:

- Construction waste (vegetation, concrete, packaging)
- Improper storage or disposal of hazardous materials
- Informal dumping or burning

Cumulative Risks:

- Overload at Bouffa landfill if not managed or coordinated
- Incomplete removal of waste at demobilisation phase

Mitigation Measures:

- Waste Management Plan in CESMP with daily logs
- Waste sorted and stored securely before disposal
- Hazardous substances in bunded storage with spill containment
- No burning; disposal to Bouffa landfill or licensed off-site location
- Reuse of cleared timber by local communities

Residual Impact: Low if WMP implemented effectively.

8.8.6 Biological Environment

Potential Impacts:

- Loss of common flora and fauna habitat
- Disturbance of birds, reptiles, and insects during construction
- Introduction of invasive species via machinery or fill

Cumulative Risks:

- Tree loss across reduces ecological value
- Dust and noise may deter fauna from broader area

Mitigation Measures:

- Avoid removal of mature and culturally significant trees (e.g., nambanga)
- Implement procedure for Discovery of a Birds Nest in a tree slated for removal
- Escarpment area fully protected and demarcated
- Invasive species control included in CESMP with incident reporting protocol
- Replanting or green space development to offset cleared vegetation (under PMU/SPGC responsibility)

Residual Impact: Low if vegetation controls and post-construction landscaping are enforced.

Summary

Impact Category	Residual Impact (Post-Mitigation)
Air Quality	Low
Soil and Geology	Moderate to Low
Noise and Vibration	Low
Water Quality	Negligible
Waste	Low
Biological Environment	Low

8.8.7 Impacts Procedure for Discovery of Birds Nest During Construction

1. Immediately Halt Work in the Vicinity

- Stop all physical activity (cutting, clearing) of the tree containing the nest.
- Inform the **site supervisor and the contractor's Environmental and Social Officer** immediately.

2. Record and Protect the Nest

- Record the **location (GPS or site map)**, date, and any observable species (if identifiable).
- Install **temporary flagging or fencing** around the tree to protect it from accidental disturbance.
- **Do not touch or move** the nest or tree unless advised by a qualified environmental expert.

3. Notify the PMU and DSS

- The contractor's E&S Officer must notify the **Design and Supervision Specialist (DSS)** and **PMU**.
- If the project includes a biodiversity advisor or has an MOU with the **Vanuatu Department of Environmental Protection and Conservation**, notify them.

4. Assess Nesting Status

- Wait and observe: Is the nest **active** (eggs or chicks present) or **abandoned**?
- If active: nesting birds must be **left undisturbed** until fledglings leave — typically 2–4 weeks depending on species.
- If unknown: err on the side of caution and treat as active.

5. Adjust Construction Schedule if Needed

- Adjust site works and equipment movement to **avoid disturbing the tree until the nesting period ends**.
- If this affects the critical path for works, consider **resequencing** construction activities in consultation with the DSS.

6. Document and Include in CESMP

- Update the **Environmental Incident Register**.
- Ensure future toolbox talks include this procedure.
- Consider incorporating a **nesting bird protocol** or a broader **Wildlife Encounter Procedure** into the CESMP.

8.9 Impacts on Human and Built Environments

The Etas Subdivision project intersects closely with the lives of local residents, road users, nearby property owners, and workers. Construction activities will temporarily increase risks to **health, safety, mobility, infrastructure, and land use**. These risks are manageable if mitigated through effective planning, stakeholder communication, and strict CESMP implementation.

Activity / Condition	Potential Impacts (Direct / Cumulative)	Mitigation Measures	Relevant ESSs
Construction near Etas Road, Stella Mare, and school	Dust, noise, visual disturbance, traffic risks to children and pedestrians	Fencing, signage, TMP with speed limits and flag personnel, works during daylight only	ESS1, ESS4, ESS10
Presence of workers near communities	SEAH risks, social tension, communicable disease spread	Labour Management Plan, Code of Conduct, SEAH & STI Prevention Plan, community engagement via CLO	ESS2, ESS4, ESS10
Increased truck traffic and haulage	Road wear, traffic delays, pedestrian safety hazards	TMP with phasing, haul route condition surveys, repairs post-construction	ESS1, ESS4
Construction near sensitive receptors (Etas School, residences)	Noise and access disruption during school hours	Advance notice, time restrictions (07:00–18:00), noise suppression, coordination with school	ESS4, ESS10
Utility works or road drainage tie-ins	Disruption to water/power supply, accidental damage to infrastructure	Utility coordination (UNELCO), permits obtained, restoration plans in CESMP	ESS1, ESS4
Waste disposal (construction + domestic)	Overload of Bouffa landfill, risk of illegal dumping	Waste Management Plan, segregation, reuse of spoil, coordination with landfill operator	ESS1, ESS3

Activity / Condition	Potential Impacts (Direct / Cumulative)	Mitigation Measures	Relevant ESSs
Cultural chance finds	Loss of heritage, site disturbance	Chance Find Procedure in CESMP, immediate halt and notification to Cultural Centre	ESS8
Communicable disease and SEAH risks	Community health impacts, reputational risks	Approved training provider, SEAH and health awareness programs, CLO monitoring	ESS2, ESS4, ESS10
Noise and vibration from machinery	Nuisance to residents and sensitive sites	Time restrictions, use of quieter machinery, mobile noise meters	ESS1, ESS4

8.9.1 Impacts on Communities & Sensitive Receptors and Vulnerable Groups

Potential Impacts:

- Safety risks for pedestrians, especially **children walking to Etas School**
- Noise, dust, and access disruption for **adjacent homes and informal settlements**
- SEAH or tension due to presence of workers in a semi-rural community
- Influx effects if workers not trained on local norms or grievance protocols

Cumulative Risks:

- Repeated short-term nuisances (dust, noise, traffic) affecting community support
- Community perception of inequity or lack of inclusion if communication is inadequate

Mitigation Measures:

- Stakeholder Engagement Plan implemented by contractor with clear grievance protocol
- Community Liaison Officer (CLO) appointed and present during mobilisation
- Workers housed off-site; construction of work camp prohibited
- SEAH prevention, and local hiring prioritised
- Advance notice (7 days minimum) for roadworks or site activities near residences

8.9.2 Sensitive Receptors

While the project site is largely self-contained, several **sensitive receptors** are located near the project boundaries:

- Residences on the southern and eastern borders (Etas Road and Stella Mare)
- **Etas School**, accessed via pedestrian routes near the project site
- **Pedestrians**, including children, elderly, and women walking near the site or along the Efate Ring Road

Mitigation Measures:

- Traffic Management Plan (TMP) to include safe passage zones for schoolchildren
- Use of signage, flag personnel (ideally from local community), and speed limits (max 20 kph near receptors)

- Controlled entry and fencing to prevent unauthorised access to work zones
- Engagement with Etas School to coordinate scheduling of noisy works

8.9.3 Impacts on Local Infrastructure

Potential Impacts:

- Wear and tear or damage to **Etas Road and Efate Ring Road**
- Disruption to existing utilities (e.g. power, water) if not mapped and coordinated
- Waste disposal at **Bouffa Landfill** potentially exceeding capacity if not phased

Cumulative Risks:

- Overuse of access roads if multiple phases or external projects operate simultaneously
- Strain on landfill services if reuse and recycling aren't prioritised

Mitigation Measures:

- Condition survey of haul routes before and after use
- All road damage attributable to project must be repaired by contractor before demobilisation
- Consultation with utility provider (UNELCO) to avoid disruptions and manage reconnections
- Waste volumes tracked and coordinated with landfill authorities; reduce, reuse, and segregate waste on site

8.9.4 Cultural Heritage and Chance Finds

No known burial or culturally significant sites exist within the project boundary. However, given proximity to the **Teouma Lapita site**, the area holds **low but non-negligible archaeological potential**.

Mitigation Measures:

- Chance Find Procedures for cultural finds and UXO to be included in CESMP
- Work to stop immediately if relics or burial remains are encountered
- Vanuatu Cultural Centre to be contacted for investigation and clearance of cultural finds
- Vanuatu Military Defence Force to be contacted for removal of UXO
- Worker training on cultural sensitivity and response protocols

8.9.5 Construction Noise Impacts on Human Settlements

Noise impacts will mainly arise from:

- Excavation and grading equipment
- Haul trucks and loaders
- Temporary concrete batching or material handling

Mitigation Measures:

- Limit noisy activities to **07:00–18:00**

- Use of mufflers and noise suppression devices
- Temporary noise barriers near work areas if needed
- Prior notice to community before particularly disruptive works
- Noise not to exceed **45 dBA** at residential boundaries or school

8.9.6 Construction Traffic and Access.

Potential Impacts:

- Increased heavy vehicle traffic on local roads
- Risks to children, elderly, and pedestrians
- Obstruction of local access to homes or services

Mitigation Measures:

- TMP to manage haulage timing, speed, and routes
- Restrict materials transport to **daylight hours**
- Community-based traffic control near school and settlements
- Road signage and safety messaging installed at key points

8.9.7 Risk of Spread of Communicable Diseases.

Workers moving between Port Vila and the Etas site may pose a **low but real risk of disease transmission**, including STIs and respiratory illness. **Women and vulnerable groups** are disproportionately impacted by SEAH and communicable disease risks.

Mitigation Measures:

- Approved service provider to deliver **STI and SEAH Prevention Training**
- Community awareness activities included in SEAH and health plan
- Worker code of conduct enforced through Labour Management Plan
- CLO and contractor supervisors to monitor compliance

Residual Impact Summary

Impact Type	Residual Impact (Post-Mitigation)
Community Safety and Health	Low to Moderate
Infrastructure and Roads	Low
Cultural Heritage & UXO	Very Low
Noise and Disturbance	Low

Impact Type	Residual Impact (Post-Mitigation)
SEAH and Social Risks	Low (with active oversight)

8.10 Occupational Health & Safety (OH&S).

The contractor must prepare a **Contractor Safety Plan (CSP)** as part of the CESMP, addressing all OHS requirements and ensuring compliance with the Vanuatu Employment Act, the **World Bank's EHS Guidelines**, and the **World Bank ESIRT (Environmental and Social Incident Response Toolkit)** protocols.

Occupational Health and Safety – Impact and Mitigation Matrix

Activity / Risk Area	Potential Impacts	Mitigation Measures	Relevant ESSs / Guidelines
Excavation and height work	Falls, trips, injuries from unstable edges or heights	Guardrails, fencing, PPE, safe access paths, signage	ESS2, WB EHS Guidelines
Operation of vehicles and machinery	Struck-by accidents, reversing injuries, vehicle collisions	Trained operators, reversing alarms, traffic flow planning, high-vis gear	ESS2, ESS4
Dust, fumes, noise, vibration	Respiratory illness, hearing loss, fatigue	PPE (masks, earplugs), equipment maintenance, noise limits, exposure monitoring	ESS2, ESS3
Manual handling and lifting	Musculoskeletal injuries	Training in lifting techniques, use of equipment for heavy loads	ESS2
Chemical and fuel use	Spills, exposure to toxic substances, burns	Bunded storage, spill kits, MSDS use, proper labelling, PPE	ESS1, ESS3
Lack of sanitation or hygiene	Disease transmission, discomfort, reputational damage	Segregated toilets, clean potable water, regular cleaning	ESS2, ESS4
First aid and emergency response gaps	Delayed treatment, escalation of injuries	First aid stations, trained responders, posted emergency info	ESS2, WB EHS
Lack of training and PPE use	Unsafe practices, higher incident rates	Daily toolbox talks, induction, free PPE provision, enforcement	ESS2

Activity / Risk Area	Potential Impacts	Mitigation Measures	Relevant ESSs / Guidelines
Incident reporting delays	Failure to address risks or report to WB	CESMP includes incident log, notification protocol, ESIRT alignment	ESS1, ESS2

8.10.1 Key Occupational Risks

Identified occupational health and safety risks include:

- Falls, slips, trips during excavation, scaffolding, or work at height
- Vehicle or equipment-related injuries
- Noise and vibration exposure from machinery
- Dust inhalation and poor air quality
- Manual handling and repetitive strain injuries
- Exposure to fuels, lubricants, concrete additives, and other hazardous materials
- Inadequate hygiene and sanitation at work sites

8.10.2 Required Mitigation Measures

To reduce and manage OHS risks, the contractor must implement the following measures:

Pre-Mobilisation Planning

- Appoint a **qualified Occupational Health and Safety Officer** prior to mobilisation (at least one month before construction begins)
- Prepare and submit a **Contractor Safety Plan (CSP)** for review and approval by the DSS
- Ensure all contractor staff, subcontractors, and workers receive **induction training** covering:
    - OHS protocols
    - Emergency response
    - Task-specific hazards and use of PPE
    - Grievance mechanisms
    - Incident reporting procedures

Worksite Safety Controls

- Install fencing, signage, and barriers around hazardous areas (e.g. excavations >1 m, vehicle crossings, fuel storage areas)
- Maintain clear access/egress routes on site; implement safe traffic flow plans
- Install **reversing alarms** and hazard lights on vehicles and plant
- Provide **fully equipped first aid kits** at all work zones and in all project vehicles
- Designate at least one **trained first aid responder** per shift
- Display emergency contacts and safety instructions prominently on site

Personal Protective Equipment (PPE)

- Provide all workers with **PPE suited to their job function**, including:
    - Hard hats, gloves, high-visibility vests
    - Steel-toe boots, safety goggles, hearing protection
    - Respirators or dust masks where exposure to particulate matter is expected
- Ensure all PPE is provided **free of charge** and replaced as needed
- Monitor PPE usage through site supervision and toolbox talks

Sanitation and Welfare Facilities

- Provide **gender-segregated sanitation facilities**, handwashing stations, and potable water on all sites
- Keep facilities clean, accessible, and adequately stocked at all times
- Ensure break areas are shaded, clean, and safe

8.10.3 Incident Management and Emergency Preparedness

The CESMP must include a comprehensive **Emergency Response Plan (ERP)** as part of the contractors Safety Plan to address incidents such as:

- Fires, chemical spills, or explosions
- Serious injury or fatality
- Vehicle accidents
- Exposure to hazardous materials

Incident Response Requirements:

- Immediate on-site treatment and activation of emergency services
- Notification to the DSS and PMU within 24 hours of a serious incident
- Follow-up reporting using World Bank **ESIRT** protocols
- Root cause analysis and remedial action plan for every serious incident

8.10.4 Training and Awareness

- Weekly **toolbox talks** to be conducted by the contractor's OH&S Officer, covering:
    - Job-specific risks
    - Lessons learned from recent incidents
    - Emergency drills and proper equipment handling
- Induction for all new staff and subcontractors before starting work
- Visitors to site must be briefed on health and safety rules and escorted at all times

8.10.5 Monitoring and Compliance

- The contractor's OH&S Officer will:
    - Keep records of all training, inspections, incidents, and corrective actions
    - Maintain daily and weekly safety checklists

- Submit OHS reports to the DSS and PMU monthly or as required

- The DSS will conduct **random spot checks** to verify compliance
- Non-compliance or unsafe acts may result in work stoppage and sanctions

Residual Impact

With the above measures implemented, the **residual risks to worker health and safety are expected to be low to moderate**, depending on the complexity of the task and contractor compliance. Active monitoring and ongoing training are essential to prevent avoidable incidents.

8.11 Community Health and Safety

The Etas Subdivision project poses several risks to local communities and public safety during construction and eventual operation. These include traffic hazards, construction-related injury risks, public exposure to disease transmission, and the potential for Sexual Exploitation, Abuse, and Harassment (SEAH). The presence of a non-resident workforce and works conducted near existing pedestrian routes (including those used by schoolchildren) requires proactive, continuous management.

While many of these risks are temporary, they must be addressed through planning, training, public communication, and operational controls outlined in the CESMP.

Community Health and Safety – Impact and Mitigation Matrix

Activity / Risk Area	Potential Impacts	Mitigation Measures	Relevant ESSs
Construction near roads and homes	Accidents, unsafe pedestrian routes, risk to children	TMP with signage, speed limits (20 kph), flag personnel near Etas School and residences	ESS4, ESS10
Unauthorised access to site	Injuries, exposure to hazards, child safety risks	Full perimeter fencing, security, signage, barriers over trenches	ESS4
Presence of workers in communities	SEAH risk, spread of STIs, community discomfort	SEAH & STI Prevention Plan; approved service provider to train workers; CLO appointed	ESS2, ESS4, ESS10
Excavations and storage of hazardous materials	Physical injuries to public; fall risk; exposure to pollutants	Covered trenches; spill prevention; restricted storage zones; warning signs	ESS4
Inadequate communication with community	Mistrust, misinformation, resistance to project	Pre-construction briefings; public noticeboards; CLO available to community	ESS10
Workers' camp (if proposed)	Health risks, conflict with community, poor hygiene	Camp at worksite is to be prohibited; alternative camps to be subject to pre-approved location and Camp Management Plan; lighting, sanitation; approved before handover	ESS2, ESS4

Activity / Risk Area	Potential Impacts	Mitigation Measures	Relevant ESSs
Traffic from construction	Increased risk to pedestrians, schoolchildren, road damage	TMP with haul route maps, signage, community-based traffic marshals	ESS4
Community exposure to noise and dust	Nuisance, health effects (especially for vulnerable groups)	Restrict noisy work to 07:00–18:00; dust suppression, PPE for workers	ESS1, ESS4
Limited access to grievance redress	Escalating dissatisfaction, unresolved issues	GRM publicised on-site; CLO records and escalates complaints; Help Desk maintained	ESS10

8.11.1 Key Community Health and Safety Risks

Construction Phase Risks:

- Injuries or accidents from **construction vehicles**, machinery, or unsecured work zones
- Exposure to **dust, noise, and debris**
- Risk of **SEAH** and spread of **Sexually Transmitted Infections (STIs)** due to workforce-community interactions
- Exposure to open excavations, trenches, or stored materials
- Children or unauthorised persons entering hazardous areas
- Public dissatisfaction or mistrust if not informed or engaged

Operation Phase Risks:

- Inadequate lighting or security on subdivision roads
- Increased public transport or pedestrian traffic without proper safety design
- Improper use of green spaces or infrastructure
- Health impacts from unmanaged drainage, solid waste, or failed sanitation systems

8.11.2 Mitigation Measures During Construction

To protect nearby communities—including residents, road users, and vulnerable groups such as children, elderly, and women—the contractor shall implement the following:

Site Security and Hazard Management

- Full perimeter fencing of active construction zones
- Signage indicating restricted access, danger zones, and emergency contacts
- 24-hour security to prevent unauthorised access
- Safety barriers and covers over all excavations or deep trenches

Traffic and Pedestrian Safety

- Traffic Management Plan (TMP) to include signage, speed limits (20 kph), and flag personnel near Etas Road and Etas School

- School crossing zones to be supported by **community-based flag attendants**, with women actively encouraged to participate
- Advance notice to community (7 days minimum) for any roadworks or traffic changes

Community Liaison and Grievance Redress

- Appoint and train a **Community Liaison Officer (CLO)** to serve as the bridge between the project and affected stakeholders
- Disseminate site contact information and access to the **project grievance redress mechanism (GRM)**, also referred to as the Help Desk
- Provide **visible information boards** at the work site with project and GRM details

Disease Prevention and SEAH Management

- Engage a qualified **service provider** to deliver SEAH and STI awareness training to all workers prior to mobilisation and quarterly thereafter
- Implement a **SEAH & STI Prevention Plan** (sub-plan to the CESMP), approved by DSS
- Public awareness campaigns conducted in local language before mobilisation
- Workers trained in cultural norms, gender sensitivity, and behavioural expectations

8.11.3 Public Information and Risk Communication

The contractor, in coordination with the CLO and DSS, shall:

- Hold **pre-construction public meetings** with adjacent households and institutions
- Install **noticeboards with updated construction schedules** and key contacts
- Ensure **workers do not approach or harass local residents** and are fully informed of community conduct standards
- Ensure **public signage, flagging, and lighting** are maintained in pedestrian areas

Residual Impact and Risk

If mitigation measures are implemented in full, risks to public health and safety will be **moderate during construction** and **low during operation**. Key to this is the **strength of community engagement**, **training and supervision of workers**, and the **contractor's responsiveness** to incidents or grievances.

8.12 Impacts of Ancillary Activities

Ancillary Activities – Impact and Mitigation Matrix

Ancillary Activity	Potential Impacts	Mitigation Measures	Relevant ESSs
Quarrying / aggregate sourcing	Erosion, habitat loss, unlicensed extraction	Use licensed commercial quarries; prepare Quarry Management Plan if contractor-operated	ESS1, ESS3, ESS6

Ancillary Activity	Potential Impacts	Mitigation Measures	Relevant ESSs
Crusher / batching plant (off-site)	Dust, noise, community disturbance	Site >1 km from receptors; permits required; include in Dust & Noise Plans	ESS1, ESS3, ESS4
Laydown yard	Land clearing, runoff, poor sanitation	Site approval by DSS; Laydown/ Management Plan in CESMP	ESS1, ESS4
Contractor camp (off-site)	Land clearing, runoff, poor sanitation	Site approval by DSS; Camp Management Plan in CESMP	ESS1, ESS4
Spoil disposal off-site	Sediment loading, illegal dumping	Identify and license sites in advance; include in Waste Management Plan	ESS1, ESS3
Transport to/from ancillary sites	Road degradation, traffic conflict	Include haul routes in TMP; coordinate with local authorities	ESS1, ESS4
Unregulated site use or access	Community conflict, SEAH risk, reputational issues	Obtain legal tenure, consult with communities, include grievance redress	ESS4, ESS10
Cumulative site impacts	Off-site erosion, biodiversity loss, unmanaged runoff	Integrate ancillary site supervision into weekly inspections and monitoring	ESS1, ESS6

Ancillary activities are non-core project functions that support construction but occur **outside the main subdivision footprint**. These include temporary operations such as **material sourcing and extraction, equipment laydown areas, contractor offices, and potential off-site concrete batching or crushing plants** (no asphalt or bitumen are proposed for Etas subdivision roads). While these activities may not be directly funded under the project, their impacts fall within the project's environmental and social management responsibilities under **ESS1 and ESS3**.

For the Etas Subdivision, most construction-related operations are expected to occur **within the 10-hectare site**, using commercial suppliers and licensed facilities. However, **any offsite ancillary activities must be subject to due diligence, planning approval, and CESMP controls.**

8.12.1 Potential Ancillary Activities

Ancillary activities that may be proposed or established by the contractor include:

- **Quarrying or extraction** of aggregates (if not commercially sourced)
- **Temporary crusher or concrete batching plant** facilities (if not on-site)
- **Laydown yards, storage areas, or contractor yards**
- **Worker rest areas, sanitation, or off-site logistics staging**
- **Spoil disposal areas**, if not reused on site

These activities, though supporting the main works, may **increase environmental footprint, affect nearby communities**, or result in **unregulated impacts** if not covered by safeguards instruments.

8.12.2 Environmental and Social Risks

Risk Area	Potential Impacts
Land and Resources	Unauthorised land use, vegetation clearance, erosion
Air Quality	Dust from crushers, material loading, and stockpiles
Noise	Localised disturbance from equipment or material processing
Water	Sedimentation or contamination from runoff or waste storage
Waste	Accumulation of spoil, debris, or fuel drums
Community	Conflicts with local landowners, safety risks, SEAH risks
Biodiversity	Disturbance to flora/fauna from unregulated clearance
Legal	Unlicensed use of land or extraction, regulatory non-compliance

8.12.3 Mitigation Measures

All ancillary activities must be planned, approved, and controlled under the CESMP. The following measures are mandatory:

Site Selection and Approval

- All proposed ancillary sites must be **identified in advance by the contractor**
- Sites must have proper **land tenure arrangements**, licenses, and approvals from relevant authorities
- DSS must conduct a **site inspection and due diligence** before use
- Use of existing licensed commercial facilities (e.g. quarries, batching plants) is strongly preferred

Sub-Plan Integration

Ancillary activities must be covered under CESMP sub-plans, including:

- **Quarry Management Plan** (if applicable)
- **Laydown Area and Plant Management Plan**
- **Waste Management Plan** covering temporary storage and disposal
- **Traffic Management Plan** to include haul routes to/from ancillary sites
- **Dust and Noise Management** protocols where activities affect receptors
- **Grievance and community liaison procedures** for affected neighbours

Monitoring and Documentation

- All permits, approvals, and site plans must be included in the CESMP
- Contractors must maintain a register of ancillary sites with GPS coordinates, type of activity, and operational period
- Weekly inspections and incident reporting must be extended to all ancillary facilities

8.12.4 Restrictions and Compliance Conditions

- **No ancillary sites may be used without prior written approval** from the DSS and PMU
- Sites located in ecologically sensitive areas, near waterways, or within community lands without formal lease arrangements are **strictly prohibited**
- Any material extraction must occur only from **licensed and approved quarries**, with submission of licenses and transport manifests

Residual Impacts

Provided that ancillary sites are:

- Properly licensed,
- Covered by CESMP sub-plans,
- Monitored by the DSS and PMU,

... then **residual impacts from ancillary activities are expected to be low** and temporary in nature. However, failure to manage these activities may result in **off-site environmental damage, community grievances, or reputational risks** to the project.

8.13 Site Demobilisation and Rehabilitation

The conclusion of construction activities must be followed by a structured demobilisation process to ensure that all **temporary works, waste materials, machinery, and contractor facilities** are safely removed and that **disturbed areas are restored**. Poor demobilisation has previously resulted in legacy impacts, community dissatisfaction, and government expenditure to clean up abandoned contractor sites.

As part of this ESIA, site demobilisation is considered a **formal project phase**, subject to environmental and social safeguards under **ESS1, ESS3, and ESS4**.

Demobilisation and Rehabilitation – Impact and Mitigation Matrix

Activity	Potential Impacts (Direct / Cumulative)	Mitigation Measures	Relevant ESSs
Removal of equipment, temporary facilities	Abandoned infrastructure, trip hazards, pollution	Inventory and full removal; sign-off checklist; DSS/PMU inspection	ESS1, ESS4

Activity	Potential Impacts (Direct / Cumulative)	Mitigation Measures	Relevant ESSs
Construction waste and leftover material	Illegal dumping, environmental contamination, aesthetic degradation	Disposal at Bouffa landfill; no burning/burying; hazardous waste treated separately	ESS1, ESS3
Disturbed land areas (e.g., access paths, stockpiles)	Erosion, sedimentation, weed colonisation	Grading, topsoil replacement, replanting or revegetation	ESS1, ESS3, ESS6
Erosion control devices (silt fences, bunds)	Sediment release post-construction if removed prematurely	Only remove after slopes stabilised; remove as per CESMP plan	ESS1
Non-compliance with rehabilitation obligations	Long-term liability on PMU; community grievance	No Completion Certificate until full rehabilitation; DSS/PMU approval required	ESS1, ESS4
Missed replacement of felled trees or green space	Loss of ecosystem services; community dissatisfaction	SPGC or MoLNR may undertake greening to offset vegetation loss	ESS6, ESS10

8.13.1 Scope of Demobilisation Activities

The contractor will be responsible for fully implementing the following activities:

- **Removal of all construction equipment, temporary buildings, and storage containers**
- **Clean-up and disposal of all construction waste**, including residual hazardous materials
- **Restoration of the contractor's work yard, laydown areas, and any off-site facilities**
- **Rehabilitation of disturbed land**, including grading, topsoil replacement, and revegetation
- **Final cleanup of roadside drains, stormwater systems, and erosion controls**

These actions must be completed **before the issuance of a Completion Certificate** and will be verified through final inspections by the **DSS and PMU.**

8.13.2 CESMP Requirements for Demobilisation

The CESMP must include a detailed **Demobilisation and Site Rehabilitation Plan**, covering:

- Inventory of all temporary facilities and assets to be removed
- Disposal plans for construction and hazardous waste
- Schedule and methodology for land restoration (topsoil, drainage, planting)
- Plans for removing sediment controls (e.g., silt fences) once slopes are stabilised
- A final site inspection and sign-off checklist

The contractor shall not rely on the Defects and Liability Period to complete demobilisation tasks. These are to be fulfilled **as part of contract closure**.

8.13.3 Restoration of Disturbed Areas

All disturbed areas—including staging areas, material stockpile zones, cut-and-fill zones, and access tracks—must be:

- **Graded to stable contours**
- **Covered with stored or imported topsoil**
- **Replanted or seeded with grass or vegetation appropriate to site conditions**

If tree removal was unavoidable during works, the PMU may take responsibility for **planting replacement trees** or establishing **community green space** through the SPGC or MoLNR.

8.13.4 Waste and Material Disposal

All remaining construction and packaging waste must be:

- **Sorted, documented, and disposed of** at the Bouffa landfill or another licensed site
- No material may be **buried or burned** on-site
- **Hazardous substances** (e.g., oils, paints, lubricants) must be transported in sealed containers and disposed of in accordance with the Waste Management Act (2014) and related regulations

8.13.5 Demobilisation Approval and Final Audit

A **final environmental and social inspection** will be conducted by the DSS and PMU to confirm that all requirements have been met. This inspection will:

- Verify removal of equipment and waste
- Confirm rehabilitation of affected land and drainage
- Assess the effectiveness of erosion controls and site restoration
- Document any residual issues for resolution prior to issuance of the Completion Certificate

Only after this verification may the project be deemed complete and entered into the post-construction defect monitoring phase.

Residual Impacts

If demobilisation and rehabilitation are **properly planned, implemented, and verified**, residual impacts will be minimal. However, failure to meet these obligations may lead to:

- Environmental degradation (e.g. erosion, weed invasion)
- Community grievances or safety risks
- Reputational and legal risks for the contractor and project implementers

8.14 Operation, Governance and Inclusive Management of the Subdivision

Upon completion of civil works and handover, the Etas Subdivision will transition to its operational phase, with responsibilities for site management, infrastructure maintenance, and ongoing sales and settlement processes shifting to the Ministry of Lands and Natural Resources (MoLNR), and ultimately to the Shefa Provincial Government Council (SPGC). This section identifies the key environmental and social risks associated with the marketing, sales and operation of the subdivision as a whole, excluding associated facilities, which are covered separately.

Note: Environmental and social impacts related to **Associated Facilities (AFs)**—including the community market, residential housing construction, recreational spaces, and off-site drainage—are addressed in full in **Section 8.15: Associated Facilities**. This section focuses specifically on core subdivision infrastructure, land management, and long-term sustainability.

Operation of the Subdivision – Impact and Mitigation Matrix

Operational Risk Area	Potential Impacts	Mitigation / Management Measures	Responsible Entity	Relevant ESSs
Stormwater drainage	Blocked drains, localised flooding, erosion	Routine inspections, community reporting, homeowner compliance with roof drainage requirements	SPGC, MoLNR	ESS1, ESS4
Solid waste disposal	Illegal dumping, health and sanitation risks	Regular collection services, public education, SPGC coordination with landfill	SPGC	ESS3, ESS4
Traffic through subdivision	Safety risks to pedestrians, noise, dust	Speed limits, traffic calming, signage, planned bus stops	SPGC, MoLNR	ESS4
Green space and park misuse	Degradation, illegal gardening or tree removal	Community engagement, maintenance schedule, by-laws or user agreements	SPGC, local residents	ESS6, ESS10
Infill construction (lot development)	Dust, noise, unsafe practices, poor sanitation	Enforcement of building permits and septic approval; public guidance for new owners	MoLNR	ESS1, ESS4
Sanitation and septic systems	Groundwater contamination, odour, public health risk	Vanuatu Building Code compliance, monitoring of septic system quality	MoLNR, homeowners	ESS3, ESS4
Lack of subdivision oversight	Gradual deterioration of infrastructure, safety risks	Formal handover to SPGC, maintenance budgeting, creation of resident liaison or governance committee	MoLNR, SPGC	ESS1, ESS10

8.14.1 Operational Responsibilities

- **MoLNR** will be responsible for managing the subdivision until lots are transferred and development commences. Once purchased, the title holders or lessee will be responsible for their individual blocks.
- **SPGC** is expected to assume oversight responsibilities for:
    - Subdivision infrastructure maintenance (roads, drains, lighting)
    - Green space upkeep and public facility management
    - Solid waste collection and public safety
    - Processing of building permit applications from individual title holders, for construction of septic, dwellings and other buildings and ensuring permit conditions are met.
- Private leaseholders will be responsible for their **individual residential lots**, including building construction, on-site sanitation systems, and landscaping.

8.14.2 Key Environmental and Social Risks

Risk Area	Potential Operational Impacts
Drainage and Flooding	Blockage of stormwater drains leading to flooding or erosion
Solid Waste	Illegal dumping or delayed collection affecting health and aesthetics
Traffic and Safety	Speeding or unsafe use of subdivision roads endangering residents
Green Space Degradation	Misuse of parks for gardening, tree felling, or squatting
Noise and Dust from Lot Development	Nuisance to early residents if building activity is unmanaged
Inadequate Septic Systems	Groundwater or public health risks from non-compliant sanitation
Maintenance Neglect	Accumulated impacts reducing infrastructure life span and safety
Unregulated Use of Public Facilities	Overuse or safety hazards if not managed by SPGC or community bodies

8.14.3 Mitigation and Management Measures

The following management and mitigation actions will be implemented to address the above risks:

- **Drainage and Stormwater**
    - SPGC to establish a regular inspection and maintenance schedule
    - Lot owners required to connect roof drainage to approved outlets
- **Solid Waste and Sanitation**
    - Routine waste collection coordinated by SPGC or private contractor
    - Education on proper use of landfill and recycling options
    - On-site sanitation systems to be approved prior to construction
- **Public Space and Green Area Management**
    - Protection of retained nambanga trees and public parks
    - Community committees or by-laws may support local stewardship
    - Landscaping and replanting coordinated with SPGC or MoLNR
- **Traffic Management and Road Use**
    - Install signage, speed humps, and traffic calming devices
    - Encourage formalised pedestrian pathways and bus stops
- **Governance and Oversight**
    - Handover of subdivision management to SPGC with resource allocation
    - Development of formal maintenance protocols and community engagement mechanisms

8.14.4 Beneficiaries, Tenure Arrangements and Social Inclusion

The Etas Subdivision was developed to provide access to secure, resilient, and affordable land tenure for low- to lower-middle-income ni-Vanuatu households, in alignment with the goals of the VARS Project. During the operational phase, maintaining the equity, transparency, and sustainability of the subdivision will require coordinated oversight of tenure agreements, public space protection, and community stewardship mechanisms.

Target Beneficiaries and Eligibility Criteria

The development of the Marketing Strategy and Eligibility Criteria for the Etas Subdivision was informed by extensive stakeholder engagement led by MoLNR with technical support from Land Equity International. Emphasis was placed on consulting with potential lot purchasers, including through focus group discussions (FGDs) with residents from informal settlements, seasonal workers, women's associations, and low-income households in Greater Port Vila. These consultations helped to shape the eligibility thresholds (e.g., income brackets), refine application procedures, and ensure that the marketing campaign would be accessible, inclusive, and responsive to the needs of the target demographic. Participants' feedback directly influenced the introduction of priority groups (e.g., women-led households), the adoption of multiple communication channels (including SMS, community meetings, and radio), and the design of a fair and transparent lot allocation and verification process.

Residential lots will be allocated to individuals or households who meet defined eligibility criteria. To qualify for one of the 130 residential lots, applicants must meet **four mandatory criteria**:

1. **Citizenship**: Must be a citizen of the Republic of Vanuatu.
2. **Age**: Must be at least 18 years old at the time of application.
3. **Land Ownership**: Must not currently hold or have held a lease, sublease, strata or community title, or a green certificate for any land in Vanuatu.
4. **Income**: Gross household income must fall between 45,000 and 87,000 Vatu per month, with consideration given to adjusting for inflation and regional cost-of-living variations.

Additionally, **three priority categories** are applied to enhance access for underrepresented groups:

- Female-led households
- Households with dependents
- Households currently living in informal or overcrowded settlements

A transparent **application and verification process** will include public advertising, a lottery draw if oversubscribed, and a robust documentation-based verification phase. Selected applicants enter a qualification window to meet preconditions including financial literacy and builder awareness training. This process will be implemented through a contract with a real estate agent, with monitoring and supervision provided by Land Equity International.

Marketing Strategy

The Marketing Strategy, implemented by the MoLNR with technical support from Land Equity International, is designed to promote the Etas subdivision in a fair, transparent, and inclusive manner. It targets both potential beneficiaries and non-beneficiary stakeholders including Shefa Provincial Government, banks, builders, and NGOs. Objectives of the marketing strategy include:

- Maximize awareness among eligible demographics
- Encourage applications from all priority groups
- Build public confidence in the transparency and fairness of the selection process

Key Communication Channels

The marketing strategy employs a wide array of communication tools to ensure inclusivity and reach:

- Website and downloadable materials
- In-person Help Desk and Application Window
- Traditional media (TV, radio, newspapers)
- SMS push messaging
- Community information sessions through Shefa and Port Vila Municipal Council networks
- Engagement with seasonal workers via the Department of Labour and Facebook groups

All marketing content is delivered in **Bislama, English, and French**, with emphasis on Bislama for primary outreach.

Land Tenure Structure and Land Sales

Each of the 130 residential lots will be sold through a **standard derivative lease**. These leases offer secure, long-term tenure, for the remainder of the existing lease period (46 years). The sale price for each standard residential lot in the Etas Subdivision has been set at VUV 1,710,000. This price was determined through a balancing process—rather than strict cost-recovery—aimed at ensuring affordability for low- to lower-middle-income households, while still enabling the government to recover a portion of development costs. The price reflects policy decisions made by the Project Steering Committee, taking into account market comparisons, valuation estimates, and the need to make secure, serviced land financially accessible to households within the defined eligibility income bracket of VUV 45,000–87,000 per month.

Use of Restrictive Agreements to Safeguard Public Spaces

To ensure proper land use and prevent encroachment or squatting on public green spaces, **restrictive agreements** will be embedded in each lease agreement. These agreements, based on the Land Leases Act Schedule 68 framework, aim to:

- Protect shared and open space integrity
- Empower lessees collectively to take legal action in the event of violations
- Foster community stewardship

These agreements are enforceable by any lot owner and may be supported by a Residents' Committee to monitor compliance. These measures will help deter informal occupation or misuse of shared land, including illegal gardening, tree cutting, and squatting—risks that commonly erode the amenity and sustainability of low-income settlements.

Inclusive Governance Mechanisms

During the operational phase, community representation structures such as a residents' committee or governance bodies may be formed to support:

- Ongoing public education and dispute resolution
- Coordination with SPGC on maintenance and complaints
- Monitoring compliance with land use, drainage, sanitation and waste policies

These mechanisms are vital to ensuring that vulnerable groups—including female-headed households and persons with disabilities—have a voice in subdivision management decisions.

Residual Impacts

If management responsibilities are clearly defined and adequately resourced, and if community awareness and compliance are promoted, residual environmental and social risks during the operational phase will be **low** and predominantly reversible. Ongoing monitoring and capacity-building support may be required to ensure the sustainability of subdivision infrastructure and public services. However, risks to equitable land access and public space degradation may persist without effective enforcement of lease-based restrictions and inclusive governance mechanisms.

8.15 Associated Facilities

8.15.1 Definition and Applicability

As defined in paragraph 11 of the Environmental and Social Framework (ESF) and clarified in ESS1, Associated Facilities (AFs) are facilities or activities that are not financed by the World Bank as part of the project, but are:

- Directly and significantly related to the project;
- Carried out, or planned to be carried out, contemporaneously with the project; and
- Necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist.

For the Etas Subdivision, the following are considered Associated Facilities:

1. **Community Market and Bus Exchange**
2. **Residential Houses** (self-built or constructed by private contractors)
3. **Public Recreation and Sports Facilities**, and possible **Government Offices**
4. **Stormwater Drainage System** connecting to municipal or downstream receiving areas

Although these facilities fall outside the project's direct financing, their environmental and social risks and impacts must be identified, assessed, and managed in accordance with the ESF—particularly ESS1–ESS8.

8.15.2 Environmental and Social Risk Considerations

ESS1: Assessment and Management of Risks and Impacts

- The **community market and bus exchange** will generate commercial and transportation traffic, requiring assessment of waste management, hygiene conditions, air and noise emissions, and small business regulation. These impacts are magnified if construction overlaps with the core subdivision works.
- **Self-built housing** may involve unregulated construction methods, inadequate building standards, poor waste management, and construction-phase risks including noise, dust, and worker safety.
- **Recreational/sports facilities and government buildings** may require energy and water connections, generate increased human traffic, and affect sensitive drainage and erosion-prone areas.
- The **stormwater drainage system**, while essential, may introduce downstream sedimentation, contamination, or erosion risks—especially under heavy rainfall.

ESS2: Labor and Working Conditions

- Risks of labor exploitation or unsafe conditions exist particularly **with informal builders and small-scale contractors enga**ged in residential construction.
- Absence of labor standards may affect wages, working hours, and accommodation conditions.

ESS3: Resource Efficiency and Pollution Prevention

- Increased **solid waste**, **construction debris**, and **greywater** from housing and market activities must be anticipated and managed.
- Poor septic installations in private homes can pollute water tables and lead to public health issues.

ESS4: Community Health and Safety

- Traffic safety risks related to increased bus and pedestrian flows.
- Public safety risks during construction, particularly if residential buildings are constructed in parallel with subdivision works.

ESS5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement

- No involuntary resettlement is anticipated from AFs, but attention is needed if recreation or road features shift beyond the original project footprint.

ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

- Vegetation clearance and slope disturbance during AF construction must be monitored to prevent degradation or disruption of natural drainage and topography.

ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

- No Indigenous Peoples as defined under ESS7 are present. However, culturally significant features (e.g., *nambanga* trees) within AF footprints must be preserved, with community consultation.

ESS8: Cultural Heritage

- Risk of disturbance to buried cultural items during drainage or market construction—chance find procedures must be extended to AFs.

8.15.3 Cumulative and Indirect Impacts

AFs, in conjunction with the subdivision's core works, may contribute to cumulative:

- **Construction-phase impacts**, such as dust, traffic congestion, and informal worker influx;
- **Infrastructure load**, especially for water and sanitation systems, if uncoordinated;
- **Social pressures**, including increased demand for schools, health services, or local policing.
- **Operation-phase impacts,** may include poor waste management, poorly maintained sanitation facilities, poor maintenance of lights, roads, drainage systems and public areas.

Design integration across project and AFs is essential to mitigate overlapping impacts.

8.15.4 Design, Procurement, and Risk Mitigation

AFs will not be procured under the main project, but the following steps will be adopted:

- **Design Coordination:** Ensure that drainage, recreational areas, and community spaces are aligned with the subdivision layout, avoiding overlapping footprints or environmental bottlenecks.

- **Standard Specifications:** Promote the use of standard designs for septic systems, housing, and kiosks to limit environmental risks.
- **Contractor Outreach and Awareness:** Disseminate environmental and social clauses and guidelines to local builders and contractors involved in AFs.
- **Public Communications:** Educate lot owners on safe construction practices, erosion control, and environmental compliance.

8.15.5 Management and Monitoring Plans

The following plans and tools will be extended or adapted to address AF-related risks:

- **Environmental and Social Management Plan (ESMP)** – broaden scope to reference AF interfaces.
- **Labor Management Procedures (LMP)** – include voluntary compliance guides for AF contractors.
- **Chance Find Procedures** – apply during drainage excavation and other AF works.
- **Community Health and Safety Plan** – include considerations for bus exchange and public recreation.

8.15.6 Table of Mitigation Measures for Associated Facilities

Associated Facility	Identified Risks	Proposed Mitigation Measures	Monitoring Responsibility	Proposed Capacity-Building Measures
Community Market & Bus Exchange	Solid waste generation, traffic safety, informal vending, noise	- Design with waste collection areas - Set up bus turning circles and marked crossings - Conduct traffic safety audit - Waste Management Plan (WMP) for operators	Implementing Agency, Donor, DEPC SPGC	Training for vendors on waste management, hygiene, and vendor rights
Self-Built & Contractor-Built Homes	Unregulated construction, environmental pollution, labor exploitation	- Issue Model Home Guidelines & minimum technical standards - Encourage licensed builders - Include E&S compliance in plot lease agreements	Guidelines DUAP, PMU/MoLNR	Awareness sessions for plot recipients on safe construction, waste disposal, and labor obligations Access to a Builder Help Desk

Associated Facility	Identified Risks	Proposed Mitigation Measures	Monitoring Responsibility	Proposed Capacity-Building Measures
Recreational Facilities & Govt Offices	Infrastructure overload, erosion, site disturbance	- Environmental screening for each facility - Ensure universal access & tree retention - Coordinate with utility providers for phased services	DEPC Implementing Agency Donor	Induction workshops for facility designers on inclusive and resilient public space planning
Stormwater Drainage System	Downstream erosion/flooding, poor outlet design, health hazards	- Drainage Maintenance Plan	SPGC	Training for public works staff on climate-resilient drainage design and maintenance
All AFs (Cumulative)	Worker influx, land pressure, lack of coordination	- Expand GRM to AF-related complaints - Apply chance find procedure - Include AFs in ESMP annex - Promote staggered construction windows	MoLNR, DSS, Contractor Liaison Officers	Stakeholder workshops for community leaders, builders, and agencies on cumulative impact awareness and management

8.15.7 Institutional Responsibilities for Associated Facilities

Agency	Design Phase Responsibilities	Construction Phase Responsibilities	Operational Phase Responsibilities
Ministry of Lands and Natural Resources (MoLNR)	• Coordinate AF planning and integration with subdivision layout •Develop Model Home Guidelines for residential construction • Define lease conditions for E&S compliance • Facilitate design of community market and bus exchange • Lead engagement with SPGC and PWD for service integration	• Disseminate environmental and social compliance materials to contractors and home builders • Oversee early-stage AF construction interface • Coordinate information sessions for plot recipients • Monitor construction overlaps and enforce sequencing	• Retain oversight of subdivision during defect liability period • Monitor ongoing development of AFs such as market, sports areas, and government buildings until handover • Address E&S complaints related to lease obligations
Shefa Provincial Government Council (SPGC)	Participate on project steering committee Provide approvals for subdivision name and street name Provide approval for subdivision plan	• Issue permits and conduct inspections of all building and septic constructions • Monitor compliance with sanitation and building codes • Facilitate training for vendors and market users • Supervise traffic safety implementation around bus exchange	• Operate and maintain community market and bus exchange • Maintain recreational facilities, solar lighting, and public toilets • Oversee solid waste management in public areas • Enforce bylaws on green space use and sanitation • Monitor vendor and pedestrian safety in AF areas
Department of Environmental Protection and	• Conduct environmental screening for AFs	• Monitor implementation of drainage and erosion controls	• Conduct periodic inspections of AFs for pollution control,

Conservation (DEPC)	(market, drainage, sports fields) • Review AF layout for biodiversity and vegetation impacts	• Review builder compliance with screening conditions	erosion, and wastewater impacts • Advise SPGC on environmental performance standards
Department of Urban Affairs and Planning (DUAP)	• Support development of minimum technical standards and planning controls for residential structures	• Not directly involved in field supervision; technical backstopping as needed	• Assist SPGC in enforcement and construction standards
Public Works Department (PWD)	• Advise on integration of AF drainage with municipal systems	• Supervise construction quality of drainage outfalls and connections • Ensure slope stability and runoff controls are followed	• Conduct regular maintenance of off-site drainage infrastructure beyond the subdivision boundary

9 Mitigation and Monitoring

This section summarises the environmental and social mitigation measures proposed for the Etas Subdivision, along with their feasibility, expected effectiveness, and any residual negative impacts that may remain following implementation. It also considers institutional responsibilities, indicative costs, and the monitoring requirements needed to ensure the sustainability of these measures across all phases of the project.

9.1 Purpose and Scope of the ESMP

The Environmental and Social Management Plan (ESMP) is the core tool through which mitigation and monitoring measures are implemented. It forms part of the project's safeguard framework and is designed to align with both the Government of Vanuatu's legal requirements and the World Bank's Environmental and Social Framework (ESF). The ESMP supports compliance with ESS1–ESS10 and incorporates the findings of the Environmental and Social Impact Assessment (ESIA).

The ESMP applies across the entire project lifecycle:

- **Design and tendering**
- **Preconstruction and site mobilisation**
- **Construction**
- **Demobilisation and post-construction rehabilitation**
- **Operation and settlement of the subdivision**

The **Contractor** is responsible for implementing mitigation measures during the **construction phase**, in accordance with the approved Contractor Environmental and Social Management Plan (CESMP). Once civil works are completed and the site handed over, **MoLNR and SPGC** assume responsibility for mitigation and monitoring during the **operation phase**. This includes maintenance of infrastructure, oversight of ongoing development, and any impacts associated with **Associated Facilities (AFs)** such as the community market, residential lot construction, and roadside drainage.

A full ESMP is presented in Appendix B of this ESIA.

9.2 Mitigation Measures and Residual Impacts

Mitigation measures have been developed for all identified environmental and social risks, including those affecting water, land, air, biodiversity, community health and safety, and labour conditions. Measures are designed to be technically feasible, cost-effective, and appropriate to the local context.

In most cases, impacts can be **fully mitigated** through well-established good practices, including:

- Controlled site access,
- Dust suppression and erosion control,
- Construction waste management,
- Protection of retained vegetation,
- Engagement with nearby residents and vulnerable groups,
- Compliance with national building and sanitation codes.

However, some **residual impacts** will remain, including:

- Short-term dust and noise during lot construction after handover;
- Risk of localised flooding due to blocked or poorly maintained drains;
- Public safety concerns from improper waste disposal or infrastructure misuse;
- Minor disturbance to fauna from initial vegetation clearance and subdivision activity.

These residual impacts are considered **temporary, reversible, and site-specific**. They are deemed acceptable within the project's overall environmental and social framework, provided mitigation and maintenance commitments are upheld.

9.3 Feasibility, Cost and Institutional Requirements

Mitigation measures are considered feasible and appropriate under local conditions, reflecting both Vanuatu's regulatory framework and the site's physical and social characteristics. Most measures are based on standard good practice and will not require advanced technology or specialised expertise beyond what is available locally.

Cost Estimates

Estimated Mitigation and Monitoring Costs by project phase:

Project Phase	Estimated Cost (VUV)	Activities Included	Responsibility / Notes
Preconstruction & Design	1–2 million	- Development and disclosure of ESMP and CESMP - Induction/training of DSS, PMU, contractor staff - Inclusion of safeguards in tender	PMU and DSS Costs covered under PMU/DSS consulting services

Project Phase	Estimated Cost (VUV)	Activities Included	Responsibility / Notes
		documents - Early community engagement - Contingency and hazard preparedness plans	
Construction	15–20 million	- Implementation of CESMP and all sub-plans (WMP, TMP, SEAH, OHS, etc.) - Dust, noise, erosion, and traffic controls - Occupational health & safety measures (e.g., PPE, signage) - Grievance redress, community liaison, stakeholder engagement - Biosecurity, tree protection, waste and hazardous materials management - Daily/weekly monitoring and reporting	Contractor These costs are embedded in the Contractor's BoQ and contract price; must be sufficient to support staffing, materials, and safeguard implementation
Operation	800,000-1.2 million annually	Management of subdivision post-construction during defect liability period - Oversight of development of Associated Facilities (AFs)	MOLNR recurrent expenditure to cover coordination role, staff time, liaison with SPGC and lot purchasers, site visits, oversight costs for AFs development
Operation	1 – 2 million annually	Maintenance of roads, verges, and stormwater drainage	Public Works Department recurrent expenditure to cover intermittent road and drain inspections, minor repairs, coordination with SPGC; limited to arterial road infrastructure within Etas.
Operation	2.5 – 3 million annually	- Waste collection and public space upkeep - Permit issuance and construction inspections - Solar streetlight maintenance - Sanitation and building code enforcement	SPGC recurrent expenditure to cover core operational costs. Includes field staff, fuel, repairs, inspection rounds, minor streetlight component replacement, and public health enforcement.
Operation	1 – 1.5 million	-Community awareness, marketing and environmental education	MoLNR project budget to cover printed materials, local radio, signage, and community sessions. May be partially covered through donor or NGO support.
Operation	500k - 1 million annually	- Periodic environmental monitoring (DEPC)	DEPC recurrent expenditure to cover annual inspections or sampling (e.g., drainage, septic leakage risks,

Project Phase	Estimated Cost (VUV)	Activities Included	Responsibility / Notes
			biodiversity), travel to site, data entry and reporting. Frequency likely 2x/year

Institutional and Training Requirements

- The **Contractor** will be required to appoint dedicated Environmental, Social, and Health & Safety officers and train all workers in CESMP provisions.
- The **DSS** will supervise safeguards implementation during construction.
- The **PMU** will oversee compliance and reporting during all phases.
- The **MOLNR** will oversee the land registration requirements for the sale of subdivision plots and will be responsible for the subdivision though the defects and liabilities period. After that period the subdivision public spaces, solar street lights and waste management will be handed over the SPGC.
- The **SPGC** will require resources to monitor ongoing land development, enforce building codes, and manage subdivision infrastructure and services post-handover.

9.4 Roles and responsibilities

To achieve the project's objectives and to safeguard environmental and social values, the following roles and responsibilities have been established:

Government of Vanuatu (GoV):
Through the Ministry of Lands and Natural Resources (MoLNR), the GoV is responsible for project oversight and coordination through interagency technical and steering committees. MoLNR will manage the subdivision post-construction, including plot allocation and oversight of defect correction by the contractor during the period of defect liability, after which the subdivision will be formally handed over to the other government agencies.

Shefa Provincial Government Council (SPGC):
By formal arrangement with MoLNR, SPGC will take over subdivision maintenance and operation of waste collection, solar lights and management of public green spaces. SPGC will also process permit applications for septic systems and residential buildings and oversee public infrastructure compliance.

Public Works Department (PWD): PWD is responsible for the subdivision roads, once they are confirmed under the gazette of roads. PWD will be responsible for maintenance of the road and road reserve (including the verge and road drainage) and infiltration basin.

Project Management Unit (PMU):
Coordinates overall project implementation and safeguards compliance, with support from national and international safeguards specialists responsible for monitoring, capacity-building, and World Bank liaison.

Design and Supervision Specialist (DSS):
Responsible for design oversight, construction supervision, and ensuring effective mitigation implementation by the contractor in accordance with the ESMP and CESMP.

Contractor:
Responsible for preparation and implementation of the CESMP, including sub-plans covering labour management, waste management, environment management control plan, earthworks management, traffic, community liaison, safety, SEAH/STI prevention, camp and quarry management (if applicable),

and occupational health and safety. Contractor key personnel to include an E&S Officer, Health and Safety Officer and Community Liaison Officer. Contractor key personnel to be based on site throughout the duration of the contract.

Community and Stakeholders:
Encouraged to engage with the PMU and contractor via the project's Grievance Redress Mechanism (Help Desk) and participate in feedback mechanisms to ensure local impacts are identified and addressed.

World Bank:
Responsible for periodic reviews to ensure alignment with its Environmental and Social Framework (ESF) and for verifying that safeguard commitments are being implemented.

9.5 Monitoring and Reporting Timelines

Monitoring will occur throughout the project cycle with clear assignment of responsibilities and reporting flows:

Phase	Frequency	Responsibility	Reporting Line
Preconstruction	One-time / Monthly	Contractor / PMU / DSS	PMU to WB
Construction	Daily to Monthly	Contractor (self-monitoring), DSS (verification)	DSS to PMU to WB
Operation	Quarterly / Annually	SPGC / MoLNR	MoLNR to PMU / relevant ministry

10. Conclusion

This ESIA provides a comprehensive evaluation of the potential environmental and social risks and impacts associated with the Etas Subdivision under the Vanuatu Affordable and Resilient Settlements (VARS) Project. It assesses project alternatives, baseline conditions, impact significance, and outlines practical and context-appropriate mitigation measures aligned with both national legislation and the World Bank ESF.

The ESIA forms the basis for the ESMP, which—together with the Contractor's ESMP—defines the institutional, technical, and operational measures needed to ensure that subdivision development and long-term occupancy are environmentally and socially sustainable.

If implemented effectively, the proposed safeguards and management arrangements will not only mitigate project risks but also enhance positive outcomes—supporting equitable access to land and services, fostering climate resilience, and strengthening institutional capacity at both national and provincial levels. The Etas Subdivision is expected to serve as a demonstration model for affordable, well-planned urban expansion in greater Port Vila and across Vanuatu.

A

Appendix A - References

Appendix B - ESMP

C

Appendix C - CESMP

D

Appendix D – Screening Form

Appendix E – Land lease for Etas Site