Samoa Aviation and Roads Investment Project (SARIP)

Preliminary Environmental Assessment Report (PEAR) incorporating draft Environmental and Social Management Plan (ESMP) for NAVAIDS Supply and Installation at Faleolo International Airport

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Executive Summary

The Project

The Government of Samoa (GoS) is implementing the Samoa Aviation and Roads Investment Project (SARIP) to support investments in the aviation and road subsectors in Samoa, and is a continuation of the Samoa Aviation Investment Project (SAIP). The SARIP will improve the climate resilience and safety of Samoa's aviation and road sectors, and in the event of an Eligible Crisis or Emergency, respond promptly and effectively to it.

The existing navigation systems were installed at Faleolo International Airport more than 15 years ago, and are nearing the end of their service life, and they may become difficult to maintain in the future. This project provides consultancy services for the Design and Supervision of Navigational Aids Equipment for Faleolo International Airport (the Project) to replace existing navigation systems.

Need and Justification

Samoa's geographic distance from the main markets means that efficient air services are integral to the Government of Samoa (GoS)'s drive to increase exports, especially for low volume and high-value items that depend on fast delivery. Aviation also plays a vital economic and social role in Samoa's development. Most visitors, tourists and the crucial 'visiting friends and relatives' segment rely on air transport predominantly.

Samoa's remoteness, limited size, coastal settlement patterns, and susceptibility to a host of natural disasters also make reliable aviation connectivity crucial for effective disaster risk management, particularly for emergency management such as in the delivery of humanitarian aid and emergency goods and supplies.

Project Objective

The overall objective of this project is to support the Government of Samoa through climate resilience and safety investments in the aviation sector. This is planned to be achieved through the installation of new navigational aids equipment for Faleolo International Airport. The specific objectives of this Project are:

- To finalize the design and relevant specifications of navigational aid equipment for Faleolo International Airport i.e., Instrument Landing System (ILS) and a Doppler Very High Frequency Omnidirectional Radio Range (DVOR), and the associated civil works;
- Provide procurement assistance; and, supervise the installation / operationalization and associated civil works;
- Additionally, the Consultant is expected to make use of the latest Obstacle Limitation Surface (OLS) survey and conduct the following:

    a) Review, develop/revise Global Navigation Satellite System (GNSS) Approaches as necessary;
    b) Based on the abovementioned OLS survey, prepare guidelines for siting the ILS, DVOR, and appropriate equipment specifications;
    c) Based on the OLS survey and siting of new navigation aids, revise GNSS approaches for Faleolo International Airport as required.

New Navigational Aids Equipment Siting Options Considered

The siting of the DVOR & ILS equipment to comply with EUROCAE ED-52 requirements while safeguarding the potential for Samoa Airport Authority (SAA) to implement a potential 150m runway extension selected for the following options from the 'SARIP Navaids_D1.2 Guidelines for siting of ILS & DVOR_V1R1' prepared by the Consultant:

- DVOR Option 2b at the eastern end of the airport considering the 150m runway extension to the east and west runway ends;

- Localizer Option 2; and
- Proposed Glide Path location.

Statutory Framework

This Preliminary Environmental Assessment Report (PEAR) incorporating a draft Environmental and Social Management Plan (ESMP) has been prepared to identify and assess the potential environmental and social impacts associated with the new equipment installation and associated civil works, and the operation and maintenance of new equipment.

The PEAR also identifies appropriate mitigation and management measures in accordance with Planning and Urban Management Authority (PUMA) policy guidelines, codes and standards, and recommends best practices to avoid and minimise the Project's negative impacts while maximizing benefits of the Project.

The PEAR has been prepared to meet the national requirements of the Planning and Urban Management Act 2004 and PUMA Environmental Impacts Assessment Regulations 2007, the Samoa Code of Environmental Practice 2008, other PUMA Policy Guidelines and Standards.

This PEAR will be submitted to PUMA for approval as part of a Development Consent Application (DCA) for the Project. PUMA is the planning authority who makes a determination on the Project.

This PEAR has also addressed the requirements of the World Bank (WB) Samoa Aviation and Roads Investment Project (P-176272) Environmental and Social Management Framework (ESMF) January 2022 as the project is funded by the WB. The PEAR will be submitted to the World Bank for their No Objection to fulfill both Samoan national and the WB Samoa Aviation and Roads Investment Project ESMF requirements.

Stakeholder Engagement

An initial meeting with SAA was held on Tuesday 22nd July 2025 to discuss the potential environmental and social impacts associated with the installation of new navigational aids equipment and associated civil works, and how the Project may affect them. A topographic survey was commissioned by SAA to map the existing environment and features in order to determine specific features that would be affected by the installation of new navigational aids equipment and associated civil works.

Further engagement with SAA will be required during the construction supervision phase of the Project to ensure mitigation measures are suitable during the installation of new navigational aids equipment and associated civil works.

Potential Environmental and Social Impacts

The potential environmental and social impacts associated with the installation of the new navigational aids equipment and associated civil works have been assessed. The positive impacts of the Project would include:

- Enhance resilience of the Faleolo International Airport;
- Reliable aviation connectivity;
- Efficient delivery of humanitarian aid and emergency goods and supplies.

Potential environmental impacts during installation of new navigational aids equipment and construction of associated civil works include:

- **Erosion and sedimentation control** is required since associated civil works will disturb soil, leading to erosion and sediment runoff into adjoining areas. Erosion and sediment runoff would be temporary while soils are exposed. This would be minimized through standard erosion control measures outline in the *Samoa Code of Environmental Practice (COEP) 13 - Earthworks*;

- **Spill response** is required since the operation of machinery and refuelling activities can result in spills of fuel, oils which can pollute soil. This would be addressed through specific standards outlined in the *PUMA Contamination Control Guideline 2008* Chemical usage and storage;
- **Air quality and dust control** is required but is unlikely to generate large amounts of dust from stockpiles or excavated areas. The operation of machinery can produce odors that become a nuisance for workers onsite. It is unlikely that odors would affect any airport users given the large distance from the siting of new navigational aids equipment to airport users (greater than 500m). Air quality and dust control would be addressed through specific standards outlined in the *PUMA Contamination Control Guideline 2008 Air Quality (Dust & Odor Prevention)*;
- **Tree trimming** may be required for trees higher than 10m to maintain clean lines for the new navigational aids equipment, depending on further analysis from the equipment Supplier based on their proposed solution. Continuous trimming reduces canopy cover and tree health. Trees are mainly shrubs however trimming regularly occurs as part of the airfield maintenance activities.
- **Noise and vibration control** is required since it affect workers onsite. It is unlikely that noise would affect any airport users given the large distance from the siting of new navigational aids equipment to airport users (greater than 500m). Vibration impacts are not anticipated to be an issue since solar panels are not very sensitive to vibration and given the safe distance from the siting of new navigational aids equipment to solar farms (greater than 100m). The main sources of vibration are heavy truck traffic which can be minimize with best practice control measures.
- **Waste management** is required since installation and construction activities would generate waste that include excavated material from associated civil works and generation construction waste such as packaging, used oils and containers. All waste generated from installation and construction activities that can't be recycled and/or re-purpose will be disposed at Tafaigata Landfill with payment.
- **Material sourcing** is required for the construction of foundation and service ducts and include aggregate, cement & concrete, steel, and timber. Aggregate would be source from a quarry therefore material sourcing shall be from a quarry with a valid consent.
- **Occupational Health and Safety (OHS)** is required since workers onsite will be exposed to potential health and safety hazards during the installation of new navigational aids equipment and the construction of civil works. Equipment supplier and civil works contractor will be required to produce an OHS Management Plan that apply to all of the workers onsite as well as visitors to the site.

Potential social impacts during installation of new navigational aids equipment and construction of associated civil works include:

- **Land and Resettlement** – the installation of new navigational aids equipment and associated civil works will be limited to the existing physical footprint of Faleolo International Airport, which is situated on government land registered to SAA. However, the maximum elevation of the new navigational aid equipment will be obstructed by the metallic roof of residential building located within the surrounding area of the Faleolo International Airport that is under the process of land acquisition by SAA[1]. Also, the implementation of the new DVOR may potentially impact some solar panels located on the state's land currently leased by Sun Pacific Energy Limited. The occurrence of such impact to the solar panel facility will be avoided as much as possible by the Supplier's DVOR solution (including the choice of DVOR counterpoise height).
- **Community health and safety** – the installation of new navigational aids equipment and associated civil works will be focused/undertaken on SAA land. A residential building affected

[1] *The process of land acquisition is related to a separated project and it is out of the scope of the NAVAIDS Supply and Installation project, but all land settlement will be completed before the commencement of the NAVAIDS project.*

by the siting of the new navigational aids equipment has been identified. Safety risks to the visitors from installation of new navigational aids equipment and construction works (e.g., use of equipment, movement of materials, etc.) and presence of the workforce (e.g., anti-social behaviour) will be managed through demarcating the construction site and implementing a code of conduct for the workers.

- **Labour and working condition risks** associated with hiring worker, such as unfair terms of employment and occupational health and safety risks will be managed through having certain labour requirements the supplier and/or contractor will need to meet, preparing and implementing an OHS Management Plan; and having adequate resources on-site to manage safety.

Potential key environmental and social impacts during the operation of the new navigational aid equipment include risks to the workers from regular trimming as part of the airfield maintenance activities. This will be managed through:

- Ensuring the detailed design of the Project by the Construction Contractor meets the requirements for DCA and WB ESMF requirements;
- Developing and implementing a Trimming Maintenance Plan.

Environmental and Social Management

A key feature in managing installation and construction related impacts is the preparation and implementation of a Construction Environment and Social Management Plan (C-ESMP) by the Supplier and Construction Contractor. The C-ESMP is site-specific management plan which identifies the controls, methods, and facilities to be implemented by the Supplier and Construction Contractor.

The C-ESMP will be prepared to meet:

- Project consent conditions
- The mitigation and management measures set out in this PEAR, based on the proposed solution of the Supplier.

The activity-specific management plans that will accompany the C-ESMP will include:

- Occupational Health and Safety Management Plan including an Emergency Response Plan.
- Traffic Management Plan.
- Waste Management Plan.
- Spill Control and Response Plan.

A key aspect of the C-ESMP will be implementation of the Contractor-specific Grievance Redress Mechanism as well as ongoing engagement with SAA and affected person identified as required.

I. Introduction

a. Project background

Samoa's geographic distance from the main markets means that efficient air services are integral to the Government of Samoa (GoS)'s drive to increase exports, especially for low volume and high-value items that depend on fast delivery. Aviation also plays a vital economic and social role in Samoa's development. Most visitors, tourists and the crucial 'visiting friends and relatives' segment rely on air transport predominantly.

Samoa's remoteness, limited size, coastal settlement patterns, and susceptibility to a host of natural disasters also make reliable aviation connectivity crucial for effective disaster risk management, particularly for emergency management such as in the delivery of humanitarian aid and emergency goods and supplies.

The Government of Samoa (GoS) is implementing the Samoa Aviation and Roads Investment Project (SARIP) to support investments in the aviation and road subsectors in Samoa, and is a continuation of the Samoa Aviation Investment Project (SAIP). The SARIP will improve the climate resilience and safety of Samoa's aviation and road sectors, and in the event of an Eligible Crisis or Emergency, respond promptly and effectively to it.

Faleolo International Airport is located on the north western coast of the island of Upolu and is 30 km west of Apia. The total land area of the airport site is approximately 340 hectares. The Faleolo International Airport site is situated on government land legally registered to the Samoa Airport Authority (SAA) for airport operations. SAA has lease part of the Faleolo International Airport site that is undeveloped on the southeast end of the runway to establish three solar farms. The solar farms have signed private partnership agreements with the Electric Power Corporation (EPC) to supply solar power to the electricity grid. The solar farms sit between the eastern runway and the main West Coast Road roughly 200m from the coastline.

Land adjoining the eastern end of the runway is customary land with one residential building that is in the process of being acquired by SAA. At the time of the PEAR, the residential building had been vacated and land acquisition of customary land was under negotiations and expected to be completed by 31 March 2026 (refer to Annex E – Land Acquisition at Fusive'a). While this land acquisition process is not associated with the NAVAIDS activity –the completion of this process is required for unimpeded operation of the DVOR. The other parcel of land (to the south of the eastern end of the runway) is state land and currently leased by Sun Pacific Energy Limited for a solar power facility., in which the impact to the solar panel facility will be avoided as much as possible by the Supplier's DVOR solution.

Figure I-1: Location of Navigational Aids Equipment at Samoa Faleolo International Airport

The existing navigation aids were installed at Faleolo International Airport more than 15 years ago, and are nearing the end of their economic life, and they may become difficult to maintain in the future. This project provides consultancy services for the Design and Supervision of Navigational Aids Equipment

for Faleolo International Airport (the Project) to replace existing navigation aids. The existing navigational aids in Faleolo International Airport compose of:

- One Non-Directional Beacon (NDB) operating at 270 kHz;
- One Very High Frequency Omnidirectional Radio Range – Distance Measuring Equipment (VOR-DME) operating at 113.90 MHz; and
- Instrument Landing System (ILS) installed on 08 end of the runway.

The project will be undertaken in four phases:

- Phase 1: Guidelines for siting the ILS, DVOR, and appropriate equipment specifications;
- **Phase 2: Design and procurement assistance of ILS and DVOR equipment for installation;**
    - Conduct the following tasks based on the Obstacle Limitation Surface (OLS) survey conducted by Beca International Consultants Ltd in year 2023:
        - Review the Global Navigation Satellite System (GNSS) flight procedures as necessary;
        - Prepare guidelines for siting the ILS, DVOR, and
        - Finalize the design and relevant specifications of navigational aid equipment for Faleolo International Airport i.e. ILS, DVOR, and the associated civil works;
    - Provide procurement assistance to the navigational aid equipment.
- Phase 3: Supervision Phase;
    - construction supervision activities.
- Phase 4: Defects Liability (Warranty) Phase.

b. Context

In 2018, SAA initiated the land acquisition process on the land east to the airport (Fusive'a land), for the purpose of the runway extension. At the time of this report, the negotiations between the GoS and the land owner have been finalized and GoS is working through their internal process to pay out the agreed compensation to the land owner. The process is understood to be finalised within the next 12 months and subsequently, the land will be under the GoS' ownership.

Although this overall land acquisition process is out of the scope of the project 'NAVAIDS Supply and Installation at Faleolo International Airport', in case of delay of the land acquisition, it may impact the project implementation incurred by any mitigation measures required in the to-be acquired land.

c. Purpose of this report

This Preliminary Environmental Assessment Report (PEAR) has been prepared to identify and assess the potential environmental and social impacts associated with the new equipment installation and associated civil works, and the operation and maintenance of new equipment.

The PEAR also identifies appropriate mitigation and management measures in accordance with PUMA policy guidelines, codes and standards, and recommends best practices to avoid and minimise the Project's negative impacts while maximizing benefits of the Project.

Preparation of the PEAR has been prepared to meet the national requirements of the Planning and Urban Management Act 2004 and PUMA Environmental Impacts Assessment Regulations 2007, the Samoa Code of Environmental Practice 2008, other PUMA Policy Guidelines and Standards.

This PEAR will be submitted to PUMA for approval as part of a DCA for the Project. PUMA is the planning authority who makes a determination on the Project.

This PEAR has also addressed the requirements of the World Bank (WB) Samoa Aviation and Roads Investment Project (P-176272) Environmental and Social Management Framework (ESMF) January 2022 as the project is funded by the WB. The PEAR will be submitted to the World Bank for their No Objection to fulfil both Samoan national and the WB Samoa Aviation and Roads Investment Project ESMF requirements.

During the implementation phase of the NAVAIDS project, the Contractor is required to develop the C-ESMP based on this PEAR document, together with further analysis of systems performance thus documenting the actual impacts to the surrounding features, if any. The relevant mitigation measures should be added where relevant. No civil works/installation should commence until the C-ESMP is approved by the WB.

II. Policy and legal Framework

This section outlines the relevant policies, guidelines and laws that apply to the Project and the approvals needed from different government agencies. The section also describes the applicable World Bank requirements.

a. World Bank Environmental and Social Framework

The World Bank Environmental and Social Framework (ESF) sets out the 'World Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social Standards (ESStd) that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity'. The framework became effective on 1 October 2018 and applies to all Investment Project Financing initiated after this date (including the SARIP). The framework consists of three parts:

1. A Vision for Sustainable Development - the Bank's aspirations regarding environmental and social sustainability.
2. The World Bank Environmental and Social Policy for Investment Project Financing - requirements that apply to the Bank.
3. The ESStd requirements that apply to the Borrower and projects. The ESStd are comprised of ten standards covering various topics.

SARIP Environmental and Social Safeguards (ESS) Instruments

The following environmental and social safeguards instruments were prepared to ensure the Project activities are implemented in compliance with the WB Environmental and Social Framework (ESF):

- Environmental and Social Commitment Plan (ESCP) January 2022– to guide monitoring and reporting of E&S performance of the Project to comply with WB ESS1: Assessment and management of Environmental and Social Risks and Impacts;
- Labour Management Procedure (LMP) January 2022 – to outline the labour management procedures that will apply to all direct, contracted and primary equipment supplier/contractor workers to comply with WB ESS2: Labour and Working Conditions;
- SARIP Environmental and Social Management Framework (ESMF) January 2022 – address requirements to comply with:
    - WB ESS3: Resource Efficiency and Pollution Prevention and Management;
    - WB ESS4: Community Health and Safety;
    - WB ESS8: Cultural Heritage.
- Land Acquisition and Resettlement Framework (LARF) January 2022 - to guide the management of potential land acquisition and resettlement impacts associated with Project activities to comply with WB ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
- Stakeholder Engagement Plan (SEP) 2022 - to provide guideline on the provision of timely and appropriate information during project design to enable information participation and feedback, including the provision of better communication support and build effective relationship with affected persons and relevant stakeholders to comply with ESS10 Stakeholder Engagement and Information Disclosure.

b. Environmental, Health and Safety Guidelines

The Project will utilize the World Bank Group's Environmental, Health, and Safety (EHS) Guidelines. The EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP).

The EHS Guidelines are comprised of General Guidelines which are organized by themes (environmental; occupational health and safety; community health and safety; construction and decommissioning) and industry-specific guidelines. The following EHS guidelines are relevant to the project:

- General EHS Guidelines: Environmental.
- General EHS Guidelines: Occupational Health and Safety.
- General EHS Guidelines: Community Health and Safety.
- General EHS Guidelines: Construction and Decommissioning.

c. GoS's National Laws and Regulations

Ministry of Works Act 2002

The *Ministry of Works Act 2002* provides for the Ministry of Works and Transport Infrastructure (MWTI) to create and administer the National Building Code. Through the Act, MWTI is responsible for building code compliance, offences and liability, inspection, suspension or withdrawal of a Building Permit.

SAA Project Implementation Unit (PIU) must obtain a Building Permit for any proposed structures from the Asset Management and Building Division of MWTI to ensure compliance with the National Building Code of Samoa before any construction activities can start on site.

Samoa's National Building Code 2017

The Samoa National Building Code 2017 provides the standards of how a building and site should be constructed to achieve a structurally sound and sustainable built environment. It points to the Outcome of the Development rather than a step-by-step prescription of the Development or Construction method. The Code includes standards for the construction, maintenance and demolition of buildings, site servicing and amenities on site. The building code has been applied to all aspects of the planning and design process of the Project. Of relevance to the Project are certain development aspects of the code's building sections (A, B, C, D, E, F, G and K) and the environment sections (H and J). The Contractor is required to apply for a Building Permit from MWTI to confirm the Project design complies with the Samoa Building Code.

Planning and Urban Management Act 2004

This *Planning and Urban Management Act 2004* (PUMA Act) sets out the framework for the planning, use, development, management and protection of land and resources in Samoa. PUMA administers the Act and is the lead agency for development approvals and monitoring of new developments.

Section 34 of the Act requires all developments to obtain consent, unless a sustainable management plan or regulation provides otherwise. The project site is not subject to any sustainable management plan. The Project requires consent, and SAA must apply for a development consent (DC) in accordance with Section 37. Under Section 42 PUMA may require an environmental impact assessment be developed and submitted with the application. When awarding a DC, PUMA may include Conditions as per Section 48.

The Act also outlines the process for public notification of applications and the process for submissions and hearings on development applications.

Planning and Urban Management (Environmental Impacts Assessment) Regulation 2007

Any environmental impact assessment required under the PUMA Act must be prepared in accordance with the *Planning and Urban Management (EIA) Regulation 2007* (EIA Regulation). The EIA Regulation specifies the format, structure, subject matter of the assessment.

The environmental impact assessment required under the PUMA Regulations could be in the form of either a Preliminary Environmental Assessment Report (PEAR), or a Comprehensive Environmental Assessment Report (CEAR) depending on the nature, scope and significance of potential impacts. The installation of new navigational aids equipment and the construction of civil works associated with the Project are unlikely to have a significant adverse impact on the environment and therefore a PEAR has been prepared.

The Regulations also outline: (i) baseline and compliance monitoring (Section 8); (ii) reviews of the EIA (Section 9 and 10); and (iii) public consultation (Section 11). Schedules attached to the Regulations detail the content of a PEAR and CEAR. An Environmental Management Plan (EMP) consisting of mitigating measures is further required to help minimize or avoid adverse environmental impacts resulting from the development.

This PEAR will be submitted to PUMA as part of the DCA by the Construction Contractor along with all relevant documentation and supporting evidence and payment of the application fee. No works shall commence by the Construction Contractor prior to the issuance of a DC and works must be implemented in accordance with any Development Consent Conditions.

Samoa Codes of Environmental Practice 2007

The Samoa Codes of Environmental Practice 2007 (COEP) provide guidelines for managing and minimising potential environmental and social impacts of development activities. The codes of practice that apply to the Project include:

- COEP 3: Consultation;
- COEP 4: Land Acquisition and Compensation;
- COEP 5: Construction Camps;
- COEP 13: Earthworks.

The mitigation and management measures proposed in this PEAR are in accordance with the applicable COEPs.

Lands, Surveys and Environment Act 1989

This Act establishes the principal functions of the Ministry of Natural Resources and Environment (MNRE) and provides for the protection and proper management of the environment in Samoa and the promotion of sustainable development. The Act mandates the MNRE to administer and co-ordinate:

- Policies for influencing the management of natural and physical resources and ecosystems.
- The potential environmental impact of any public or private development proposal.
- Ways of ensuring that effective provision is made for public participation in environmental planning and policy formulation processes to assist decision making at the national and local level.
- Procedures for the assessment and monitoring of environmental impacts.
- Pollution control and analysis of pollutants in the environment.
- Control and management of hazardous and potentially hazardous substances including the management of the manufacture, use, storage, transport and disposal of such substances.
- Investigations and research relevant to the protection and conservation of natural resources and the environment.

Waste Management Act 2010

The *Waste Management Act 2010* covers the collection, management, disposal, and recycling of solid waste. The Act provides for registration and licensing of waste operators, permits for dumping and incinerating wastes, and sets environmental standards for the management of waste. It provides for general offences related to wastes and involves any person who deposits or dumps wastes at a place other than an approved landfill.

The Equipment Supplier/Construction Contractor will be required to prepare and implement a Waste Management Plan during construction that applies to the disposal of waste generated during construction. Waste will be disposed at Tafaigata Landfill.

Occupational Safety and Health Act 2002 and Occupational Safety and Health Regulations 2017

The *Occupational Safety and Health Act 2002* and Regulation 2017 mandate the duty of employers to take all reasonably practicable steps to protect the safety, health and welfare of employees and to provide and maintain a safe and healthy working environment.

The Equipment Supplier/Construction Contractor will be required to prepare and implement an Occupational, Health and Safety Management Plan during construction that applies to all construction work force and contractors.

Aana Alofi 3 Community Integrated Management (CIM) Plan

The Aana Alofi 3 District CIM Plan was prepared to help villages in the district and government improve climate resilience by identifying interventions for infrastructural issues to enhance community climate resilience. Aana Alofi 3 District coastal area has a high Coastal Sensitivity Index and has changed noticeably over the last several decades. The Project is consistent with the Aana Alofi 3 District CIM Plan since the proposed location of the new navigational aid equipment does not involve the need to reclaim the coastline and avoids greater erosion or flooding pressure elsewhere along the coastline.

d. Design Standards

The design and the relevant specifications of the navigational aid equipment for Faleolo International Airport is in compliance with international standards which include but not limited to:

- ICAO Annex 10 Volume I: Radio Navigation Aids, 7th Edition, July 2018.
- ICAO Annex 14 Volume I: Aerodrome Design and Operations, 8th Edition, July 2018.
- ICAO Doc 8071 - Manual on Testing of Radio Navigation Aids.
- ICAO Doc 8168 - Procedures for Air Navigation Services (PANS-OPS).
- ICAO Doc 9157 - Aerodrome Design Manual.
- EUROCAE ED-52: Minimum Performance Specification for Conventional and Doppler VHF Omnirange (CVOR and DVOR) Ground Equipment
- EUROCAE ED-57: Minimum Performance Specification for Distance Measuring Equipment (DME/N and DME/P) Ground Equipment
- EUROCAE ED-109A: Software Integrity Assurance Considerations for Communication, Navigation, Surveillance and Air Traffic Management (CNS/ATM) Systems
- Civil Aviation Authority of New Zealand – Civil Aviation Rules Part 139 - Aerodromes – Certification, Operation and Use, March 2017.
- Civil Aviation Authority of New Zealand – Civil Aviation Rules Part 171 - Aeronautical Telecommunication Services - Operation and Certification, March 2017.
- Civil Aviation Authority of New Zealand – Advisory Circular AC 171-1, Revision 2, July 2021.
- FAA Order 6750.16E - Siting Criteria for Instrument Landing Systems.
- FAA Order 6820.10 - VOR, VOR/DME, and TACAN Siting Criteria.

III. NAVAIDS equipment considerations

The following figure presents the location of existing and proposed new NAVAIDS equipment for the Faleolo International Airport:

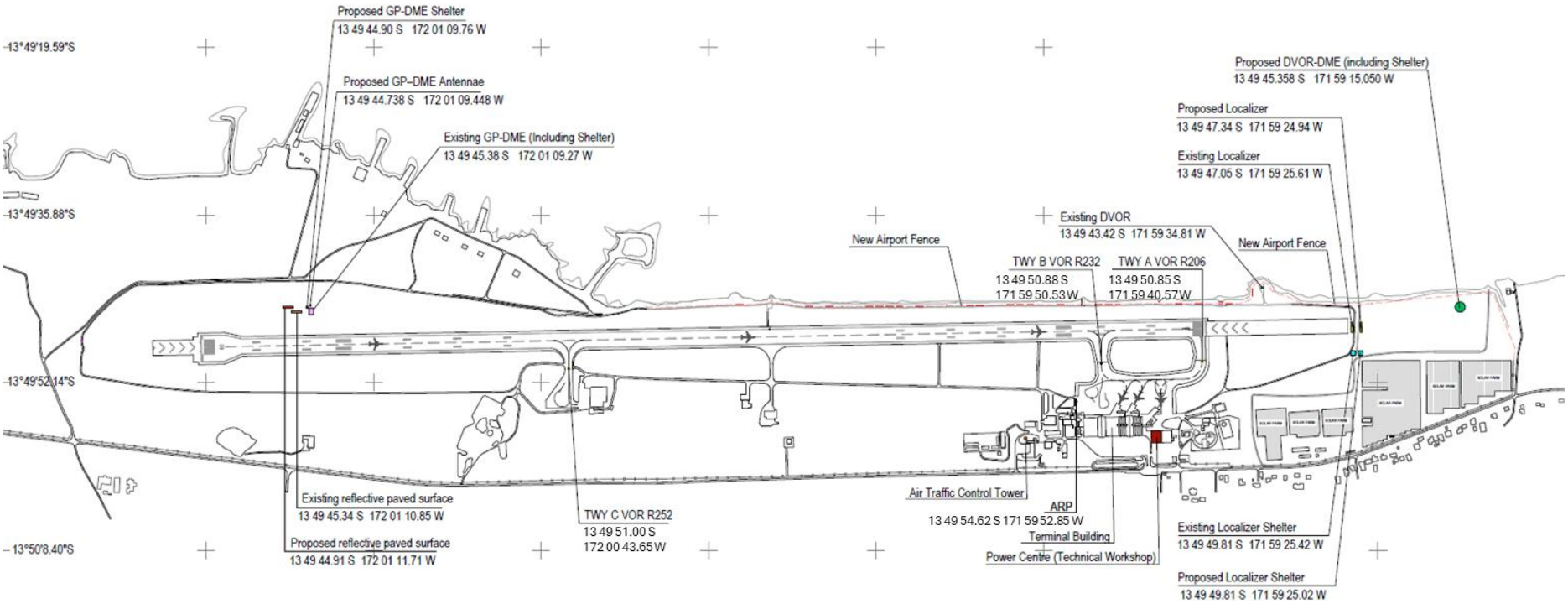


Figure III-1: Proposed Locations of NAVAIDS equipment

a. DVOR-DME

Siting of DVOR equipment

In the document 'SARIP Navaids_D1.2 Guidelines for siting of ILS & DVOR_V1R1' prepared by the Consultant, the following scenarios are made:

- Option 1: Location behind the existing Glide Path;
- Option 2a: Location at the eastern end of the airport considering the 300m runway extension at RWY 26;
- **Option 2b: Location at the eastern end of the airport considering the 150m runway extension to east and west;**
- Option 3: Location at the eastern end of the airport without considering the 300m runway extension;
- Option 4: Existing DVOR location.

Based on the Consultant's analysis on the proposed locations, Option 2b is recommended by the Consultant.

The benefits and disadvantages of Option 2b is presented in the table below:

Table III-1: Analysis of DVOR Option 2b

Benefits	Disadvantages
The location of DVOR is away from main constructions at the airport, which reduces the potential interferences with buildings.	**Potential interference with solar panels, trees and houses beyond the airport boundary on the east side.** Subject to further analysis by potential supplier, should the removal of solar farm find necessary, extensive consultation and engagement with the solar farm service providers and site specific EMP for decommissioning of facilities to address E&S risks well ahead of construction stage will be required.
The location of DVOR allows runway extension of 300m (150m of the east side and 150m on the west side).	Close to the coast and located on the lowest point of the airport does not provide improved coverage (similar to existing CVOR).
No exemption is anticipated.	This remote location will require more civil work to connect to the main facilities (power supply and fibre network).
No potential interference with the Localizer antenna.	Close to the coast and located on the lowest point of the airport will be subject to potential flooding.
Access is convenient for installation and maintenance.	This remote location will require additional maintenance of the area around (cutting grass and trees, secure the fences).
Located within SAA's airport land.	

Figure III-2: Proposed DVOR Location

A further analysis has been made on the potential impact of the DVOR equipment to the surrounding nature.

Height of DVOR equipment

Limitation – Take-off climb surface

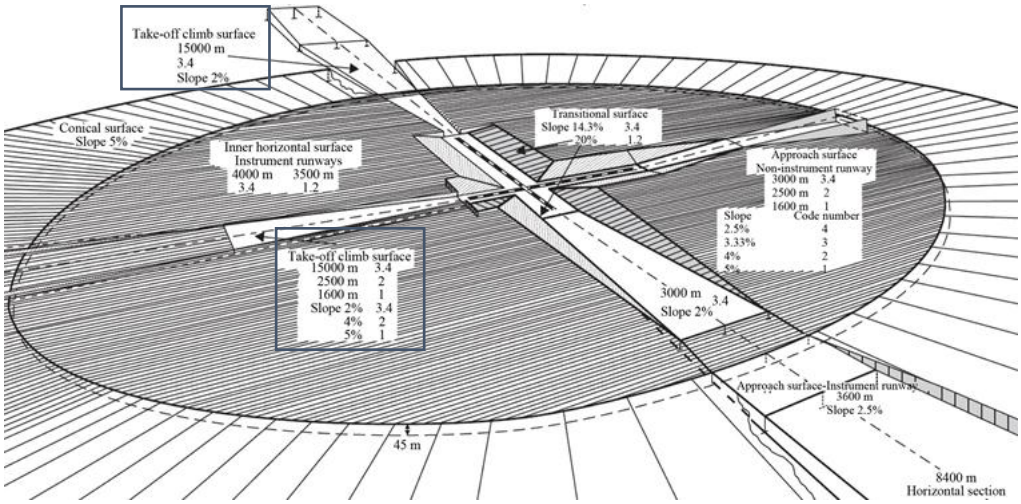


Figure III-3: Obstacle Limitation Surfaces – Take-off climb surface (Source: ICAO Annex 14)

Based on the ICAO Annex 14, the maximum allowable height of the DVOR equipment is limited by the take-off climb surface, which is extended at a 2% slope from the end of the Clearway (CWY). The maximum allowable height of the DVOR equipment (including counterpoise and antenna) are presented below:

- 13m, distance of DVOR from existing Clearway (CWY) 26 with no extension (650m);
- **10m (Target consideration**), Distance from CWY26 with potential 150m extension (500m);
- 7m, Distance from CWY26 with potential 300m extension (350m). This option has been disregarded and not to be further developed.

Siting guidance – EUROCAE ED-52 document

Based on the EUROCAE ED-52 Minimum Performance Specification for conventional and Doppler VHF omnirange (C VOR and D VOR), which provides the allowable height of obstacles with respect to a DVOR counterpoise of 3m:

- Within 100m radius:
    - Sheds and individual trees with height of 7m.

- Within 200m radius:
    - Group of trees up to height of 10m.
    - Individual tree up to height of 12m.
- Within 300m radius:
    - Building up to height of 12m.
    - Metallic building up to height of 6m.

Features within 300m radius of the proposed DVOR location:

From site surveys with respect to the DVOR location (13 49 45.358 S 171 59 15.050 W):

- Within 100m radius (within SAA land boundary):
    - SAA confirmed on 14th August 2025 that the trees within the new airport fence will be demolished.
- Within 200m radius:
    - Height of buildings (Blue) : 1x6m, 1x 8m, Brick buildings with metallic roof.
    - Group of trees average ~10m, maximum 14m.
- Within 300m radius:
    - Group of trees average ~11m, maximum 15m.

For the land east to the new Airport fence, SAA informed on 14th August 2025 that SAA's legal team is coordinating with the Office of the Attorney General (OAG) regarding the completion of the land acquisition process (refer to Annex E – Land Acquisition at Fusive'a).

Assumptions:

- Potential elevated DVOR foundation (to avoid flooding): 0.5-1m. This height is included in the DVOR Counterpoise height.
- Typical DVOR Counterpoise height 3/5/7/10m.
- Typical DVOR antenna height (on top of counterpoise) <1.5m.
- Typical DME height (on top of counterpoise) <3.5m.
- Solar panel: Assumptions: Maximum ground level from the DVOR site is +3m, height of solar panel is <2m.

Based on the above considerations with respect to the proposed location of DVOR equipment, the following table presents the potential impact to the features within 300m radius with different DVOR counterpoise height:

Table III-2: Impact Analysis of different DVOR Counterpoise heights

DVOR Counterpoise Height	Radius from centre of DVOR equipment		
	100m	200m	300m
3m (Typical height from ED-52)	No impact to the project considering all trees that are located within SAA security fence and will be removed.	- Group of trees higher than 10m to be trimmed below 10m. - Individual trees higher than 12m to be trimmed below 12m. - Brick-building with metallic roof to be removed (or replace with non-metallic roof). - Solar panels to be removed.	No impact
5m (150m runway extension)	No impact to the project considering all trees that are located within SAA security fence and will be removed.	- Group of trees higher than 12m to be trimmed below 12m. - Brick-building with metallic roof to be removed (or replace with non-metallic roof)	No impact
7m (no runway extension)	No impact to the project considering all trees that are located within SAA security fence and will be removed.	No impact	No impact

The following figures graphically presents the potential impacts within 300m radius of the proposed DVOR location with a DVOR counterpoise height of 3m and 5m respectively.

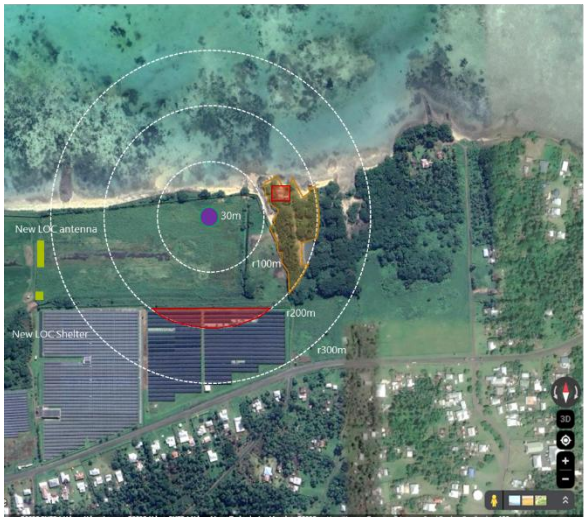
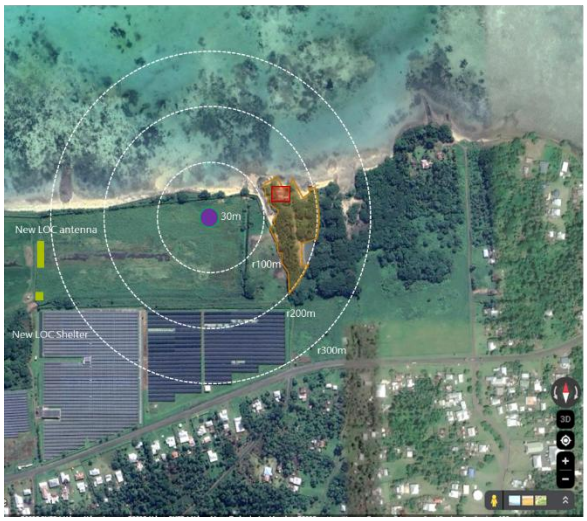


Figure III-4: Graphical analysis – DVOR Counterpoise (3m)



Based on EUROCAE ED-52 guidance document:

- Group of trees higher than 12m to be trimmed below 12m

- Brick-building with metallic roof to be removed (or replace with non-metallic roof)

Figure III-5: Graphical analysis – DVOR Counterpoise (5m)

Further details of the features potentially impacted are presented below.

Figure III-6: Trees at the eastern end of the airport

The trees in this area are on the land that is currently undergoing a land acquisition process by GoS and is currently identified as 'Toesulusulu's land'. The Consultant at this stage, have not performed a detailed survey of the exact types and quantities of the trees in this area, as the potential impact to the trees in this area are subject to the Supplier's exact NAVAIDS equipment solution.

Figure III-7: Brick Building with metallic roof

Figure III-8: Solar panels south to the airport

The solar panels are at a maximum of 1.5 meters from ground level, based on the available information provided by SAA. The impact to the solar panels is anticipated only if a <3m DVOR counterpoise is proposed (refer to Figure III-4 above). such low counterpoise height is highly unlikely based on the information received from the potential suppliers. Such impacts are to be avoided as much as possible, subject to the Supplier's solution.

From the analysis above, the Consultant outlines the following mitigations to the identified potential impacts:

- To analyse with the Supplier DVOR Counterpoise elevation of >5m to comply with ED-52 guidance and does not penetrate maximum allowable height for take-off climb surface.
- By the Supplier, to conduct site survey, signal in space analysis, implement filtering to avoid reflection in that area. The equipment's maximum range will be impacted but it may be acceptable.
- Based on the latest technology, the DVOR may be able to operate in normal configuration assuming that the Contractor proposes a solution that does not degrade the system's performance with regards to the existing nearby terrain and features.
- SAA's process of acquisition of land east to the airport will be completed before project commencement.
- SAA to trim highest trees above 12m within 200m to 300m radius from the DVOR, according to the ED-52 document.
- SAA to replace the metallic roof of the buildings with other material (if required) according to ED-52 document.

It is important to reiterate that the Consultant has performed the above analysis based on the available survey data and guidance document. The Contractor/Supplier is required to carry out site surveys and signal-in-space analysis based on their DVOR equipment solution in order to finalize the location and height of the DVOR equipment thus the potential impact to the surrounding features.

b. Localizer

In the document 'SARIP Navaids_D1.2 Guidelines for siting of ILS & DVOR_V1R1' prepared by the Consultant, the following scenarios are made:

- Option 1: Location considering 300m runway extension;
- **Option 2: Location considering 150m runway extension to both 08 end and 26 end.**

As agreed with SAA, the option of 300m runway extension was not to be considered thus Option 2 is recommended by the Consultant.

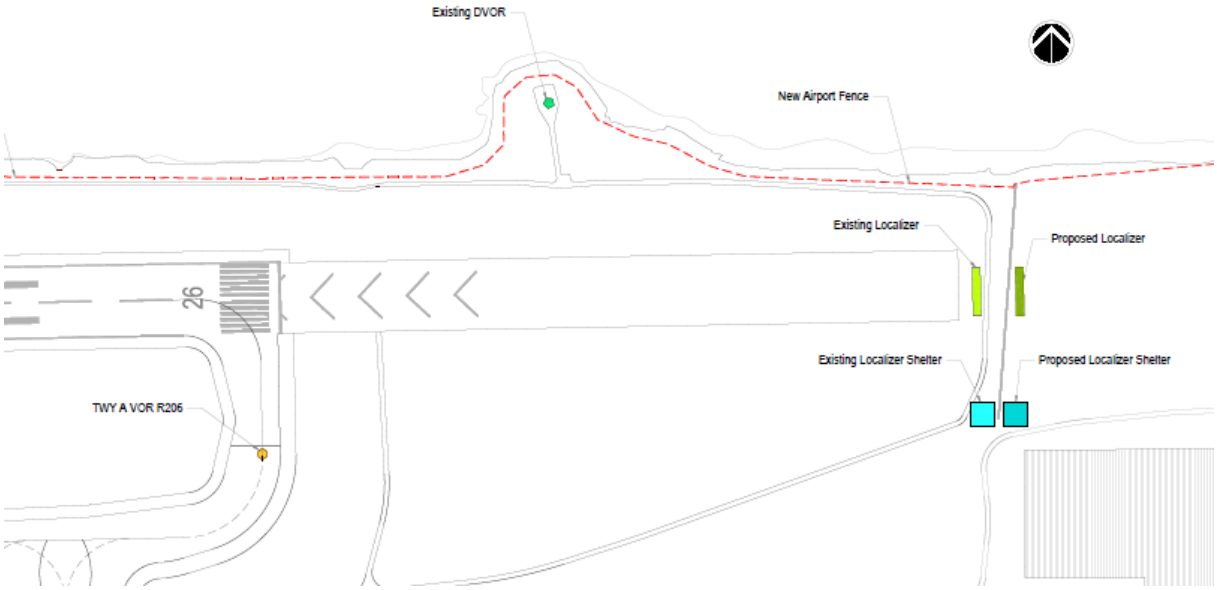


Figure III-9: Proposed Locations of Localizer Equipment & Shelter

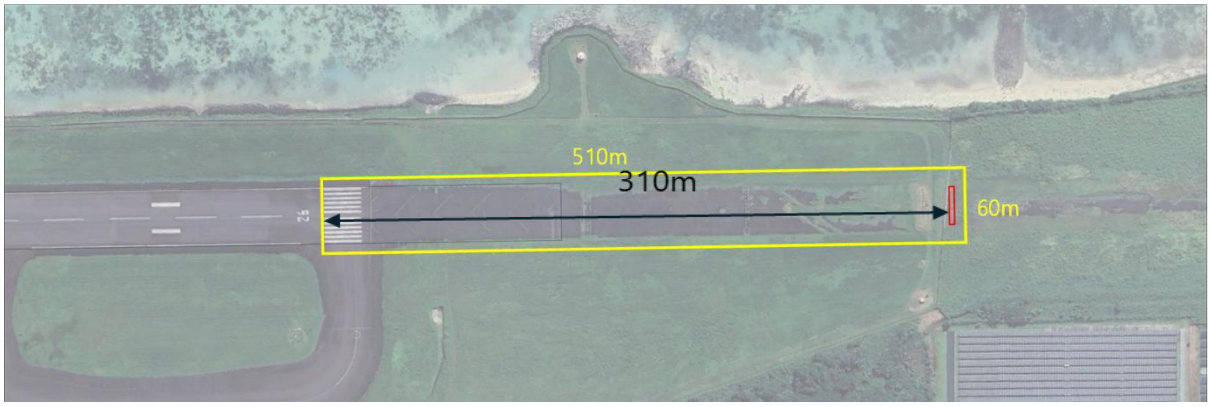


Figure III-10: Critical area of the proposed Localizer location

For the Localizer equipment, the Environmental impacts are limited to those associated with the civil works during the equipment installation.

c. Glide Path (GP-DME)

In the document 'SARIP Navaids_D1.2 Guidelines for siting of ILS & DVOR_V1R1' prepared by the Consultant, the GP-DME is proposed at the location north of the existing glide path with a slight shift in location for at 324m lateral to the east of the exiting Threshold 08 and 120m traverse to the runway centreline as shown in **Figure III-11**.

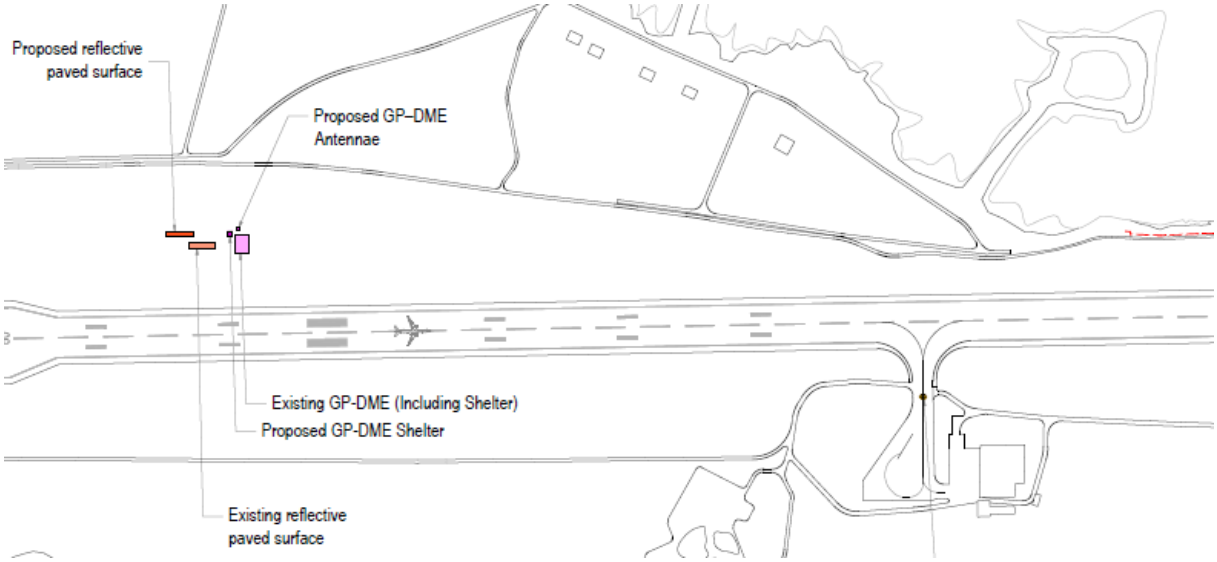


Figure III-11: Proposed Locations of GP-DME Equipment & Shelter

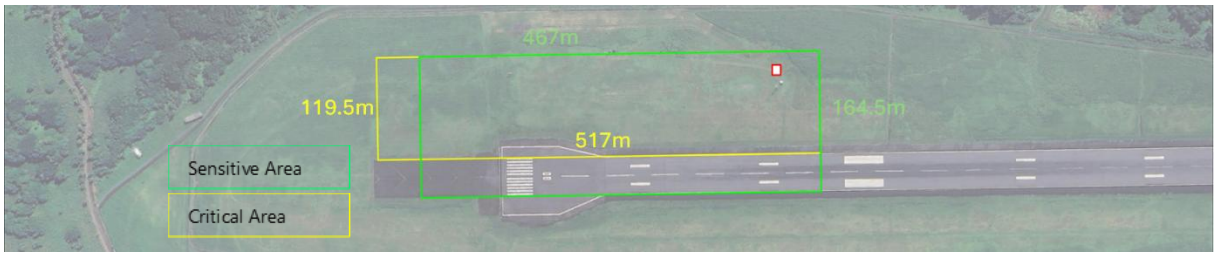


Figure III-12: Proposed location of Glide Path

For the GP-DME equipment, the Environmental impacts are limited to those associated with the civil works during the equipment installation.

d. Do nothing option

The 'do nothing' option would result in the new navigational aids equipment not being installed. This would mean that the positive impacts associated with the Project would not eventuate, and the climate resilience of the Faleolo International Airport is not enhanced, aviation connectivity is not reliable for the effective delivery of humanitarian aid and emergency goods and supplies in the event of an Eligible Crisis or Emergency. This does not support the economic development of the country and GoS's vision for Samoa to be a leading tourist destination in the Pacific with 400,000 arrivals per year by 2040 will not be achieved. The 'do nothing' option would not meet the overall objective of the Project.

e. Project Area of Influence Summary

The project area of influence is summarized in **Table III-3.**

Table III-3: Project area of influence

Aspect	Description
Site legal description	n/a
Land ownership	Government of Samoa Customary Land Owners (subject of non-project related land acquisition process)
Legal rights	Samoa Airport Authority, Customary Land Owners (subject of non-project related land acquisition process) Economic asset owners
DVOR coordinates	-13.829266, -171.987514
Localizer Antenna coordinates	-13.829564, -171.990228
Glide Path Antenna coordinates	-13.829094, -172.019291
Site sensitivities	• Customary land (including vacated residence) subject of non-project related land acquisition process • Tree trimming outside of the physical footprint of the airport site; • The proposed location of the new navigational aids equipment are setback more than 80m from the coast, and the project has no direct access to coast and marine environment.
Sensitive receptors	Sun Pacific Energy Limited – operators of the solar plant Customary land owners who are currently negotiating state acquisition of their land.
Site security	Chink-link perimeter fence along the boundary of the airport site
Site accessibility	Establish temporary access through SAA land to link the main West Coast Road to the proposed locations of the new navigational aid equipment during construction
Site climate vulnerability	New navigational aid equipment locations are situated within the Coastal Hazard Zone of the Aana Alofi 3 District CIM Plan. A 4k long revetment runs along the coast of Faleolo International Airport. The majority of the coast has pockets of basalt gravel and coastal vegetation which provides some protection to coastal erosion.

Aspect	Description
Site climate	Samoa has two main seasons: a dry period from April to September and a wet period from October to March. Humidity and temperature stay high and consistent year-round. South-easterly trade-winds prevail about half the time during the dry months but become more variable in the wet season, which brings heavy rainfall, especially to northern and north-western regions. Storm water runoff typically occurs only after extended heavy rain during the wet period.
Site facilities and services	Establish temporary connection to water and electricity during construction
Site vegetation	Grassland with scrubs with no biodiversity value.
Land use	Airport operations.
Neighbouring community	Satapuala village is located in the wider surroundings and outside of proximity to the location of the new navigational aid equipment.

f. Installation/Construction Works

The construction phase of the project involves the following:

- Tree trimming and removal;
- Establishment of the construction laydown area;
- Equipment installation & decommissioning works;
- Civil works construction.

The civil works and equipment installation are expected to take 3 months, and the decommissioning of existing NAVAIDS equipment is expected to last for 2 months, although these will be confirmed by the Contractor/Supplier.

Tree trimming and removal

Tree trimming, if required, will include cutting tree branches, stockpiling, and removal offsite for re-purpose or disposal. This involves equipment such as chainsaws and pruning tools. The potential area for tree trimming, if required, shall be identified during detail design on a site drawing for SAA's approval.

Construction Laydown Area

The equipment supplier/construction contractor will require a construction laydown area to store materials, equipment, have a site office etc., and generally support the execution of installation and construction works. The location of the construction laydown area shall be explored by the equipment supplier/construction contractor in consultation with SAA to utilize a vacant area within the footprint of the airport site.

Equipment Installation & Decommissioning Works

This will involve the transportation of new navigational aid equipment onsite and stored in secure, dry facilities. Installation would involve position and mounting onto foundations. A lifting method statement shall be prepared by the equipment supplier prior to the start of works. An earthworks plan shall be prepared as part of detail design on a site drawings.

For the decommissioning of existing NAVAIDS equipment, the methodology shall be prepared by the Contractor in the Installation Plan with the Method of Work Plan for SAA's approval.

Civil Works Construction

This will involve excavation and foundation construction as well as trenching for underground ducts. Civil works shall be defined during detail design on a site drawing, and the methodology shall be detailed in the Method of Work Plan for SAA's approval.

g. Equipment Supplier/Construction Contractor

The equipment supplier/construction contractor will confirm the location of the construction laydown area through consultation with SAA and obtain a DC from PUMA to establish temporary facilities.

The equipment supplier/construction contractor would be responsible to submit a detailed layout plan for the development of the construction laydown area showing the location of temporary building and facilities that are to be constructed together with the location of the site road, storage area and drainage facilities.

At the completion of equipment installation and construction of civil works, all construction laydown area facilities shall be dismantled and removed from the site and the whole site restored. All oil or fuel contaminated materials shall be removed from the site and transported and buried at Tafaigata Landfill with payment.

Workforce

The equipment supplier/construction contractor shall confirm the number of workers required during the installation/construction phase. Workers will include engineers, site superiors, safety personnel, machinery operators, laborers, specialist machinery installers, etc.

The installation/construction workforce will travel to and from the construction site throughout the installation/construction period. Accommodation/camp facilities are not anticipated (non-local workers are expected to be accommodated in existing facilities) and will not be permitted within the footprint of the airport site to reduce social risks and impacts on the airport operations.

Construction Working Hours

Construction works are expected to comply with PUMA approved working hours for construction as follows:

- Monday to Friday: 7am to 6pm.
- Saturday: 8am to 1pm.
- No work on Sundays and public holidays.

Work undertaken outside of standard working hours (if required) would need prior approval from PUMA.

Machinery and Equipment

The machinery and equipment likely to be used during the installation/construction period include crane, excavator, delivery truck, hand tools, haulage trucks etc. The equipment supplier/construction contractor shall finalize the machinery and equipment prior to the commencement of installation/construction phase including arrangement for servicing. Small hand-held power tools will also be used during foundation construction.

Source and Quantity of Materials

Clean fill material for underground cabling and ducts is expected to be sourced from an existing local quarry. In accordance with Part V of the Planning and Urban Management Act 2004 and other relevant legislation, the construction contractor shall verify that the selected local quarry has a valid DC.

IV. AFFECTED PERSONS AND SAA ENGAGEMENT

a. Engagement Strategy

Affected persons consultation and engagement with SAA is required for the project. Affected persons participation is one of the key principles underlying the Planning and Urban Management Act 2004, and the design phase must comply with the requirements of the Planning and Urban Management (Environment Impact Assessment) Regulations 2007 as they pertain to consultation during the environmental impact assessment process. In addition, the Samoa Codes of Environmental Practice (COEP) (MNRE 2007) prescribes procedures for carrying out consultations during the EIA process.

The purpose of affected persons consultation and stakeholder engagement are:

- To ensure a reasonable level of community safety, healthy, and amenity are considered during the design and construction phases
- To integrate affected people views, rights, and interests in the overall Project design
- To inform mitigation measures and alternatives to ensure the best community outcomes from the Project

b. Consultation during Design Phase

An initial consultation with SAA was held on Tuesday 22nd July 2025 to discuss the potential environmental and social impacts associated with the installation of new navigational aids equipment and associated civil works, and how the Project may affect them. A topographic survey was commissioned by SAA to map the existing environment and features in order to determine specific features that would be affected by the installation of new navigational aids equipment and associated civil works.

Further engagement with SAA will be required during the detailed design of the Project by the Contractor and when site drawings are available to ensure mitigation measures are suitable during the installation/construction works. Communications with the customary landowners and owner of the residential house shall be carried out during the detailed design phase of the Project, in case of the land acquisition process by SAA[2] have not been completed at the time. Prior to the commencement of works, the Construction Contractor shall notify the owner of the residential house of construction start dates, the duration of works and activities, and any other relevant information, in case of the land acquisition process by SAA have not been completed at the time.

A summary of issues raised are provided in **Table IV-1** including a summary of responses and how each issue has been considered. Table IV-1 shall be updated during the detailed design of the Project.

Table IV-1: Design phase consultation

Date	Participants	Issue	Response
Tuesday 22nd July 2025	SARIP PIU/ Ruseta Taaloga	Potential impact on customary land currently being acquired by the SAA, and the potential impact on the residential building.	Residential building has been vacated. Land acquisition process was reinitiated in 2018 well before this project. Agreement on compensation has been reached with customary land owners. Such process will be completed prior to the project commencement.

[2] *The process of land acquisition is related to a separated project and it is out of the scope of the NAVAIDS Supply and Installation project, and it will be completed before the commencement of the NAVAIDS project.*

Yet to commence	SARIP PIU/ Ruseta Taaloga and Sun Pacific Energy Ltd	Potential impacts of their solar panels.	SAA to set up a meeting with Sun Pacific Energy Ltd in December 2025.

c. Referral to Relevant Authorities

In accordance with the *Planning and Urban Management (Environment Impact Assessment) Regulations 2007* PUMA will refer this PEAR to relevant authorities who have a statutory or regulation function in the Project for their written comment.

This PEAR will also be publicly notified by PUMA, allowing persons who may be affected by the Project to make a submission, by way of objection or otherwise. PUMA will then consider any submissions when determining whether to grant a DC for the Project and if any, development consent conditions.

d. Pre-construction Engagement (Airport Operations)

Installation/construction activities can impact airport operations. Engagement with the SAA particularly those in airside operations is necessary to raise awareness on impacts that may affect aircraft movement area during installation/construction and discuss specific mitigation measures.

Detailed information such as construction plant and equipment and works programs are not known at this stage of the project. As such, detailed consultation with SAA Airside operations personnel is required during pre-construction stage of the project to confirm detailed information and develop specific mitigations.

The equipment supplier/construction contractor shall prepare specific information to mitigate aircraft movement problems for dissemination to the SAA for the use of the any part of the airport site as well as any temporary entry/exit points into the footprint of the airport site. The equipment supplier/construction contractor shall consider communication tools such as a flyer to engage with the SAA Airside operations personnel and should include key information:

- Key activities and timelines.
- Procedures to execute installation and construction works.
- Contact information for installation and construction related grievances and complaints.

e. Grievance Redress Mechanism (GRM)

A grievance redress mechanism (GRM) is important to resolve grievances and complaints in a timely, effective and efficient manner that satisfies all parties involved. It provides a transparent and credible process for fair, effective and lasting outcomes. It also builds trust and cooperation as an integral component of broader engagement strategy that facilitates corrective actions.

Specifically, the GRM:

- Provides affected people with avenues for making a complaint or resolving any dispute that may arise during the implementation of the Project;
- Ensures that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants; and
- Avoids the need to resort to judicial proceedings.

Grievances relating to this project will be handled by the SARIP Project Implementation Unit (PIU) and in accordance with any relevant policy of the SAA. All complaints are to be submitted to the Head of the SARIP PIU through seniormanagement@saa.ws.

During the installation/construction phase, the equipment supplier/construction contractor will establish a site-specific GRM to handle any grievances relating to installation/construction activities. The

contractor will report grievances and complaints and how they have been handled to the SARIP PIU in regular progress reporting.

Grievances will be escalated to SAA when:

- The equipment supplier/construction contractor cannot resolve the grievance.
- The complainant is not happy with the proposed resolution by the equipment supplier/construction contractor.
- The grievance is of a sensitive nature (i.e. Sexual Exploitation Abuse or Sexual Harassment [SEA/SH] related).

V. Environmental and Social Assessment

a. Assessment methodology

The potential environmental and social impacts associated with the Project have been assessed in accordance with the SPREP (2016)[3] risk assessment methodology. The environmental and social risk assessment examines the consequences, probability of occurrence, and relative significance of potential adverse impacts associated with the Project.

The risk assessment uses defined criteria and rating methodology to examine and classify impacts and to prioritize their management. Given the inherent uncertainty in assessing potential impacts, the risk assessment provides structure when considering qualitative and quantitative information. The risk assessment method involves the following steps:

Step 1 – Assign rating

Assign a rating and score for each of the three criteria (A-C) listed in the table below, and then adding the scores to determine the consequence rating for an impact.

Rating	Definition of rating	Score
A. Extent – the area over which the impact will be experienced		
Local	Confined to the project site or study area.	1
Wider catchment	Extends beyond the project site to the wider, surrounding area.	2
National	Extends to the whole nation.	3
Regional or global	Extends beyond country borders	4
B. Intensity – the magnitude of the impact i.e. whether the impact will result in minor, moderate or major environmental, economic and social changes		
Low	Minor or negligible changes, disturbances, damages, injuries or health effects. Likely to generate minimal interest or concern amongst the local community/affected stakeholders.	1

[3] SPREP (2016) Strengthening Environmental Impact Assessment: Guidelines for Pacific Island Countries and Territories. Apia, Samoa.

Rating	Definition of rating	Score
Medium	Moderate changes, disturbances, damages, injuries or health effects. Likely to generate more prolonged interest or concern amongst the local community/stakeholders.	2
High	Major or severe changes, disturbances, damages, injuries or health effects. Likely to generate widespread and intense interest or controversy amongst local, national and regional communities/ stakeholders.	3
C. Duration – the timeframe over which the impact will be experienced and its reversibility		
Short-term	Up to 2 years – impact is reversible or limited to when development activities or environmental events are taking place. Remediation or recovery is possible.	1
Medium-term	2 to 15 years – impact is reversible or limited to when development activities or environmental events are taking place. Remediation or recovery is possible.	2
Long-term	More than 15 years – impact is permanent or gradually reversible with sustained remediation and recovery efforts.	3

The combined score of the three criteria (extent, intensity, duration) corresponds to a consequence rating, as follows:

Combined score (A+B+C)	3 – 4	5 – 6	7 – 8	9 – 10
Consequence rating	Minor	Moderate	Major	Massive

Step 2 – Assign probability

Assess the probability of the impact occurring according to the following definitions:

Probability – the likelihood of the impact occurring	
Improbable	Unlikely to occur during project lifetime < 20% chance of occurring
Possible	May occur during project lifetime 20%–60% chance of occurring
Probable	Likely to occur during project lifetime > 60%–90% chance of occurring
Highly probable	Highly likely to occur, or likely to occur multiple times during project lifetime > 90% chance of occurring

Step 3 – Determine significance

Determine the overall significance of the impact as a combination of the consequence and probability ratings, as set out in the matrix below:

		Probability of Occurrence			
		Improbable	Possible	Probable	Highly Probable
Consequence of Impact	Minor	Very low	Very Low	Low	Low
	Moderate	Low	Low	Medium	Medium
	Major	Medium	Medium	High	High
	Massive	High	High	Very High	Very High

Step 4 – Level of confidence

State the level of confidence in the assessment of the impact as high, medium or low. The level of confidence will depend on the extent and type of information available, whether it is qualitative or quantitative, and whether it is based on direct measurements, extrapolated data, estimations or expert opinion.

Step 5 – Assign mitigation measures

Identify and describe practical mitigation measures that can be effectively implemented to reduce the impact and reassess the impact. This second assessment examines how impact extent, intensity, duration and/or probability are likely to change, after mitigation measures have been put in place.

b. Detail Design Stage Impacts

Physical Displacement, and/or Economic Displacement

Proposed activity

The siting of the DVOR is located within the existing physical footprint of the airport site.

A DVOR counterpoise height of >3m has been selected during design as it does not penetrate maximum allowable height for take-off climb surface..

Potential impacts

The siting of the DVOR will require:

- Potential tree trimming and the potential alteration to the roof of a residential building on customary land soon to be acquired by SAA.

Notes:

- Customary land will be acquired by SAA before project commencement and therefore land use restrictions will be on SAA land only.
- >3m DVOR avoids impacts to the existing solar facility located on SAA land to the south of the airport.

Rating and Mitigation Measures

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
Without mitigation	Local 1	High 3	Long-term 3	Major 7-8	Highly probable	High	High
Objectives: • Develop the detailed design and configuration of the equipment to serve safe aircraft operations around Faleolo International Airport. • To minimize potential impacts to the surrounding features. Inputs: • Supplier's solution, site survey and signal-in-space analysis to be provided. Mitigation Measures: • Detailed Design to include: - The justification of using a >3m DVOR counterpoise to avoid impacts to the existing solar facility located on SAA land to the south of the airport. - Develop site drawings to show area size required for tree trimming, if required. - Develop site drawings for alteration to the roof plan of the residential building, if required. - Any other mitigation measures proposed by the Contractor to minimize impacts to the surrounding features. • Affected persons and customary landowners, if any, will be engaged with throughout the decision-making process.							
	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
With mitigation	Local 1	High 3	Long-term 3	Moderate 5-6	Highly probable	Medium	High

c. Installation/Construction Stage Impacts – Traffic and Access

Existing environment

Faleolo International Airport is located on the northwestern side of Upolu on the seaside of the main West Coast Road, a national road of the Upolu Road Network. The main West Coast Road is a busy road, and it is the only road that provides access to the Faleolo International Airport. There is one main entrance to the airport site and several service access to the airport site, all coming off the main West Coast Road.

Construction impacts

Construction activities will involve the movement of various vehicles and machinery to and from the proposed siting locations and the construction laydown area. Access to propose siting locations will be confirmed when the equipment supplier/construction contractor is on-board.

Rating and Mitigation Measures

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
Without mitigation	Local 1	Low 2	Short 1	Minor 3 - 4	Highly probable	Low	High
Objectives: • Minimise disruption to other road users and function of the hospital • Minimise risks to public safety from Project-related traffic Mitigation Measures: The equipment supplier/construction contractor shall prepare and implement a Traffic Management Plan that will: • Describe the approach to managing public safety along the main West Coast Road and around the construction laydown area once selected; • Provide diagrams that show the traffic route to access the proposed siting locations and the construction laydown area. • Describe mitigations that will be put in place to minimise disruptions and public safety risks (e.g., marking existing overhead lines in close vicinity to the access point, timing of deliveries, etc.) • Explain how/when temporary traffic signs and/or traffic controllers will be used to direct traffic when entering/exiting the main West Coast Road.							
	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
With mitigation	Local 1	Low 1	Short 1	Minor 3 - 4	Probable	Low	High

d. Installation/Construction Stage Impacts – Erosion and sedimentation

Existing environment

The siting of the new navigational aid equipment is proposed within the existing physical footprint of the airport site. The siting area are mainly grassland. The area to establish the construction laydown area is yet to be selected.

Construction impact

Construction activities such as tree trimming and removal, earthworks, stockpiling, spoil disposal and leaving areas exposed can cause erosion and sedimentation. Care must be taken to prevent run-off from flowing to areas adjoining the siting area during construction.

Rating and Mitigation Measures

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
Without mitigation	Local 1	Low 1	Short 1	Minor 3 - 4	Highly probable	Low	High

Objective:

- To minimise erosion and sedimentation.

Mitigation Measures:

- Limit of works shall be defined to minimize area of disturbance. This includes any areas that are designated for use as laydown.
- Cut-off drains construction around the defined siting area shall not contribute to erosion.
- The defined siting area shall be stabilized as soon as possible after the final earthworks have been completed.
- Where earthworks activities stop for more than 14 days, interim stabilization measures shall be promptly implemented.
- All runoff from the disturbed area shall be collected and diverted to facilities for removal of sediment.
- Stockpiles shall not be located within drainages lines and silt fencing shall be placed downslope of the stockpile and/or stockpile will be covered.
- Cleared vegetation and spoil shall be disposed of in a manner and location that does not contribute to sedimentation.
- Area used for construction laydown area will be reinstated when they are no longer required. This includes revegetating disturbed areas promptly with native vegetation to stabilize soil and restore ecological balance.
- Schedule major soil disturbances or earthworks to dry periods to reduce erosion risks.
- Interceptor channels:
    - May be used within the construction site to reduce the speed of flow and prevent accelerated erosion
    - Shall convey collected waters to sedimentation basins or to vegetated area within the construction site, but not directly to areas outside of the construction site
    - Shall be designed so that outlets to vegetated areas reduce the discharge speed to a level that will not cause accelerated erosion
- Regular inspection of erosion control measures and drainage systems to maintain effectiveness.
- Implement the Chance Finds Procedures.
- Secured transport:
    - Haul trucks used for the removal of stripped topsoil and cleared grass and coconut palms; and import of fill material shall be sufficiently tight and secure to prevent material falling onto the road.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
With mitigation	Local 1	Low 1	Short 1	Minor 3 - 4	Possible	Very low	High

Operation impact

No erosion or sedimentation impacts are expected during operations as the site will be rehabilitated and stormwater drainage installed as required before hand-over.

e. Installation/Construction Stage Impacts – Air Quality

Existing environment

There are no known sources of significant air pollution near the Project site. There are also no known sensitive receptors near the Project site. The residential building is located more than 100m away from the siting of the DVOR.

Construction impacts

Air quality can be affected during construction through:

- Generation of dust from wind erosion caused by vegetation removal, earthworks, stockpiling, spoil disposal and leaving areas exposed.
- Emission of fumes through the use of machinery, vehicles and equipment.

Dust is expected to be minimal but may still pose a nuisance during earthworks or before cleared areas are stabilized. Any nuisance will mostly affect workers and visitors to the Project site.

Rating and Mitigations

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
Without mitigation	Local 1	Medium 2	Short 1	Minor 3 - 4	Highly probable	Low	High
Objective: • Minimise nuisance from emissions (fumes) and dust Mitigation Measures: • Keep all machinery in good condition. • Shut down equipment when not directly in use. • Implement mitigation measures for minimising erosion and sedimentation to limit dust from wind erosion (see section erosion and sedimentation). • Implement the GRM to monitor and resolve issues/concerns raised.							
	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
With mitigation	Local 1	Medium 1	Short 1	Minor 3 - 4	Highly probable	Low	High

Operation impact

New navigational aid equipment does not emit air pollutants.

f. Installation/Construction Stage Impacts – Noise and Vibration

Existing environment

The Project site is located within the existing physical footprint of the airport site and is subject to noise levels commonly found in airport environments.

The proposed siting of the DVOR is located away more than 900m from airport landside facilities (passenger terminal, ticketing and check-in areas, retail and food services, parking area). The residential

building is located away more than 90m from the proposed location siting of the DVOR. There are no known sensitive receptors near the proposed siting location of the new navigational aid equipment.

The construction laydown area is yet to be selected but will be confirmed by the equipment supplier/construction contractor before commencing any civil works as required by the PUMA.

Construction impacts

Construction noise and vibration will result from machinery like excavators, cranes, and hand tools, as well as workforce activity. These impacts will mostly affect the workers in the immediate vicinity of the work areas and, to a lesser degree, the construction laydown area. There are no known sensitive receptors in close proximity to the proposed siting of the new navigational aid equipment.

Rating and Mitigation Measures

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
Without mitigation	Local 1	Medium 2	Short 1	Minor 3 - 4	Highly probable	Low	High

Objectives:

- Prevent significant noise and vibration impacts.
- Minimise nuisance disruption to hospital staff, patients and visitors.

Mitigation Measures:

- Implement standard construction noise and vibration mitigations at the proposed siting of new navigational aid equipment including the construction laydown area, such as:
  - ✓ Use equipment and construction methods that minimize noise.
  - ✓ Install practical acoustical attenuation on construction equipment, such as mufflers.
  - ✓ Use silenced air compressors and power generators.
  - ✓ Keep all machinery in good condition.
  - ✓ Install exhaust silencing equipment on crane, dump trucks, excavator, etc.
  - ✓ Post signs in areas where the sound pressure level exceeds 75 dBA.
  - ✓ Shut down equipment when not directly in use.
  - ✓ Provide workforce short breaks for high noise activities.
  - ✓ Install vibration cut-off trenches (empty or filled with attenuating material) around the site to attenuate/modify vibration.
- Implement the GRM to monitor and resolve issues/concerns raised.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
With mitigation	Local 1	Low 1	Short 1	Minor 3 - 4	Highly probable	Low	Medium

g. Waste Generation

Existing Environment

The area proposed for the siting of the new navigational aid equipment is covered with grassland and is maintained by the SAA as part of the airside facilities.

Construction impacts

During construction, the following types of waste will be generated at the siting locations and the construction laydown area:

- Vegetation (e.g., grass, tree branches etc.).
- Spoil from earthworks.
- Packaging (e.g., wooden crates, cardboard, plastic, styrofoam).
- Offcuts and excess construction materials (e.g., PVC pipes, cabling, sheet metal, wood, concrete, etc.).
- Food waste (from worker lunches).
- Hazardous waste (e.g., waste oil, used spill clean-up materials, etc.) .
- Wastewater from worker toilets .

If not managed appropriately, construction waste can cause pollution to soil and/or water and attract vermin. It can also pose a risk to workers. The Tafaigata Landfill accept hazardous waste although options for recycling and reuse of hazardous wastes, such as waste oil, should be investigated and utilized if practicable. There are also some companies that accept scrap metal.

Rating and Mitigation Measures

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
Without mitigation	Local 1	Medium 2	Short 1	Minor 3 - 4	Highly probable	Low	High

Objectives:

- Limit the generation of waste as far as practicable through applying the principles of reduce, reuse and recycle.
- Manage and dispose of wastes in an environmentally sound manner.

Mitigation Measures:

- Prepare and implement a waste management plan as part of the C-ESMP that includes:
  - ✓ A register of the waste types to be generated during installation/construction phase, estimated volumes, any particular handling/storage requirements and planned disposal methods.
  - ✓ Segregate waste onsite by separating hazardous from non-hazardous waste, and further segregating recyclables, organic, and general waste. Waste types that can be binned, adequate bins with labels should be provided.
  - ✓ Requirement to temporary store all waste streams (prior to removal from site) in suitable areas to prevent hazards such as fires, vermin or standing water/vector breeding; and to prevent waste from blowing away. Hazardous waste should be stored in bunded, impermeable surface areas (e.g., waste oils and toxic liquids, etc.)
  - ✓ Maintain spill kits and train staff in spill response procedures.
  - ✓ Develop forms for tracking waste movements and disposal.
  - ✓ Requirement for loads to be secured during transport to prevent littering.
- Avoid generating excess waste by careful planning, material estimation, and timely delivery.
- Investigate options for reuse and recycling, including for hazardous waste. Reuse materials on site where possible (e.g. backfilling soil, timber, etc).
- Dispose of solid waste (that cannot be reused or recycled) at the Tafaigata Landfill.
- Dispose of spoil in a manner that will not contribute to sedimentation. If contaminated, dispose in a manner to limit hazards to workers and the environment,

- Use of portable toilets for workers to avoid the need to construct septic tanks, including ensuring regular emptying and safe disposal at an authorized facility.
- No open burning or dumping of waste onsite or in unauthorized areas.
- Engage only licensed waste transporters and disposal companies for both hazardous and non-hazardous waste. Liaise with local authorities for waste disposal approvals and compliance.
- Train staff on waste segregation, handling, emergency response, and hygiene practices.
- Provide appropriate PPE particularly to workers handling hazardous waste streams.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
With mitigation	Local 1	Medium 2	Short 1	Minor 3 - 4	Possible	Very Low	Medium

Operation impacts

No waste is anticipated to be generated from the operation of the new navigational aid equipment.

h. Labour and Working Conditions & Occupational Health and Safety

Construction impacts

Installation/construction phase will be undertaken by a lead equipment supplier and likely sub-construction contractors. The exact number of workers required will be determined once the equipment supplier is on board. Labour-related risks during the installation/construction phase include:

- Terms of employment (employment period, remuneration, tax and insurance payments etc.) not secured by contractual agreements.
- Workers suffer discrimination and lack of equal opportunity in employment.
- Use of child labour (under 18 years old).
- Risks of workplace accidents, particularly when operating construction equipment, when working at height on equipment installation, and when handling heavy equipment and materials.
- Risks from exposure to hazardous substances (dust, cement, chemicals used in construction etc.).
- Accidents or emergencies.
- Sexual Exploitation and Abuse (SEA), GBV and VAC to workers and community.

Rating and Mitigation Measures

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
Without mitigation	Local 1	Medium 2	Short 1	Moderate 5 - 6	Probable	Medium	Medium

Objectives:

- Manage potential employment risks through implementation of HR procedures.
- Minimise OHS risks to workers and have in place systems to manage accidents or emergencies should they arise.

Mitigation Measures:

- Maintain records of recruitment and employment process of workers.
- Communicate clearly job description and employment conditions to workers.
- Provide workers with evidence of all payments made, including benefits and any valid deductions.

- Maintain records regarding labour conditions and workers engaged under the Project, including contracts, registry of induction of workers including Code of Conduct, hours worked, remuneration and deductions (including overtime).
- Assign a designated safety officer.
- Ensure no child or forced labour is involved in the Project.
- Establish and implement a Worker GRM.
- Provide workers with:
  - ✓ toilet and washing facilities;
  - ✓ adequate supplies of potable drinking water;
  - ✓ clean rest/lunch break areas for workers to have short breaks.
  - ✓ appropriate PPE suitable for the activities being undertaken.
- Maintain records of training/induction dates, number of trainees, and topics.
- Ensure that two qualified first-aid personnel are available at the Project site and the construction laydown area.
- Provide spill kits, fire extinguishers and first aid kits at prominent locations around the Project site and the construction laydown area.
- Prepare and implement an OHS Management Plan that includes:
  - ✓ Roles and responsibilities including those of sub-contractors;
  - ✓ Risk assessment covering construction activities, including a register of identified hazards, risk ratings, and mitigation measures;
  - ✓ Incident reporting (including to MOH, PUMA, etc), investigation and corrective action
  - ✓ Emergency response procedures, including identification of the emergency scenarios, specific emergency response procedures, training of emergency response personnel, emergency contacts, procedures for interaction with government authorities (Fire and Emergency Services Authority (FESA), Tupua Tamasese Meaole (TTM) Hospital, PUMA);
  - ✓ Training and competency requirements for certain roles;
  - ✓ Specific procedures and mitigations for heavy lifts using cranes to minimise risk to workers, infrastructure and the public, such as avoiding lifts over existing infrastructure, avoiding using or having cranes extended during heavy winds, etc.
  - ✓ Other control measures such as general site safety, PPE, community health and safety, and health and welfare promotion and facilities for workers;
  - ✓ Job Hazard Analysis procedure, or similar;
  - ✓ Daily pre-start meetings and toolbox talks;
  - ✓ Site inspection requirements and checklists;
  - ✓ Maps of muster points;
  - ✓ Schedule for emergency drills.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Confidence
With mitigation	Local	Low 1	Short 1	Minor 3 - 4	Possible	Very Low	Medium

Operation impacts

Operation of the new navigational aid equipment poses no risk to maintenance works.

VI. Environmental and Social Management Plan (ESMP)

The Preliminary Environmental Assessment Report has assessed the potential environmental and social impacts associated with detailed design, installation/construction and operation of the Project. It also identified mitigation and management measures that should be implemented to avoid and minimise the potential adverse impacts on the environment and people.

In accordance with the *Planning and Urban Management (EIA) Regulation 2007*, this section provides a draft Environmental and Social Management Plan (ESMP) that sets out the environmental and social management measures to guide the Equipment Supplier/Construction Contractor in the preparation and implementation of their C-ESMP. A summary of the operational environmental and social management measures has also been provided in **Table VI-1**.

a. Roles and Responsibilities

The roles and responsibilities for the implementation of the ESMP throughout the project implementation are as follows:

Design and Supervision Consultant:

During the installation/construction stage, the Design and Supervision Consultant will supervise the installation/construction works, and ensure mitigation measures and recommend good practices are implemented by the equipment supplier/construction contractor.

The Design and Supervision Consultant is responsible for:

- Ensuring the PEAR incorporating the ESMP is included in the bidding documents;
- Ensuring all environmental and social mitigation measures and consent conditions relevant to design are incorporated into the detailed design of the Project;
- Reviewing the C-ESMP;
- Monitoring the effectiveness of mitigation measures, control facilities, procedures.

Samoa Airport Authority:

During operation stage, SAA is responsible for navigational aids equipment operations and maintenance and shall be responsible for:

- Coordination with WB for the C-ESMP approval;
- Implementing regular maintenance for tree trimming if required;
- Arrangement for staff on tree trimming if required;
- Emergency response protocols to ensure staff safety;
- Clearly assigned responsibilities (e.g. SAA, Contractors) and defined reporting timelines to ensure compliance with development consent conditions.

Equipment Supplier/Construction Contractor:

The equipment supplier/construction contractor will be responsible for all installation/construction activities and works on-site. The equipment supplier/construction contractor is obligated under their contractor and the development consent permit to carry out works in accordance with this PEAR incorporating draft ESMP and conditions of the Project consent and any other relevant consent.

The equipment supplier/construction contractor will be responsible for the preparation and implementation of the C-ESMP, including compliance monitoring and reporting of DC conditions. They will also have primary responsibility for the health and safety of all workers and visitors on-site.

The equipment supplier/construction contractor shall employ a full-time ESHS manager and OSH personnel as key personnel throughout the duration of construction.

The Construction Manager for the equipment supplier/construction contractor will have the primary responsibility to implement and monitor the C-ESMP and to ensure:

- Control facilities, mitigation measures, and recommended good practices of the PEAR are implemented
- Conditions of consent including any reporting requirements are complied with
- Achieve the specific objectives for mitigation measures
- Identify problems during construction planning/pre-construction and installation/construction stage and develop site specific plans for corrective actions

PUMA:

PUMA will be responsible for issuing the DC and any conditions for the development by way of review and approval of this PEAR/ESMP. PUMA also have a role of compliance monitoring during construction. PUMA is responsible primarily for the administration and enforcement of the *PUMA Act 2004* and Environmental Assessment Regulations 2007.

b. Bidding documents

The bidding documents for the equipment supplier/construction Contractor shall include specific work requirements that will contractually bind the successful bidder to environmental and social tasks and outcomes.

The bidding documents require the Contractor to nominate an Environmental & Social (E&S) Specialist with the requirement of:

- Minimum of 5 years' experience in environmental management, Occupational Health and Safety (OHS), safety management and management of contractors, engineering and social sciences and other relevant fields; and
- Demonstratable experience in performing E&S tasks in Samoa for an International Financial Institution.

The 'Price and Completion Schedule - Related Services' has included an item for the Provisions to meet Samoa Environmental and Social Management Framework, which will ensure the budget is included within the contractor's overall fee estimate. The specific Environment, Social, Health, and Safety tasks that need to be completed are provided under '6. Environmental and Social Requirements'.

The bidding documents will also outline specific hold points in the contract where works cannot commence without certain approvals being obtained.

This PEAR will be attached to the bidding documents so that the mitigation and management measures become contractual requirements and are adequately incorporated into construction pricing and planning.

c. Detailed Design and Construction Planning

The detailed design for the Project shall include the detailed design drawings to be submitted with the DCA to be approved by PUMA. This process will continue during construction planning and development of the construction methods in the next phase of the project implementation.

d. Construction Environmental and Social Management Plan

The equipment supplier/construction contractor will prepare a C-ESMP before any works commence on site, to comply with this report, specifically to develop procedures and specify control facilities and devices to be put in place to implement mitigation measures to avoid and minimize negative impacts of the project during installation/construction stage. The C-ESMP shall:

- Identify the personnel who have clearly defined roles and responsibilities in the implementation of the C-ESMP.
- Establish the chain of responsibility for managing the environmental and social aspects of the Project.
- Describe the construction methods to be used, number of workers, types and quantity of equipment/vehicles, sources of aggregate, etc.

- Identify the records to be maintained which demonstrate compliance with the C-ESMP.
- Describe a system for audit and inspection, and include associated forms, checklists, etc.
- Describe a system for incident reporting, investigation, corrective action and close-out.
- Describe the consultation program, site-specific GRM and Worker GRM.
- Include the Worker Code of Conduct.
- Establish the mitigation and contingency measures to cover the risks identified in this PEAR and any other risks or potential impacts identified by the Contractor.
- Provide an overarching framework for the specific environmental management plans which will outline the methodology for delivering more detailed site or activity specific management plans, including the following:
    - Occupational Health and Safety Management Plan
    - Traffic Management Plan
    - Waste Management Plan
    - Spill Control and Response Plan

e. Summary of Mitigation and Management Measures

Key to the delivery of the Project, including the management of impacts, is the development, implementation and monitoring of a suite of measures covering detailed design, installation/construction and operation. A summary of the mitigation and management measures proposed in this PEAR and outline the responsibility and timing for implementation is provided in **Table VI-1.**

Table VI-1: Summary of mitigation measures

Ref	Topic	Mitigation Measure	Responsibility	Timing
Detailed Design Stage				
1	Involuntary Land Acquisition[4], Physical Displacement, and/or Economic Displacement	The Design and Supervision Consultant shall prepare as part of detailed design, if such impacts are applicable: - DVOR Counterpoise Height of >3m and supplier design to avoid impacts on solar facility - Site drawings to show area size required for tree trimming. - Site drawings for alteration to the roof plan of the residential building.	Equipment supplier/construction contractor	Prepare engineering design as part of detailed design and submit drawings as part of Project DCA
		Land Acquisition process – SAA to complete customary land acquisition process that commenced in 2018	SAA	Prior to the commencement of installation/construction stage
Installation/Construction Stage				
2	Traffic and access	The equipment supplier/construction contractor shall prepare and implement a Traffic Management Plan that will: - Describe the approach to managing public safety along the main West Coast Road and around the construction laydown area once selected; - Provide diagrams that show the traffic route to access the proposed siting locations and the construction laydown area.	Equipment supplier/construction contractor	Prepare TMP prior to construction and implement mitigations throughout construction

[4] *The process of land acquisition is related to a separated project and it is out of the scope of the NAVAIDS Supply and Installation project, and it will be completed before the commencement of the NAVAIDS project.*

		- Describe mitigations that will be put in place to minimise disruptions and public safety risks (e.g., marking existing overhead lines in close vicinity to the access point, timing of deliveries, etc.) - Explain how/when temporary traffic signs and/or traffic controllers will be used to direct traffic when entering/exiting the main West Coast Road.		
3.1	Erosion and sedimentation	Limit of works shall be defined to minimize area of disturbance. This includes any areas that are designated for use as laydown.	Equipment supplier/construction contractor	At all times during construction
3.2	Erosion and sedimentation	Cut-off drains construction around the defined siting area shall not contribute to erosion.	Equipment supplier/construction contractor	At all times during construction
3.3	Erosion and sedimentation	The defined siting area shall be stabilized as soon as possible after the final earthworks have been completed.	Equipment supplier/construction contractor	At all times during construction
3.4	Erosion and sedimentation	Where earthworks activities stop for more than 14 days, interim stabilization measures shall be promptly implemented.	Equipment supplier/construction contractor	At all times during construction
3.5	Erosion and sedimentation	All runoff from the disturbed area shall be collected and diverted to facilities for removal of sediment.	Equipment supplier/construction contractor	At all times during construction
3.6	Erosion and sedimentation	Stockpiles shall not be located within drainages lines and silt fencing shall be placed downslope of the stockpile and/or stockpile will be covered.	Equipment supplier/construction contractor	At all times during construction

3.7	Erosion and sedimentation	Cleared vegetation and spoil shall be disposed of in a manner and location that does not contribute to sedimentation.	Equipment supplier/construction contractor	At all times during construction
3.8	Erosion and sedimentation	Area used for construction laydown area will be reinstated when they are no longer required. This includes revegetating disturbed areas promptly with native vegetation to stabilize soil and restore ecological balance.	Equipment supplier/construction contractor	At all times during construction
3.9	Erosion and sedimentation	Schedule major soil disturbance or earthworks to dry periods to reduce erosion risks.	Equipment supplier/construction contractor	At all times during construction
3.10	Erosion and sedimentation	Interceptor channels: - may be used within the construction site to reduce the speed of flow and prevent accelerated erosion - shall convey collected waters to sedimentation basins or to vegetated area within the construction site, but not directly to areas outside of the construction site - shall be designed so that outlets to vegetated areas reduce the discharge speed to a level that will not cause accelerated erosion	Equipment supplier/construction contractor	At all times during construction
3.11	Erosion and sedimentation	Regular inspection of erosion control measures and drainage systems to maintain effectiveness.	Equipment supplier/construction contractor	At all times during construction
3.12	Erosion and sedimentation	Implement the Chance Finds Procedures.	Equipment supplier/construction contractor	At all times during construction

3.13	Erosion and sedimentation	Secured transport: - haul trucks used for the removal of stripped topsoil and cleared grass and coconut palms; and import of fill material shall be sufficiently tight and secure to prevent material falling onto the road.	Equipment supplier/construction contractor	At all times during construction
4.1	Air Quality	Keep all machinery in good condition.	Equipment supplier/construction contractor	At all times during construction
4.2	Air Quality	Shut down equipment when not directly in use.	Equipment supplier/construction contractor	At all times during construction
4.3	Air Quality	Implement mitigation measures for minimising erosion and sedimentation to limit dust from wind erosion (see section erosion and sedimentation).	Equipment supplier/construction contractor	At all times during construction
4.4	Air Quality	Implement the GRM to monitor and resolve issues/concerns raised.	Equipment supplier/construction contractor	At all times during construction
5.1	Noise and Vibration	Implement standard construction noise and vibration mitigations at the proposed siting of new navigational aid equipment including the construction laydown area, such as: - Use equipment and construction methods that minimize noise, - Install practical acoustical attenuation on construction equipment, such as mufflers.	Equipment supplier/construction contractor	At all times during construction

		- Use silenced air compressors and power generators. - Keep all machinery in good condition. - Install exhaust silencing equipment on crane, dump trucks, excavator, etc. - Post signs in areas where the sound pressure level exceeds 75 dBA. - Shut down equipment when not directly in use. - Provide workforce short breaks for high noise activities. - Install vibration cut-off trenches (empty or filled with attenuating material) around the site to attenuate/modify vibration.		
5.2	Noise and Vibration	Implement the GRM to monitor and resolve issues/concerns raised.	Equipment supplier/construction contractor	At all times during construction
6.1	Waste Generation	Prepare and implement a waste management plan as part of the C-ESMP that includes: - A register of the waste types to be generated during installation/construction phase, estimated volumes, any particular handling/storage requirements and planned disposal methods. - Requirement to store all waste (prior to removal from site) in suitable areas to prevent hazards such as fires, vermin or standing water/vector breeding; and to prevent waste from blowing away.	Equipment supplier/construction contractor	Prepare C-ESMP prior to construction and implement mitigations throughout construction

		- develop forms for tracking waste movements and disposal - Requirement for loads to be secured during transport to prevent littering.		
6.2	Waste Generation	Investigate options for reuse and recycling, including for hazardous waste	Equipment supplier/construction contractor	At all times during construction
6.3	Waste Generation	Dispose of solid waste (that cannot be reused or recycled) at the Tafaigata Landfill.	Equipment supplier/construction contractor	At all times during construction
6.4	Waste Generation	Dispose of spoil in a manner that will not contribute to sedimentation. If contaminated, dispose in a manner to limit hazards to workers and the environment,	Equipment supplier/construction contractor	At all times during construction
6.5	Waste Generation	Use of portable toilets for workers to avoid the need to construct septic tanks	Equipment supplier/construction contractor	At all times during construction
7.1	Labour and Working Conditions & Occupational Health and Safety	Maintain records of recruitment and employment process of workers.	Equipment supplier/construction contractor	At all times during construction
7.2	Labour and Working Conditions & Occupational Health and Safety	Communicate clearly job description and employment conditions to workers.	Equipment supplier/construction contractor	At all times during construction

7.3	Labour and Working Conditions & Occupational Health and Safety	Provide workers with evidence of all payments made, including benefits and any valid deductions.	Equipment supplier/construction contractor	At all times during construction
7.4	Labour and Working Conditions & Occupational Health and Safety	Maintain records regarding labour conditions and workers engaged under the Project, including contracts, registry of induction of workers including Code of Conduct, hours worked, remuneration and deductions (including overtime).	Equipment supplier/construction contractor	At all times during construction
7.5	Labour and Working Conditions & Occupational Health and Safety	Assign a designated safety officer.	Equipment supplier/construction contractor	At all times during construction
7.6	Labour and Working Conditions & Occupational Health and Safety	Ensure no child or forced labour is involved in the Project.	Equipment supplier/construction contractor	At all times during construction
7.7	Labour and Working Conditions & Occupational Health and Safety	Establish and implement a Worker GRM.	Equipment supplier/construction contractor	At all times during construction
7.8	Labour and Working Conditions & Occupational Health and Safety	Provide workers with: - toilet and washing facilities; - adequate supplies of potable drinking water; - clean rest/lunch break areas for workers to have short breaks	Equipment supplier/construction contractor	At all times during construction

7.9	Labour and Working Conditions & Occupational Health and Safety	Maintain records of training/induction dates, number of trainees, and topics.	Equipment supplier/construction contractor	At all times during construction
7.10	Labour and Working Conditions & Occupational Health and Safety	Ensure that two qualified first-aid personnel are available at the Project site and the construction laydown area.	Equipment supplier/construction contractor	At all times during construction
7.11	Labour and Working Conditions & Occupational Health and Safety	Provide spill kits, fire extinguishers and first aid kits at prominent locations around the Project site and the construction laydown area.	Equipment supplier/construction contractor	At all times during construction
7.12	Labour and Working Conditions & Occupational Health and Safety	Prepare and implement an Occupational Health and Safety (OHS) Management Plan that includes: - roles and responsibilities - risk assessment covering construction activities - incident reporting (including to MOH, PUMA, etc), investigation and corrective action - emergency response procedures, including identification of the emergency scenarios, specific emergency response procedures, training of emergency response personnel, emergency contacts, procedures for interaction with government authorities (FESA, TTM Hospital, PUMA) - training and competency requirements for certain roles	Equipment supplier/construction contractor	Prepare OHS Plan prior to construction and implement mitigations throughout construction

		- specific procedures and mitigations for heavy lifts using cranes to minimise risk to workers, infrastructure and the public, such as avoiding lifts over existing infrastructure, avoiding using or having cranes extended during heavy winds, etc. - Job Hazard Analysis procedure, or similar - daily pre-start meetings and toolbox talks - site inspection requirements and checklists - maps of muster points - schedule for emergency drills		

f. Licensing and Approvals

The relevant licenses, permits and/or approvals needed to construct/operate the Project are listed in **Table VI-2**.

Table VI-2: Licenses and approvals required

Requirement	Timing
World Bank no-objection to the Project PEAR incorporating ESMP (this document)	Prior to issuing Bidding Document
PUMA DC for the Construction Laydown Area	Prior to Construction mobilization
PUMA DC for the Project	Prior to Construction mobilization
World Bank no-objection to the Project PEAR incorporating C-ESMP	Prior to Construction mobilization
MWTI Building Permit for building structure	Prior to Construction mobilization
Quarry consent for sourcing materials	Equipment supplier/construction contractor to confirm supplier of quarry material for the project has valid DC

VII. Conclusion and Recommendations

The Samoa Airport Authority (SAA) propose to install new navigational aid equipment to replace existing navigation systems that are nearing the end of their economic life, and they may become difficult to maintain in the future. The Project will support the Government of Samoa through climate resilience and safety investments in the aviation sector.

Samoa's geographic distance from the main markets means that efficient air services are integral to the Government of Samoa (GoS)'s drive to increase exports, especially for low volume and high-value items that depend on fast delivery. Aviation also plays a vital economic and social role in Samoa's development. Most visitors, tourists and the crucial 'visiting friends and relatives' segment rely on air transport predominantly.

Samoa's remoteness, limited size, coastal settlement patterns, and susceptibility to a host of natural disasters also make reliable aviation connectivity crucial for effective disaster risk management, particularly for emergency management such as in the delivery of humanitarian aid and emergency goods and supplies.

This Preliminary Environmental Assessment Report (PEAR) incorporating a draft Environmental and Social Management Plan (ESMP) has been prepared to identify and assess the potential environmental and social impacts associated with detailed design, installation/construction and operation stages of the Project. The PEAR also identifies appropriate mitigation and management measures to avoid and minimise the project's adverse impacts while maximizing the Project benefits.

Preparation of the PEAR incorporating a draft ESMP has been undertaken in accordance with the Planning and Urban Management Act 2004 and PUMA Environmental Impacts Assessment Regulations 2007. This PEAR incorporating a draft ESMP will be submitted to PUMA as part of a DCA. PUMA is the determining authority for the Project.

This PEAR incorporating a draft ESMP has been prepared to also meet the requirements of the SARIP Environmental and Social Management Framework (ESMF) which provided principles, guidelines and procedures for assessing the potential environmental and social impacts within the PEAR incorporating a draft ESMP. The PEAR incorporating a draft ESMP will be submitted to the WB for their No Objection to fulfil both Samoan national and the WB ESF requirements.

A number of potential environmental and social impacts from the Project have been avoided or reduced during the Project design development. However, the Project will still result in potential impacts/issues that include:

- Traffic and access;
- Erosion and sedimentation;
- Air quality (fumes and dust);
- Noise and vibration;
- Waste generation;
- Labour and working condition risks, including occupational health and safety.

Mitigation measures as detailed in this PEAR incorporating a draft ESMP would minimise these expected impacts. The Project will improve the climate resilience and safety of Samoa's aviation, and in the event of an Eligible Crisis or Emergency, respond promptly and effectively to it. The considerations and analysis presented in this PEAR-ESMP shall be further analysed/detailed by the Contractor in the C-ESMP.

Annex A – Acronyms

Acronym	Definition
CEAR	Comprehensive Environmental Assessment Report
C-ESMP	Construction Environment and Social Management Plan
CIM	Community Integrated Management
COEP	Code of Environmental Practice
CSO	Civil Society Organization
CVOR	Conventional Very High Frequency Omnidirectional Radio Range
dBA	Decibels (A)
DC	Development Consent
DCA	Development Consent Application
DME	Distance Measuring Equipment
DMS	Detailed Measurement Survey
DVOR	Doppler Very High Frequency Omnidirectional Radio Range
EHS	Environmental, Health, and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPC	Electric Power Corporation
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESHS	Environmental, Social, Health and Safety
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Safeguards
ESStd	Environmental and Social Standards
EUROCAE	European Organisation for Civil Aviation Equipment
FAA	Federal Aviation Administration
FESA	Samoa Fire and Emergency Services Authority
GBV	Gender Based Violence
GIIP	Good International Industry Practice
GNSS	Global Navigation Satellite System
GoS	Government of Samoa
GP	Glide Path
GRM	Grievance Redress Mechanism
IA	Implementing Agency
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System

LARF	Land Acquisition and Resettlement Framework
LMP	Labour Management Procedure
LOC	Localizer
LTA	Land Transport Authority
MNRE	Ministry of Natural Resources and Environment
MOH	Ministry of Health
MWCSD	Ministry of Women, Community & Social Development
MWTI	Ministry of Works and Transport Infrastructure
NDB	Non-Directional Beacon
NGO	Non-Governmental Organization
OHS	Occupational Health and Safety
OLS	Obstacle Limitation Surface
OSH	Occupational Safety and Health
PANS-OPS	Procedures for Air Navigation Services- Aircraft Operations
PEAR	Preliminary Environmental Assessment Report
PIU	Project Implementation Unit
PUMA	Planning and Urban Management Agency
PVC	Polyvinyl Chloride
RP	Resettlement Plan
SAA	Samoa Airport Authority
SAIP	Samoa Aviation Investment Project
SARIP	Samoa Aviation and Roads Investment Project
SCRTP	Samoa Climate Resilient Transport Project
SEA	Sexual Exploitation Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SPREP	Secretariat of the Pacific Regional Environment Programme
TACAN	Tactical Air Navigation
TISCD	Transport and Infrastructure Sector Coordination Division
TMP	Traffic Management Plan
TODA	Take-Off Distance Available
TORA	Take-Off Run Available
TTM Hospital	Tupua Tamasese Meaole Hospital
VAC	Violence Against Children
VHF	Very High Frequency
WB	World Bank

Annex B – C-ESMP Content Outline

This section presents the outline of the C-ESMP, extracted from the SARIP ESMF document.

Declaration and Document Version Control

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Annexes

Annex A. POLICIES AND COMMITMENT STATEMENT

Annex B. ENVIRONMENTAL MANAGEMENT SUBPLANS

Annex C. WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Annex D. ASPECTS AND IMPACTS REGISTER

Annex E. ENVIRONMENTAL INCIDENT REPORTING FORM

Annex F. COMPLAINTS REPORTING FORM

Annex C – Chance Finds Procedure

This section presents the Chance Finds Procedure, extracted from the SARIP ESMF document.

Cultural heritage includes tangible or intangible heritage with archaeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance. Tangible heritage items they may be encountered during implementation include moveable or immovable objects, sites, structures, groups of structures, natural feature and landscapes.

The list of negative activity attributes which would make an activity ineligible for support includes any activity that would adversely impact cultural property. In the event that during reconstruction or construction sites of cultural value are found, the following procedures for identification, protection from theft, and treatment of discovered artifacts should be followed and included in standard bidding documents.

Chance find procedures will be used as follows:

(a) Stop the earthworks, construction or land clearing activities in the area of the chance find;

(b) Delineate the discovered site or area;

(c) Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and MNRE take over;

(d) Notify the supervisory Engineer who in turn will notify the responsible local authorities and the MNRE;

(e) Responsible local authorities and the relevant Ministry would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures;

(f) Decisions on how to handle the finding shall be taken by the responsible authorities and the relevant Ministry;

(g) Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the relevant Ministry; and

(h) Construction work could resume only after permission is given from the responsible local authorities and the relevant Ministry concerning safeguard of the heritage.

These procedures must be referred to as standard provisions in construction contracts. During project supervision, the Site Engineer shall monitor the above regulations relating to the treatment of any chance find encountered are observed.

Relevant findings will be recorded in World Bank Supervision Reports and Implementation Completion Reports will assess the overall effectiveness of the project's cultural property mitigation, management, and activities.

Annex D – SEA & SH Action Plan

This section presents the SEA & SH Action Plan, extracted from the SARIP ESMF document.

1. BACKGROUND

SEA and SH Action Plan outlines the strategies that SARIP will adopt to mitigate and respond to risks of SEA / SH related to the project in line with the World Bank's Good Practice Note Addressing SEA and SH in Investment Project Financing Involving Major Civil Works[5].

The project was assessed as 'low' risk using the World Bank's SEA / SH Risk Screening Tool.

SARIP consists of small-scale infrastructure works located in defined project sites, in peri-urban settings on the main island of Samoa:

- Faleolo International Airport (Upolu Island).
- East Coast Road, part of the main road link from Apia to the eastern half of Upolu Island.
- Alafa'alava Road, an existing inland road linking Apia with the north-western corner of Upolu Island and Faleolo Airport which provides an alternative route to the West Coast Road.

Three relatively small construction workforces are expected to be contracted.

SARIP will build on the SEA / SH Action Plan for the Samoa Climate Resilient Transport Project (SCRTP) being implemented by the Ministry of Works, Transport and Infrastructure (MWTI), Land Transport Authority (LTA), Samoan Air Authority (SAA). IAs will enlist the support of the Ministry of Women, Community and Social Development (MWCSD) to assist in the implementation of SEA/SH Action Plan.

2. RISK MITIGATION (PREVENTION)

2.1 Codes of Conduct

The Code of Conduct shall be signed by all employees of contractors (including sub-contractors), supervising Engineers and other consultants to indicate that they have:

- Received a copy of the Code of Conduct;
- Had the Code of Conduct explained to them;
- Acknowledged that adherence to the Code of Conduct is a condition of employment; and
- Understood that violations of the Code of Conduct can result in serious consequences, up to and including dismissal, or referral to legal authorities.

A copy of the Code shall be displayed in locations that are easily accessible to the communities surrounding the project.

The Codes of Conduct should be available in English, Samoan and any language of foreign project staff.

2.2 Code of Conduct induction

All employees of contractors (including sub-contractors), supervising Engineers and other consultants will attend an induction session on:

- The SEA / SH components of the Code of Conduct, and what constitutes a violation of the Code of Conduct to set clear expectations of behavior.
- What may happen if they use SEA or SH in violation of the Code of Conduct.
- How to report SEA or SH / a violation of the Code of Conduct.
- What local specialist gender-based violence (GBV) service providers are available to survivors and how to contact them.

[5] World Bank, 2020. Good Practice Note: Addressing Sexual Exploitation and Abuse and Sexual Harassment in Investment Project Financing involving Major Civil Works. World Bank: Washington, United States of America.

2.3 Community awareness-raising

Awareness-raising activities for the whole community, ensuring the participation of women, women and men with disabilities, people who identify with diverse sexual orientations and gender identities and expressions (SOGIE) and other groups in the community who are more likely to experience SEA or SH, will be conducted primarily by the MWCSD.

At a minimum, awareness-raising with increase beneficiaries and communities understandings of:

- The SEA and SH components of the Code of Conduct, and what constitutes a violation of the Code of Conduct.
- How to report SEA or SH / a violation of the Code of Conduct.
- What local specialist GBV service providers are available to survivors and how to contact them.
- What to expect when making a complaint of SEA or SH to the project.
- The limitations of the grievance redress mechanism in relation to complaints GBV.

3. RISK RESPONSE

The Project Grievance Mechanism will include details of how reports of GBV, including SEA / SH, will be received, resolved, and documented. The following elements will be integrated into the GRM to respond to cases of GBV, including SEA / SH:

Principles	The process to receive and respond to complaints of GBV, including SEA / SH, will apply a survivor-centered approach to ensure that the rights of the survivor are upheld. This includes ensuring the survivor's safety, choice, consent and confidentiality and to ensure that the survivor is informed, respected and referred to specialist GBV services. The process will also be accessible, transparent, timely and fair.
Receiving complaints of GBV, including SEA / SH	The GRM must be accessible to survivors of GBV, including SEA / SH. This means: • Having multiple reporting methods and contacts including at least one woman who can receive complaints for each Project Site. • Outlining how third-party reports will be responded to. • Having a referral pathway for each Project Site to refer any survivors to the closest specialist GBV service providers. • Increasing the awareness of communities that will interact with project workers on how to access the GRM.

Resolving complaints of GBV, including SEA / SH	The GRM should include a clear process to resolve the complaints of GBV, including SEA / SH, which is survivor-centered. This includes processes to:
	• Assess if the allegation is likely linked to the SARIP.
	• Verify the allegation to:
	  ○ Determine the likelihood that the incident occurred.
	  ○ Recommend disciplinary measures toward the alleged perpetrator.
	• Ensure the survivor can speak to one person through the process, in most cases the contact person should be a woman.
	The GRM will also clearly articulate that reports of GBV will not be resolved using customary practices of conflict resolutions, such of medication and compensation.

Recording complaints of GBV, including SEA / SH	The GRM will outline how information of reports of GBV, and actions taken to resolve the complaint, will be collected and stored confidentiality and ensure the information is not shared outside necessary reporting requirements The GRM will

	also include details of required notification to the World Bank Task Team with only the following data to be shared: • The nature of the allegation. • If the alleged perpetrator is, to the survivor's best knowledge, associated with the Project (yes/no). • The survivor's age and/or sex (if available). • If the survivor was referred to services.
Training	Anyone receiving or handling complaints of GBV must receive training so that they do not revictimize and retraumatize survivors or unintentionally cause them harm. Those who have been identified to receive complaints of GBV will complete training to: • Understand the gendered nature of SEA and SH, the GBV requirements in the Code of Conduct and the GBV pathway in the GRM. • Have the skills to receive complaints of GBV. Those tasked with resolving incidents of SEA / SH will also complete training to develop their skills to receive, resolve and record complaints of GBV.

4. IMPLEMENTATION AND MONITORING

Action	Responsibility	Oversight	Monitoring (target; method /frequency)
Risk mitigation (prevention)			
SEA / SH risk prevention and response requirements included in implementing partner agreements/contracts.	SAA and LTA.	MWTI	All agreements/contracts; sited (once-off).
Project Workers sign a Code of Conduct that explicitly prohibits SEA / SH.	Contractors.	SAA and LTA.	All workers; human resources (HR) records /progress reporting (semi-annually).
Project Workers complete an induction on the SEA / SH components of the Code of Conduct.	Contractors facilitated by MWCSD.	SAA and LTA.	All workers; HR records/progress reporting (semi-annually).
Community awareness sessions on the Code of Conduct and how to make a report of SEA / SH to the project.	Contractors facilitated by MWCSD.	SAA and LTA.	All communities; progress reporting (semi-annually).
Risk response			
The project GRM includes a pathway for receiving complaints of SEA / SH.	MWTI, SAA and LTA.	World Bank.	All Project Sites; progress reporting (semi-annually).
IAs and contractors assign/train staff to handle SEA / SH related complaints.	Contractors, SAA and LTA.	World Bank.	All IP, IA and Project Sites; progress reporting (semi annually).

Annex E – Land Acquisition at Fusive'a

Background

By way of background, the lands east of the Airport vicinity (Satapuala including Fusive'a), were taken by the Government of Samoa in 1983. The purpose was dur to the extension of the airstrip of the Faleolo International Airport. At the time, Government has allowed families to remain on the land on the condition that they will move off the land at a later time & until the government requires it.

In 2018, the Authority had plans to construct a Three Hundred (300) Meters Runway Extension at the Eastern side of the Faleolo Airstrip which require the use of the Government lands at Satapuala. The details of that particular project included the following:

A. Three Hundred (300) Meters Runway Extension

The Authority has placed in its strategic plans and budget a proposed three hundred (300) meter runway extension. This is to enable the safe operation of long-haul international flights. The current length of three thousand (3,000) meters is inadequate not only for these types of operation but is restricting full operating payload capacity of certain types of aircraft being used by Air New Zealand which includes large amounts of freight out of Samoa. With the proposed extension, all facilities (lighting and the localizer component of the Instrument Landing System) in the current location will have to be relocated further east of their current positions.

B. Runway End Safety Area ('RESA')

Prior to the runway extension, this area has always been identified as a high-risk area for take-off overruns, crashes associated with engine failures. Global statistics indicate approximately 55% aircraft crashes is attributed to aircraft in the landing and take-off phases of flight. Having a residential area immediately adjacent to an airport especially in this area is not safe because of this. In addition, health risks are elevated resulting from aircraft exhaust fumes and the noise created by its engines – recorded at approximately 150 decibels on take-off, levels that cause ear drum ruptures.

C. Obstacle Limitation Surfaces ('OLS')

To ensure safe aircraft operations, airports are required to maintain the OLS on either approach ends to the runway to a distance of 16 kilometers. The first 5 kilometers is critical and is recommended to be owned by an airport operator for this to be effectively managed. This is to protect against any unwanted construction projects or vegetation growth penetrating the OLS.

History & Timeline since 2018

While most of the families had relocated and vacated these lands, a family remains on the eastern corner at Fusive'a, with whom the GoS and SAA, are still in negotiations with. Since then, the Government of Samoa including the Ministries responsible for these government lands, SAA and the Office of the Attorney General (OAG), have been in negotiations with the remaining family on Fusive'a land, to finalize appropriate compensation for the family to relocate. The negotiations were made with different members of the family, starting with Mr. Leao Muagututi'a Akeripa, and then onto Mr. Toesulusulu Cedric Schuster, all the family being represented by Clarke Ey Koria Lawyers and the land is currently identified as "Toesulusulu's land" (for ease of reference).

The following table shows the correspondences since 2018:

No.	Date	From:	To:	Subject
1.	07 Mar 2018	Clarke Ey Koria Lawyers	OAG	Acting for Mr. Akeripa's family, and take instructions from their family on this matter.
2.	15 Mar 2018	OAG	STEC, MOF, MOPP, MNRE, MWCSD, SAA	Will serving eviction notices to Satapuala families including Mr Akeripa's family
3.	19 Mar 2018	STEC	OAG	Sub-Committee supports the instructions on the commencement of eviction proceedings by OAG.
4.	23 Mar 2018	Clarke EY Koria Lawyers	Govt Sub Committee, OAG	Mr Akeripa's family offer of SAT$318,201.00 for relocation costs.
5.	27 Mar 2018	STEC	MOF, MOPP, OAG, MNRE, MWCSD, SAA	Exploring options to expedite the Government Project Plans at Satapuala
6.	28 Mar 2018	Hon. PM Tuilaepa	Chairman - STEC (Komiti a le Malo ma Satapuala)	Commence with eviction prroceedings.
7.	12 Jul 2018	OAG	Hon. PM Tuilaepa	Providing update on Satapuala families including Mr. Akeripa's matter. Advice that selected committee agreed for AOG to file eviction notice.
8.	26 Jul 2019	Clarke EY Koria Lawyers	OAG	Providing Mr Akeripa's family final offer of SAT283,201.00 plus the cost of professional fees.
9.	26 Oct 2020	OAG	SAA, STEC, MNRE, MOF, MOPP, MWCSD	Advice that OAG will proceed to file eviction proceedings against Mr Akeripa's family at Satapuala given that the settlement with their family have not reached
10.	09 Nov 2021	SAA	Office of the Attorney General (OAG)	Follow up on the eviction proceedings against Mr Akeripa and family
11.	01 Aug 2023	OAG	SAA, MNRE, STEC	Land at Fusive'a, Satapuala (update on discussions with MNRE, STEC and SAA)
12.	08 Nov 2023	OAG	SAA, MNRE, STEC	Land at Fusive'a, Satapuala (update on discussions with MNRE, STEC and SAA)

In September 2025, the OAG confirmed that the family has agreed to the proposed relocation costs as compensation, with portions being paid by the GoS and another portion paid by SAA.

As at 08 December 2025, the remaining process that needs to be settled are:

- Cabinet Approval for the GoS amount to be paid for compensation (est. 31 Dec 2025);
- Preparation of the Deed of Settlement to reflect relevant terms & conditions regarding relocation (est. 15 February 2026); and
- Final payment (est. 15 March 2026); and
- Transfer of ownership to GoS, and lease to SAA for airport use (est. 31 March 2026).