The Integrated Flood Management to Enhance Climate Resilience of the Vaisigano River Catchment in Samoa (GCF-VCP)

- for -

Strengthened adaptive capacity and reduced exposure to climate risks of vulnerable livelihoods and infrastructure in the Vaisigano River Catchment.
Updated Environmental and Social Management Framework and Management Plan 2021

Green Climate Fund Government of Samoa Vaisigano Catchment Project (GCF-VCP)

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ACRONYMS

AE Accredited Entity
COEP Code of Environmental Practice
CSEPAP Community and Stakeholder Engagement Procedure and Action Plan
EA Executing Agency
EIA Environmental Impact Assessment
ESMF-MP Environmental and Social Management Framework and Management Plan
GCF Green Climate Fund
GCF-PM Project Manager
GCF-PMU Green Climate Fund Project Management Unit
GCF-VCP Green Climate Fund Vaisigano Catchment Project
GoS Government of Samoa
GRM Grievance Redress Mechanism
IA Implementing Agency
IR Inception Report
LARAP Land Acquisition and Resettlement Action Plan
LTA Land Transport Authority
MEAs Multilateral Environmental Agreements
MoF Ministry of Finance
MoH Ministry of Health
MNRE Ministry of Natural Resources and Environment
MWCSD Ministry of Women, Community and Social Development
MWTI Ministry of Works, Transport and Infrastructure
PUMA Planning and Urban Management Agency
RIA Responsible Implementing Agency
SES Social and Environmental Standards
SESP Social and Environmental Screening Procedure
SGS Safeguards and Gender Specialist
TAG Technical Advisory Group
TA Technical Advisor
UNDP United Nations Development Program
VRCA Vaisigano River Catchment Area
1. Introduction

1. This is the updated Environmental and Social Management Framework and Management Plan (ESMF-MP) of the Green Climate Fund (GCF) and Government of Samoa (GoS) project “The Integrated Flood Management to Enhance Climate Resilience of the Vaisiagno River Catchment in Samoa” (GCF-VCP).

2. The GCF-VCP was approved by the GCF in 2017 together with the project’s initial ESMF-MP. The GCF-VCP provides for a range of activities designed to strengthen the adaptive capacity and reduce exposure of vulnerable livelihoods and infrastructure in the Vaisiagno River Catchment. The Project has a value of USD $67.5m and an implementation timeframe of 6 years from 2017 to 2023.

3. The key institutions involved in the project include the Ministry of Finance (MoF) as the Executing Agency (EA), the United Nations Development Programme (UNDP) as the GCF Accredited Entity (AE) and the implementing agencies of the Ministry of Natural Resources and Environment (MNRE), Ministry of Works, Transport and Infrastructure (MWTI), the Ministry of Health (MoH) and the Land Transport Authority (LTA).

4. As this project is supported by UNDP in its role as the GCF AE, the project has been re-screened using UNDP’s Social and Environmental Standards Procedure (SESP) and has been deemed to be of moderate risk. The SESP is attached as Annex 1.

1.1 Review and Update of the ESMF-MP

5. The initial ESMF-MP was reviewed against key environmental and social policies of the UNDP and the GoS including the operational documents of the project. With the GCF-VCP mid-way through its implementation phase, the MoF as the EA, sees the need to review and update the ESMF-MP to ensure that the document is still relevant in terms of information and usability, and taking into account any changes to relevant mandates and policies, community and stakeholder needs and the scope and design of project activities.

6. UNDP’s Social and Environmental Standards (SES 2014) acknowledges that potential changes to activity scope of a project may occur during implementation and that it may potentially affect the projects risk profile. To verify any new or unanticipated risks therefore, the project needs to be re-screened for environmental and social risks. In addition, the initial ESMF-MP of the GCF-VCP emphasizes the need to review the document every two months to reflect new knowledge gained during project implementation including any changes to community standards and values.

7. In light of the above, the initial ESMF-MP was reviewed, informed and updated using (a) UNDP’s Social and Environmental Screening Procedure (SESP), (b) GCF-VCP project documents including specific environmental impact assessment reports, (c) technical studies and designs undertaken for project activities, (d) information collated from public consultations undertaken by the project and (e) information from stakeholder meetings with key responsible implementing agencies. As such, while the information in the updated ESMF-MP has been updated to reflect these (a-e), the initial ESMF-MP contains background information about the planning and design phase of the project.

8. It must be highlighted however that the initial environmental and social screening process that was undertaken in 2016 using UNDP’s SESP, found the project to be of ‘Moderate Risk’. For this updated ESMF-MP, the on-going and planned activities of the project were also re-screened using the SESP
and where the risk categorization is still considered ‘Moderate’. This is clarified further in Section 3 of this document, including the updated SESP (Annex 1).

1.2 PURPOSE AND OBJECTIVES OF THE ESMF-MP

9. The ESMF-MP is a mandatory overarching framework to guide and direct the implementation, monitoring and reporting of the social and environmental safeguards requirements of the GCF-VCP. Further, it is a management tool to be used by project stakeholders to keep track of the project’s potential social and environmental impacts and development outcomes to ensure it reaches a set of environmental and social objectives.

10. It describes principles, guidelines and procedures for all parties to implement, including applicable social and environmental legal mandates and policies for compliance, and contains guidance for public engagement, information disclosure, grievance redress, and institutional responsibilities for monitoring and reporting. It also provides measures to avoid, reduce, mitigate and/or offset adverse risks and impacts to society and the environment. In addition, it is guided by UNDP’s SES which is committed to mainstreaming social and environmental sustainability into the project.

11. In relation to the project, the environmental and social objectives of the updated ESMF-MP are described below. These objectives include those that were identified in the initial ESMF-MP (a-j) and two new additional ones (k and l).

a. ensure the river bank, drainage and other construction and ecosystem works do not cause environmental and social impacts;

b. improve upstream sediment retention through revegetation of the catchment thus increasing water quality both downstream and entering the coastal lagoon;

c. reduce the impact of flooding and thus the loss of assets and social disruption from overtopping of the Vaisigano River;

d. enhance the existing early warning system that ensures adequate measures are undertaken prior to any rainfall and flood event;

e. encourage good management practices through planning, commitment and continuous improvement of environmental practices;

f. minimise or prevent the pollution of land, air and water pollution;

g. protect native flora and fauna from the impacts of flooding;

h. comply with all applicable laws, regulations and standards for the protection of people and the environment; and adopt the best practicable means available to prevent or minimise adverse environmental and social impacts;

i. describe all monitoring procedures required to identify impacts on people and the environment;

j. provide an overview of the obligations of project stakeholders including contractors with regards to environmental and social obligations;

k. provide procedures for stakeholder engagement to ensure meaningful consultations and;

l. provide a grievance redress mechanism to resolve any issues relating to project activities.
2. PROJECT DESCRIPTION

2.1 OVERVIEW OF THE PROJECT

12. The GCF-VCP provides an integrated management solution to managing the flood risks and impacts of the Vaisigano River on the communities and environment of the Vaisigano River Catchment Area (VRCA). This integrated approach consists of various soft and hard interventions with supporting mechanisms and capacities strengthened to enhance the climate resilience of the VRCA.

13. The impact potential of the GCF-VCP relates to flood prevention measures and watershed management practices that would provide multiple benefits to at least 26,000 people living within 31 village communities of the Apia Urban Area. The interventions planned under the project need to achieve (a) a reduction in vulnerability of communities and their livelihoods to flood-related risks, (b) flood-resilient infrastructure in the VRCA supported by upstream ecosystem and community based adaptation measures, and (c) upgrade of drainage systems in downstream areas for regulation of water flows from the river catchment system (APR 2019).

2.2 SUMMARY OF ACTIVITIES

14. The GCF-VCP has 3 inter-linked outputs, 10 main activities and several sub-activities. These have been summarized below.

a. **Output 1:** This Output focuses on strengthening the capacities and mechanisms for an integrated approach to reduce flood-related risks. The activities include: conducting feasibility studies relating to flood mitigation options; a flood-buffering reservoir with co-benefits in hydropower and water storage; flood resilience of the Central Cross Island Road which is a main economic arterial road and evacuation route; and an Apia integrated sewage system for the whole Apia Urban Area (AUA). It will also enhance systems for improved flooding forecasting; health surveillance, early warning messaging; and the siren network in relation to floods. Trainings will be conducted for health and building practitioners, village councils and communities as well as awareness raising on climate resilient building practices and designs for vulnerable and flood-prone communities with model flood resilient buildings established and national policies developed.

b. **Output 2.** This output focuses on key infrastructure in the Vaisigano River Catchment being flood-proofed to increase resilience to the negative effects of excessive water. The activities include: the review of designs for the channelization of river segments; establishment of flood protection measures and flood walls; capacity building; livelihood opportunities for environmental services; ecosystem responses; participatory mapping, development of climate smart practices; enterprise development; afforestation and conservation; demarcation zones; and development of a community based adaptation strategy; replacement of existing bridge and floodwall extensions and floodwall.

c. **Output 3:** This output focuses on drainage in downstream areas upgraded for increased regulation of water flows. The activities include: development of a storm water master plan and the upgrade of drainage systems and outfalls to accommodate flooding events.
3. POTENTIAL SOCIAL AND ENVIRONMENTAL IMPACTS

3.1 ASSUMPTIONS UNDERPINNING THE UPDATED ESMF-MP

15. The following assumptions have been made in the preparation of this updated ESMF-MP. These are in anticipation of certain circumstances that may have an impact on the progress and delivery timeframe of the project. As such, appropriate remedial measures or adaptive management measures should be developed in due time in the likelihood that they do not hold. Where the assumptions may not hold and have a significant impact to project progress, this ESMF-MP may need to be updated.

16. The assumptions are listed below.
   a. Any potential land acquisition, displacement and/or resettlement actions will conform to national laws and requirements of UNDP’s SES;
   b. The GoS will be able to manage and contain Covid 19 to ensure that community transmission does not occur and thereby affect project implementation;
   c. Sufficient funds secured to implement all project activities to achieve project objectives.
   d. All potential environmental and social impacts will be mitigated and monitored through the use of mitigation measures identified in the ESMF-MP and other supplementary safeguards documents prepared for the project.

3.2 SCREENING FOR SOCIAL AND ENVIRONMENTAL RISKS AND IMPACTS

17. The GCF-VCP has been re-screened using UNDP’s SESP. The SESP provides the rationale for the risk categorization of the project, whether it would be deemed high, moderate or low. The GCF-VCP is currently midway through its implementation phase, however after completion of detailed design plans of project activities, it was noted that certain unanticipated risks have arisen. While the 4 risks identified in 2016 are still relevant, the updated SESP has incorporated 4 new additional risks into the SESP template. These risks are considered moderate and low therefore the updated risk categorization of the project remains the same. The GCF-VCP is still considered to be of Moderate Risk.

18. The risks identified in the SESP include: (1) sediment movement during riverbank works; (2) sediment movement during ecosystem revegetation works; (3) exposure of acid sulphate soils; (4) construction waste; (5) land acquisition (6) displacement and resettlement, (7) indigenous people and (8) surface water diversion. These risks are expected to result in several environmental and social impacts some of which will affect community health, safety and working conditions, indigenous people and pollution to name a few. These risks and impacts are further elaborated in the SESP (Annex 1), the Risk Table (pg 10), Section 9 of the ESMF-MP, Preliminary Environmental Assessment Reports (Annex 4 and 5), and Environmental Management Plan (Annex 6). In addition, the Land Acquisition Action Plan (LAAP) for Activity 2.3 and the proposed Land Acquisition and Resettlement Action Plan (LARAP) for Activity 2.1 will also discuss some of these impacts.
3.3 SOCIAL AND ENVIRONMENTAL IMPACT ASSESSMENT

19. In addition to UNDP’s SESP, the GCF-VCP activities were also re-assessed to determine the probability and impact of its associated impacts during the implementation phase. The Risk Table (Figure 4) lists the project outputs and activities with their impacts and probability ratings based on the ratings in Figures 1, 2 and 3.

**Figure 1: Rating the impact of a risk**

<table>
<thead>
<tr>
<th>Score</th>
<th>Rating</th>
<th>Social and environmental impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Critical</td>
<td>Significant adverse impacts on human populations and/or environment. Adverse impacts high in magnitude and/or spatial extent and duration, areas impacted include areas of high value and sensitivity, adverse impacts to rights, lands and resources and territories of indigenous peoples, involve significant displacement or resettlement, generates significant quantities of greenhouse gas emissions, impacts may give rise to significant social conflict</td>
</tr>
<tr>
<td>4</td>
<td>Severe</td>
<td>Adverse impacts on people and/or environment of medium to large magnitude, spatial extent and duration more limited than critical (predictable, mostly temporary, and reversible). The potential risk impacts of projects that may affect the human rights, lands, natural resources, territories and traditional livelihoods of indigenous peoples are to be considered at a minimum potentially severe</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>Impacts of low magnitude, limited in scale (site specific) and duration (temporary) can be avoided, managed and/or mitigated with relatively uncomplicated accepted measures</td>
</tr>
<tr>
<td>2</td>
<td>Minor</td>
<td>Very limited impacts in terms of magnitude (small area/very low number of affected people affected) and duration (short), may be easily avoided, managed, mitigated</td>
</tr>
<tr>
<td>1</td>
<td>Negligible</td>
<td>Negligible or no adverse impacts on communities, individuals and/or environment</td>
</tr>
</tbody>
</table>

**Figure 2: Rating the probability of a risk**

<table>
<thead>
<tr>
<th>Score</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Expected</td>
</tr>
<tr>
<td>4</td>
<td>Highly likely</td>
</tr>
<tr>
<td>3</td>
<td>Moderately likely</td>
</tr>
<tr>
<td>2</td>
<td>Not likely</td>
</tr>
<tr>
<td>1</td>
<td>Slight</td>
</tr>
</tbody>
</table>

**Figure 3: Risk matrix**
## Figure 4: Risk Table

<table>
<thead>
<tr>
<th>Activity</th>
<th>Unmitigated Impacts</th>
<th>Likelihood of Impact and consequences</th>
<th>Avoidance and Mitigation Measures</th>
<th>Likelihood of Impact and consequences post mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output 1: Integrated flood management enhance climate resilience of the Vaisigano River Catchment in Samoa</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Strengthen capacities and information requirements to pursue an integrated programme approach to flood management</td>
<td>4 feasibility studies undertaken to inform associated project activities and potential projects. Includes studies on the interdependence of flood mitigation options; flood buffering reservoir in the upper Vaisigano Catchment; improving flood resilience of the Central Cross Island Road; and the Apia integrated sewage system.</td>
<td>Likelihood: 1</td>
<td>Ensure that any monitoring equipment are not placed in any sensitive locations and that prior-informed consents of any land owners are received.</td>
<td>Likelihood: 1</td>
</tr>
<tr>
<td></td>
<td>As part of the feasibility studies minimal works are expected such as site specific drilling for geo-tech analysis and water sampling and testing.</td>
<td>Consequence: 1 Risk: Low</td>
<td></td>
<td>Risk: Low</td>
</tr>
<tr>
<td>1.2 Establish health surveillance systems to track and manage flood related health issues</td>
<td>Inclusion of flood related information in CLEWS messaging system; This activity is not expected to generate any impacts but will enhance knowledge of health practitioners and village communities through trainings and workshops.</td>
<td>Likelihood: 1</td>
<td>Ensure that any monitoring equipment are not placed in any sensitive locations and that prior-informed consents of any land owners are received.</td>
<td>Likelihood: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consequence: 1 Risk: Low</td>
<td>Ensure that effective consultations are undertaken to share information about intentions of the project, to build on traditional knowledge of the communities and to inform the development and implementation of project activities.</td>
<td>Risk: Low</td>
</tr>
<tr>
<td>1.3 Expand EWS coverage to provide flooding alerts in Apia</td>
<td>Will include the installation of monitoring equipment for data collection This activity is not expected to generate any impacts but will enhance knowledge of health practitioners and village communities through trainings and workshops.</td>
<td>Likelihood: 1 Environmental and Social Management Framework and Management Plan 2021</td>
<td>Ensure that any monitoring equipment are not placed in any sensitive locations and that prior-informed consents of any land owners are received.</td>
<td>Likelihood: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consequence: 1 Risk: Low</td>
<td>Ensure that effective consultations are undertaken to share information about intentions of the project, to build on traditional knowledge of the communities and to inform the development and implementation of project activities.</td>
<td>Risk: Low</td>
</tr>
<tr>
<td>1.4 Conduct awareness raising campaigns on building practices and</td>
<td>This activity will enhance community knowledge about resilient building practices and will</td>
<td>Likelihood: 1 Environmental and Social Management Framework and Management Plan 2021</td>
<td>This activity will be guided by the ESMF-MP and legally binding conditions of Development Consents and</td>
<td>Likelihood: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consequence: 1 Risk: Low</td>
<td></td>
<td>Risk: Low</td>
</tr>
</tbody>
</table>
### Figure 4: Risk Table

<table>
<thead>
<tr>
<th>Activity</th>
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</tr>
</thead>
</table>
| designs for at risk communities living along the Vaisigano river          | establish flood proof model houses for potential alternative housing design  
  • This activity is expected to generate minimal impacts but will enhance knowledge of health practitioners and village communities through trainings and workshops.                                                                                                             | Risk: Low                            | Building Permits. Prior-informed consents for use of any land to construct the model structures must be received.  
  Ensure that effective consultations are undertaken to share information about intentions of the project; to build on traditional knowledge of the communities; and to inform the development and implementation of project activities.                                                                                     | Risk: Low                                              |
| Output 2: Key infrastructure in the Vaisigano River Catchment being flood-proofed to increase resilience to the negative effects of excessive water. |                                                                                                 |                                       |                                                                                      |                                                                                                                      |
| 2.1 Channelization of segment 2 and 3 of the Vaisigano river streambed to accommodate increased water flow and decrease flood risks | With technical studies and designs completed for Segment 3, unanticipated risks have arisen and need to be managed carefully. The risks relate to the potential displacement and resettlement of 2 families who live alongside the river bank, as well as the potential acquisition of land along the river bank. These are described below.  
  **Displacement and Resettlement:**  
  Families 1 and 2 are to be displaced for safety reasons.  
  1. Family 1 live in a low lying and vulnerable area on the western side of the river bank (650 meters upstream of the Lelata bridge). There are 45 family members living on customary land. While the family is already highly vulnerable and susceptible to the flood risks of the Vaisigano River, the addition of a new floodwall on the opposite side of the river (eastern) will potentially heighten this family’s risk to floodwaters even more. While the plans include rock revetments and gabion walls on the western side of the riverbank, there is still significant potential for overtopping from flash floods during extreme rainfall / weather events. | Likelihood: 4  
  Consequence: 3  
  Risk: Moderate | Consultations with community members within the VRCA have been completed, including with the utility service providers. These consultations informed the development of the EIA report.  
  Direct consultations with potentially affected persons however are still ongoing to ensure that they actively participate in the processes guided and required by Standard 5 (Displacement and Resettlement) and Standard 6 (Indigenous People) of UNDP’s SES as well as Samoa’s Taking Lands Act 1964.  
  To comply with Standard 5 of the SES, a LARAP will be developed to properly detail and outline the processes and requirements for land acquisition and displacement and resettlement activities under Activity 2.1. Standard 6 requirements and processes will also be incorporated into the LARAP.  
  No works relating to this activity shall start until the LARAP has been approved by UNDP  
  Majority of construction works will be undertaken during the dry season from April to October to reduce sediment discharge and erosion. | Likelihood: 4  
  Consequence: 2  
  Risk: Moderate |
**Figure 4: Risk Table**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Unmitigated Impacts</th>
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<th>Likelihood of Impact and consequences post mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family 1 will still retain ownership over their land as the GoS does not expect to take their land. They were only given an option by the GoS to relocate to a safer location away from the hazardous nature of their current home/land. They will continue to have access to their land at Lelata for subsistence farming.</td>
<td>Family 1 will still retain ownership over their land as the GoS does not expect to take their land. They were only given an option by the GoS to relocate to a safer location away from the hazardous nature of their current home/land. They will continue to have access to their land at Lelata for subsistence farming.</td>
<td>The GCF-VCP SGS, the SCC, the responsible IA (MWIT) and the contractors will mitigate the potential impacts by employing mitigation measures referred to in Section 9 of the updated ESMF-MP, the activity specific EIA and EMP (completed), the LARAP, the CESMP (when contract is awarded) and the legally binding conditions of the Development Consent and Building Permit when granted. The majority of mitigation measures have all been included in the above documents with others to be further included in the CESMP.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Family 2 live beside the Lelata Bridge at the North West corner of the bridge. There are 10 members in Family 2. Both the floodwall works (2.1) and the Lelata bridge works (2.3), will significantly affect the amenity of this family from potentially high noise and vibration levels. It is also a safety issue as the family live beside and below the bridge. This family live on freehold land. The potential displacement of this family will be temporary as they will only be required to move when construction works reaches the vicinity of their property. Family 2 will return to their land and homes when it is safe for them to do so.</td>
<td>2. Family 2 live beside the Lelata Bridge at the North West corner of the bridge. There are 10 members in Family 2. Both the floodwall works (2.1) and the Lelata bridge works (2.3), will significantly affect the amenity of this family from potentially high noise and vibration levels. It is also a safety issue as the family live beside and below the bridge. This family live on freehold land. The potential displacement of this family will be temporary as they will only be required to move when construction works reaches the vicinity of their property. Family 2 will return to their land and homes when it is safe for them to do so.</td>
<td>2. Family 2 live beside the Lelata Bridge at the North West corner of the bridge. There are 10 members in Family 2. Both the floodwall works (2.1) and the Lelata bridge works (2.3), will significantly affect the amenity of this family from potentially high noise and vibration levels. It is also a safety issue as the family live beside and below the bridge. This family live on freehold land. The potential displacement of this family will be temporary as they will only be required to move when construction works reaches the vicinity of their property. Family 2 will return to their land and homes when it is safe for them to do so.</td>
<td>Land Acquisition:</td>
<td></td>
</tr>
<tr>
<td>Under Activity 2.1, land survey works (May 2021) identified a total land area of 6903 square meters will be encroached by the footprint of the flood levees located in Segment 3 only. The affected land areas are customary land belonging to two separate land owners/families. There are no structures, dwellings or graves within/near the encroached areas or alignment of the proposed flood levees. No persons will be displaced. LA will be based on market value and negotiated settlements with the affected land owners/families.</td>
<td>Under Activity 2.1, land survey works (May 2021) identified a total land area of 6903 square meters will be encroached by the footprint of the flood levees located in Segment 3 only. The affected land areas are customary land belonging to two separate land owners/families. There are no structures, dwellings or graves within/near the encroached areas or alignment of the proposed flood levees. No persons will be displaced. LA will be based on market value and negotiated settlements with the affected land owners/families.</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
### Figure 4: Risk Table

<table>
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<tr>
<th>Activity</th>
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<th>Likelihood of Impact and consequences</th>
<th>Avoidance and Mitigation Measures</th>
<th>Likelihood of Impact and consequences post mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-going land survey works for Segments 2 and 4 have yet to be completed. Other potential impacts relating to construction works include surface water diversion, traffic issues, temporary loss of access to the river, sediment movement, pollution, waste disposal and amenity issues such as noise, vibrations and dust generation will be temporary, minor and manageable. Just as important is occupational safety and health issues, and working conditions of the contractors, including the health and wellbeing of community members and any marginalised groups.</td>
<td>Likelihood: 1  Consequence: 1  Risk: Low</td>
<td>This activity requires effective community engagement and trainings to enhance technical skills and knowledge of communities to implement various environmentally friendly eco-system based solutions / enterprises. The activity will also build on the traditional knowledge shared by project participants during consultations and trainings. Technical advice will be made available to the community members by way of the Ministry of Agriculture and Fisheries, Ministry of Natural Resources and Environment and the Samoa Business Hub. This activity is guided by its Operational Manual and the mitigation measures referred to in Section 9 of the updated ESMF-MP.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity will involve replanting and other livelihood interventions on both private and GoS land. It will not require any land acquisition or displacement (physical or economic) of any individuals. Potential impacts may include sediment movement, pollution, and impacts on water quality however these impacts are temporary, minor and manageable.</td>
<td>Likelihood: 1  Consequence: 1  Risk: Low</td>
<td>This activity requires effective community engagement and trainings to enhance technical skills and knowledge of communities to implement various environmentally friendly eco-system based solutions / enterprises. The activity will also build on the traditional knowledge shared by project participants during consultations and trainings. Technical advice will be made available to the community members by way of the Ministry of Agriculture and Fisheries, Ministry of Natural Resources and Environment and the Samoa Business Hub. This activity is guided by its Operational Manual and the mitigation measures referred to in Section 9 of the updated ESMF-MP.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With technical studies and designs completed for this activity, unanticipated risks have arisen and</td>
<td>Likelihood: 3</td>
<td>Consultations with community members within the VRCA have been completed, including with the utility</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.3 Construction upgrade of Lelata bridge to

2.2 Implement ecosystem responses upstream for decreased flows during extreme weather events
Updated Environmental and Social Management Framework and Management Plan 2021

Green Climate Fund Government of Samoa Vaisigano Catchment Project (GCF-VCP)

**Figure 4: Risk Table**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Unmitigated Impacts</th>
<th>Likelihood of Impact and consequences</th>
<th>Avoidance and Mitigation Measures</th>
<th>Likelihood of Impact and consequences post mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>accommodate increase flood waters</td>
<td>need to be managed carefully. The risks relate to the land acquisition of two freehold lots; reconstruction of 7 access ways and 2 right of ways. The proposed design for the new replacement bridge will see the Lelata Bridge re-constructed at the same location and layout but with the height of the bridge raised by 2.8 meters. This increase in height serves to accommodate the height of the proposed new floodwall (activity 2.1) and to allow for sufficient freeboard to cater for floodwaters and debris. By raising the bridge however, 7 private access ways and 2 RoW’s will be affected. The 7 access ways will need to be reconfigured to tie in with the new road level with one RoW to be removed for safety reasons while the other will be extended. The RoW’s are located North-East of the Eastern bridge approach. In finding an alternative RoW to the properties located to the North-East side of the bridge, LTA and the engineering design team, propose to use an existing access road located further east from the bridge approach however this will have an impact on two property lots nearest to the north east corner of the bridge. The two lots include Lot ……with both lots currently vacant and void of any building structures or grave sites. The houses that were previously there were destroyed during the extreme flood event of 2012. No physical or economic displacement will result from this activity. If and when the GoS acquires the two lots as per provisions of the Taking Lands Act 1964, and transactions have completed (based on agreed service providers. These consultations also informed the development of the EIA report. Direct consultations with potentially affected persons have been undertaken with both landowners willing to sell their freehold properties for a fair market price to the GoS. To give effect to this proposed plan, LTA through the MNRE, will acquire the land for public purposes. This action will trigger provisions of the Taking Land Act 1964 and Standard 5 of UNDP’s SES. To comply with Standard 5, a LAAP will be developed to guide the whole land acquisition process to ensure that all procedural elements outlined in Standard 5 have been followed through properly. No works relating to this activity shall start until the LAAP has been approved by UNDP Majority of construction works will be undertaken during the dry season from April to October to reduce sediment discharge and erosion. The GCF-VCP SGS, the responsible IA (LTA) and the contractors will mitigate the potential impacts by employing mitigation measures outlined in section 9 of the updated ESMF-MP, the Lelata Bridge EIA and EMP (completed), the LAAP, the CESMP (when contract is awarded) and the legally binding conditions of the Development Consent (granted) and the Building Permit (currently being processed). The majority of mitigation measures have all been included in the above documents with others to be further included in the CESMP.</td>
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<tr>
<td></td>
<td>Consequence: 3 Risk: Moderate</td>
<td>service providers. These consultations also informed the development of the EIA report. Direct consultations with potentially affected persons have been undertaken with both landowners willing to sell their freehold properties for a fair market price to the GoS. To give effect to this proposed plan, LTA through the MNRE, will acquire the land for public purposes. This action will trigger provisions of the Taking Land Act 1964 and Standard 5 of UNDP’s SES. To comply with Standard 5, a LAAP will be developed to guide the whole land acquisition process to ensure that all procedural elements outlined in Standard 5 have been followed through properly. No works relating to this activity shall start until the LAAP has been approved by UNDP Majority of construction works will be undertaken during the dry season from April to October to reduce sediment discharge and erosion. The GCF-VCP SGS, the responsible IA (LTA) and the contractors will mitigate the potential impacts by employing mitigation measures outlined in section 9 of the updated ESMF-MP, the Lelata Bridge EIA and EMP (completed), the LAAP, the CESMP (when contract is awarded) and the legally binding conditions of the Development Consent (granted) and the Building Permit (currently being processed). The majority of mitigation measures have all been included in the above documents with others to be further included in the CESMP.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consequence: 2 Risk: Moderate</td>
<td>service providers. These consultations also informed the development of the EIA report. Direct consultations with potentially affected persons have been undertaken with both landowners willing to sell their freehold properties for a fair market price to the GoS. To give effect to this proposed plan, LTA through the MNRE, will acquire the land for public purposes. This action will trigger provisions of the Taking Land Act 1964 and Standard 5 of UNDP’s SES. To comply with Standard 5, a LAAP will be developed to guide the whole land acquisition process to ensure that all procedural elements outlined in Standard 5 have been followed through properly. No works relating to this activity shall start until the LAAP has been approved by UNDP Majority of construction works will be undertaken during the dry season from April to October to reduce sediment discharge and erosion. The GCF-VCP SGS, the responsible IA (LTA) and the contractors will mitigate the potential impacts by employing mitigation measures outlined in section 9 of the updated ESMF-MP, the Lelata Bridge EIA and EMP (completed), the LAAP, the CESMP (when contract is awarded) and the legally binding conditions of the Development Consent (granted) and the Building Permit (currently being processed). The majority of mitigation measures have all been included in the above documents with others to be further included in the CESMP.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Figure 4: Risk Table

<table>
<thead>
<tr>
<th>Activity</th>
<th>Unmitigated Impacts</th>
<th>Likelihood of Impact and consequences</th>
<th>Avoidance and Mitigation Measures</th>
<th>Likelihood of Impact and consequences post mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>negotiated settlement) the lots will not be able to be reclaimed by the current owners in the future. Other potential impacts relating to construction works include traffic issues, road closures, temporary loss of access to the river, sediment movement, pollution, waste disposal and amenity issues such as noise, vibrations and dust generation will be temporary, minor and manageable. Just as important is occupational safety and health issues of contractors, including the health and wellbeing of community members and any marginalised groups.</td>
<td></td>
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</tr>
<tr>
<td>2.4 Extension of floodwalls at Lelata and Leone bridges to prevent damage during extreme events</td>
<td>This activity has been integrated with activity 2.1 to ensure consistency of design of the floodwalls along the same river. Potential impacts expected will relate to traffic issues, temporary loss of access to the river, sediment movement, pollution, waste disposal and amenity issues such as noise, vibrations and dust generation will be temporary, minor and manageable. Just as important is occupational safety and health issues of contractors, including the health and wellbeing of community members and any marginalised groups.</td>
<td>Likelihood: 2 Consequence: 2 Risk: Low</td>
<td>This will require effective community engagement and consultations with affected parties and the wider Vaisigano community. As the floodwall is divided into segments for ease of design and implementation, consultations with community members along this segment have yet to start. The GCF-VCP SGS, the responsible IA (MWTI) and the contractors will mitigate the potential impacts by employing mitigation measures outlined in Section 9 of the updated ESMF-MP, and other associated environmental reports when completed such as the EIA and EMP and the CESMP (when contract is awarded) as well as the legally binding conditions of the Development Consent and the Building Permit (when granted). The majority of mitigation measures have all been included in the above documents with others to be further included in the CESMP.</td>
<td>Likelihood: 2 Consequence: 2 Risk: Low</td>
</tr>
</tbody>
</table>

**Output 3:** Drainage in downstream areas upgraded for increased regulation of water flows
<table>
<thead>
<tr>
<th>Activity</th>
<th>Unmitigated Impacts</th>
<th>Likelihood of Impact and consequences</th>
<th>Avoidance and Mitigation Measures</th>
<th>Likelihood of Impact and consequences post mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Develop a climate resilient stormwater master plan</td>
<td>This activity will generate minimal environmental impacts although equipment may be installed for geo tech analysis to inform the master plan.</td>
<td>Likelihood: 1&lt;br&gt;Consequence: 1&lt;br&gt;Risk: Low</td>
<td>Ensure that any monitoring equipment are not placed in any sensitive locations and that prior-informed consents of any land owners are received.</td>
<td>Likelihood: 1&lt;br&gt;Consequence: 1&lt;br&gt;Risk: Low</td>
</tr>
<tr>
<td>3.2 Upgrade drainage systems and outfalls in hazard areas to accommodate flooding events</td>
<td>This activity will generate temporary, minor and manageable impacts and mostly around the business sector. Just as important is occupational safety and health issues of contractors, including the health and wellbeing of community members and any marginalised groups.</td>
<td>Likelihood: 2&lt;br&gt;Consequence: 2&lt;br&gt;Risk: Low</td>
<td>This included community engagement and consultations with affected parties in the Apia Urban Area especially the businesses located near the drainage works. Informed consents were collected to ensure that the affected parties within the area were informed and their views sought regarding proposed drainage works. The GCF-VCP SGS, the responsible IA (LTA) and the contractors will mitigate the potential impacts by employing mitigation measures outlined in Section 9 of the updated ESMF-MP and other associated environmental reports that were completed such as the EMP and the CESMP as well as the legally binding conditions of the Development Consent. The majority of mitigation measures have all been included in the above documents with others to be further included in the CESMP.</td>
<td>Likelihood: 2&lt;br&gt;Consequence: 1&lt;br&gt;Risk: Low</td>
</tr>
</tbody>
</table>
3.4 Significant Social and Environmental Issues and Impacts

20. The initial ESMF-MP (2016) had noted that no land taking or displacement and resettlement activities would occur throughout the project. However, after technical studies and detailed designs were completed for activities 2.1 and 2.3, it was recognized that land taking, displacement and resettlement activities could not be avoided.

21. Although UNDP seeks to avoid physical and economic displacement in its projects and programmes, where displacement cannot be avoided due to justifiable reasons, displacement may occur with appropriate forms of legal protection and compensation. When displacement and resettlement cannot be avoided in a project, Standard 5 of the SES is triggered and so are its requirements. Some of the more significant impacts that will potentially result from proposed project activities includes (a) land acquisition, (b) displacement and resettlement, and impacts on (c) indigenous people.

22. **(a) Land Acquisition:** In relation to Activity 2.3, two freehold property lots (860 square meters each) will be acquired by the GoS as part of the upgrade of the Lelata Bridge. The new bridge will be raised 2.8m higher to tie into the proposed flood protection walls (Activity 2.1) and to allow for sufficient freeboard under the bridge. However, by raising the bridge 2.8m, 7 private access ways and two Right of Ways servicing a number of residential properties near the bridge will need to be reconstructed and/or closed off. While the private access ways will be reconstructed by the contractor (BECA, OSM 2020), only one RoW will be closed off permanently (North-East corner of the bridge) as the new height of the road and bridge will make this RoW unsafe to use. The users of this RoW will be directed to share an existing RoW that is located further east of the bridge.

23. To ensure the project provides safe access for all residents located at the North East corner of the bridge, the GoS will look to acquire two freehold property lots to accommodate part of the RoW that will go through Lot... Lots...are currently vacant and have no structures such as buildings or grave sites on site. As such no persons will be displaced. Both the owners of these lots had indicated their willingness to sell their properties for a fair market price.

24. Under Activity 2.1, land survey works (May 2021) identified a total land area of 6903 square meters will be encroached by the footprint of the flood levees located in Segment 3 only. The affected land areas are customary land belonging to two separate land owners/families. There are no structures, dwellings or graves within/near the encroached areas or alignment of the proposed flood levees. No persons will be displaced. LA will be based on market value and negotiated settlements with the affected land owners/families. On-going land survey works for Segments 2 and 4 have yet to be completed.

25. To ensure that land acquisition is carried out by the GoS in accordance with the legal requirements of the Taking Lands Act 1964 and UNDP’s Standard 5, an Abbreviated LAAP has been developed for Activity 2.3 while a LARAP will be developed for Activity 2.1 to guide the planning and implementation of the whole process.

26. **(b) Displacement and Resettlement:** In relation to Activity 2.1, specifically Segment 3 of the proposed Flood Wall, some displacement is likely to occur for safety reasons. This is based on public consultations held in 2020 by MWTI, together with its design contractor with the relevant communities located along Segment 3.
27. To ensure that displacement and resettlement is carried out by the GoS in accordance with the legal requirements of the Taking Lands Act 1964 and UNDP’s Standard 5, a LARAP will be developed to identify all mitigation and management measures, including compensation measures required to minimise the potential social impacts. The LARAP will look to consider and address: resettlement options chosen by displaced persons including compensation at full replacement costs; compensation for the loss, salvage and transport of affected properties of all displaced persons; where land is taken, replacement land commensurate in quality, size and value or better; value of livelihoods and income levels; transitional support; women and men given equal rights to compensation; and relocation assistance.

28. **(c) Indigenous Peoples:** Based on the consultations so far, there is a likelihood that three families who live on customary / traditional land that is considered to be highly vulnerable to flood risks will be impacted by Segment 3 flood wall construction. In following UNDP SES requirements, the impacted families have been alerted of their right to withhold consent at any juncture and/or to refuse the proposed resettlement option which are detailed out in the LARAP that is currently being finalised.

29. Furthermore, all processes relating to the displacement and resettlement of these indigenous families will be guided by UNDP’S Standard 5 (Displacement and Resettlement) and Standard 6 (Indigenous People) requirements, including elements for FPIC as outlined in the UNDP SES Guidance Note on Standard 6 (2017). FPIC procedures, relating specifically to resettlement/land acquisition will be further detailed in the proposed LARAP for Activity 2.1. The FPIC process however will not be limited to resettlement/land acquisition elements under Activity 2.1 alone. A full indicative FPIC procedure is outlined in the project’s Stakeholder Engagement Plan now revised as the Community and Stakeholder Engagement Procedure and Management Plan (CSEMP).

30. The FPIC procedure will be followed for any matters that may affect the rights to, interests on, and use of lands, resources, territories, etc. (whether titled or untitled to the people in question) as well as livelihoods of affected indigenous peoples. This procedure will be followed and integrated in to relevant future stakeholder consultations. The indicative FPIC procedure will outline definitions, specific requirements, procedures, and documentation that is to be followed in instances where FPIC is required. The collective right to give or withhold consent applies to all project activities that may directly impact the lands, territories, resources, and livelihoods of ethnic indigenous communities. Consent must be sought and granted or withheld in accordance with the unique decision-making processes of each community (as is further stipulated in the indicative FPIC procedure).

31. The review of the ESMF-MP using UNDP’s SES has highlighted the need for the project to consider potential concerns of Samoa’s indigenous community. Given the complexity of Samoa’s indigenous identity (and the fact that the majority population consider themselves indigenous), Standard 6 (Indigenous Peoples) was not initially triggered during the project’s initial SES screening. With newly updated SES Guidance Note on Standard 6, the review has determined that Standard 6 should be triggered, as individuals meeting the UNDP Standard 6 definition of “indigenous peoples” are present and have ties to the land within the project’s area of influence. The Samoan population is made up of 92% Samoan (considered indigenous to the country) while the remaining ethnicities comprise of 7% Mixed European and Polynesian ancestry, and about 0.4% European. With such a
high percentage of indigenous people in the country with only one language (Samoan), Samoa is considered to be culturally homogenous. Samoa’s homogenous culture and traditions are practiced throughout the whole country. Samoa’s cultural links to land is recognised through ownership of customary land which makes up 80% of Samoa’s land tenure. With customary land being inalienable, the rights of this homogenous population to customary land is protected and safeguarded.

32. In addition, the majority of Samoan villages comprise of a Village Fono or Council that governs and determines their own affairs although there are also several urban villages located around the AUA that are not governed by a Village Fono as they mostly comprise of freehold land and therefore have no traditional governance / community structure (matai system). As per village norms and traditions, the Village Fono provides a local governance system that is founded on a consultative approach that is unique to Samoa as it is based on the consensus of family chiefs (matais). All aspects of village life, including external factors such as government projects, are discussed in Village meetings and it is usually through this channel that the GoS approaches a Village to seek their support (and views) for a project. Through these meetings, the GoS would also be given the opportunity to meet with women’s groups, youth groups and those with disabilities. Suffice to say, local mechanisms are already in place to protect the people’s ownership of customary land, their rights to voice their views in Village settings (or even outside of the Village), as well as to participate freely in project activities and consultation programs as they see fit.

33. Also, for most government projects, the GoS partners with and works closely with village individuals / communities and civil society organisations to design and implement projects that are either based in the communities or would have an impact on them. For the GCF-VCP in particular, indigenous people’s rights to their land and resources as well as their rights to be heard and listened to is highly respected by the project given the nature of the Faa-Samoa, that is ‘to serve and respect’ people and communities. Project-affected indigenous people will be informed of their rights, and their right to withhold consent, from the outset of consultation and engagement with the GCF-VCP project.

3.5 PROCEDURES TO ADDRESS SOCIAL AND ENVIRONMENTAL IMPACTS

34. The Planning and Urban Management Agency Act 2004 (PUMA Act 2004) and the Planning and Urban Management (EIA) Regulations 2007 specifies the requirements for development proponents to submit Environmental Impact Assessment Reports. Depending on the type of proposed development and / or value of the development as well as the pre-screening of potential impacts by PUMA, EIA reports can either be Comprehensive or Preliminary. These Reports are submitted as part of a proponent’s application for Development Consent. The PUMA can refer the EIA reports to relevant authorities for comment and also make them available for public viewing. The EIA Regulations 2007 further provides guidance on the required content of these reports to ensure information is consistent for the review of the Agency.

35. It must be highlighted that ‘Environment’ is described in the PUM Act 2004 to include: (a) ecosystems and their constituent parts, including people and communities; (b) all natural and physical resources; (c) amenity values and (d) the social, economic, aesthetic and cultural conditions which affect the matters stated in (a) to (c). As such, any Preliminary or Comprehensive EIA developed as
a requirement of the EIA Regulations 2007 must ensure to consider the social impacts of any proposed development.

36. For the GCF-VCP, the RIA’s are responsible for complying with the ESMF-MP and the GoS legal processes. Some of these processes relate to land acquisition, obtainment of Development Consent(s) which includes the EIA process, and obtainment of Building Permits. Therefore, while all RIA’s are guided by the ESMF-MP, certain project activities that are administered by the RIA’s further require more detailed social and environmental scrutiny.

37. This is also in line with UNDPs SES as it recognizes the need for targeted assessments once project activities and sites are fully defined with targeted assessments expected to be consistent with national regulations and the UNDP SES. As such, three project activities (2.1; 2.3 and 3.2) have developed site specific Preliminary Environmental Assessment Reports (PEAR) and Environmental Management Plans (EMP) to further guide MWTI, LTA, GCF-PMU and the contractors on the implementation, monitoring and reporting measures to minimize social and environmental adverse effects. Activity 2.1 developed a PEAR and an EMP. Both documents have been submitted to PUMA (regulatory authority) for review as part of the project’s application for development consent. Activity 2.3 developed a PEAR and an EMP. Both documents were approved by PUMA in 2020, together with its Development Consent. For Activity 3.2, an EMP was only required by the regulatory authority. This was approved by PUMA together with its development consent.

38. Where specific management plans may be required to further support environmental assessments already undertaken, they must also be consistent with the requirements of the UNDP SES. The only management plans required in this regard to further support Activities 2.1 and 2.3 are the LARAP and the LAAP respectively.

4. LEGAL AND INSTITUTIONAL FRAMEWORK

39. This section summarizes the legal and institutional framework for the project and includes information on the applicable laws and regulations of Samoa in relation to social and environmental issues, as well as UNDP’s Social and Environmental Standards (SES) and applicable multilateral environmental agreements.

4.1 GOVERNING LEGISLATION AND REGULATIONS OF SAMOA

40. In the initial ESMF-MP, thirty-two (32) pieces of primary and secondary laws were identified as being relevant to the project. In addition to this initial list, three laws have been added (e, s and w) as they are important to further guide project implementation.

a. Agriculture, Forests and Fisheries Ordinance 1959;

b. Alienation of Customary Land Act 1965;

c. Alienation of Freehold Land Act 1972;

d. Animals Ordinance 1960;

f. Disaster and Emergency Management Act 2007;
g. Fisheries Management Act 2016;
h. Forestry Management Act 2011;
i. Health Ordinance 1959;
j. Lands, Surveys and Environment Act 1989;
k. Land Titles Registration Act 2008;
l. Marine Pollution Prevention Act 2008;
m. Ministry of Health Act 2006;
n. Ministry of Internal Affairs Act 1995, 2010 and as amended;
q. Ministerial and Departmental Arrangements Act 2003;
r. National Parks and Reserves Act 1974;
s. Occupational Safety and Health Act 2002;
t. Pesticides Regulation 2011;
u. Planning and Urban Management Act 2004;
v. Planning and Urban Management (Environmental Impact Assessment) Regulations 2007;
w. Planning and Urban Management (Notification of Application) Regulation 2017;
x. Ports Authority Act 1998;
y. Quarantine (Biodiversity) Act 2005;
z. Samoa Water Authority Act 2003;
aa. Samoa Water Authority (Sewerage and Wastewater Regulations) 2009;
bb. Scientific Research Organisation of Samoa Act 2008;
cc. Spatial Information Management Act 2010;
dd. Taking of Land Act 1964;
e. Waste Management Act 2010;
ff. Water Resources Management Act 2008;
gg. Water Resources and Management Regulation 2013;
hh. Water Schemes Act 2015;
ii. Village Fono Act 1990;

While all the laws identified above are applicable to the project, the main laws and policies that specifically relate to project activities and UNDP’s SES are described below.
a. **Constitution of the Independent State of Samoa 1960:** In reference to rights regarding property, no property shall be taken possession of compulsorily and no right over or interest in any property shall be acquired compulsorily except under the law, which of itself or when read with any other law – requires the payment within a reasonable time of adequate compensation; gives to any person claiming that compensation a right of access for the determination of his interest in the property and the amount of compensation, to the Supreme Court; and also the same rights of appeal. This principle of law applies to customary land although customary land cannot be alienated except by way of an Act of Parliament where a lease may be granted or when land is taken for public purposes.

b. **Lands, Surveys and Environment Act 1989:** This law is administered by the MNRE. It describes matters relating to Government Land or Public Land which all rivers and coastal zones are part of. It includes provisions for the conservation and protection of the environment and the establishment of National Parks and other forms of protected areas.

c. **National Building Code 2017:** This Code is administered by the MWTI. The National Building Code provides a performance based set of standards on how buildings and site locations should be constructed to achieve a structurally sound and sustainable built environment. As such, any built structures shall require a building permit.

d. **Occupational Safety and Health Act 2002:** This Act is administered by the Ministry of Commerce, Industry and Labour. Provisions of the Act relate to managing the welfare of people at work and people affected by work activity and occupational hazards.

e. **Planning and Urban Management Act 2004:** This law is administered by the MWTI although when the GCF-VCP was approved in 2017, this Act was under the MNRE. The Act provides a framework for planning the use, management, protection and the sustainable development of land in Samoa. It established the Planning and Urban Management Agency (PUMA) and the Planning and Urban Management Board, both of which assess and determine the social and environmental impacts of development applications. It administers the Development Consent process and provides for the development of sustainable management plans when necessary. Section 42 of the Act provides for the preparation of Environmental Impact Assessments and Section 46 provides for consideration of cultural and natural heritage.

f. All developments must obtain Development Consent prior to any works taking place on land, notwithstanding whether it is freehold, customary or Government owned. The Act also includes provisions for amenity issues such as excessive noise; excessive dust; visually offensive signage, material or structures; poor airspace, lighting or ventilation; excessive traffic generation; smell, fumes, vapour; waste materials, including bulk material, used goods and property; waste water, sewage and drainage; and stray and domestic animals.

g. **Planning and Urban Management (EIA) Regulations 2007:** This secondary legislation describes the requirements for the development of Environmental Impact Assessment Reports (Comprehensive or Preliminary). It outlines the contents for the reports including the need for the development of a Baseline and compliance monitoring schedule. As part of the EIA process, consultations with stakeholders must be included to ensure that surrounding communities are informed. Depending on the scale and value of project activities, the relevant implementing agencies will commission the development of EIA reports as when required by the regulatory authority. To date, two project
activities, specifically for the flood wall (2.1) and the bridge upgrade (2.3) have prepared EIA reports for submission to the regulatory authority as part of their development application. Activity 3.2 for drainage upgrade works had also prepared an Environmental Management Plan as a requirement for their development application.

h. **Samoa Codes of Environmental Practice 2007**: This code is administered by the PUMA of the MWTI. It provides 14 codes of environmental practices (COEP) that define methods and/or procedures to avoid or mitigate adverse environmental impacts that may arise from infrastructural development projects and or maintenance works. The regulatory authority will impose compliance with relevant COEPs when development applications are submitted for review and a determination.

i. **Taking of Lands Act 1964**: This law is administered by the MNRE. It provides a legal framework for land acquisition, where the GoS can take Customary and/or Freehold land for public purposes. It describes the procedures for land taking as well as compensation for lands acquired. It states that “every person having an estate or interest in any land taken under this Act for any purpose, or injuriously affected thereby or suffering any damage from the exercise of any of the powers given by the Act shall be entitled to full and just compensation”. Where there is disagreement on compensation however, the matter can be referred to the Supreme Court for a determination and the Court of Appeal if so required. In relation to two project activities, specifically the flood wall (2.1) and the bridge upgrade (2.3), this Act will provide the procedural steps for land taking and compensation to ensure that affected individuals/people become part of the whole process and that any social and economic impacts are mitigated by the GoS.

j. **Waste Management Act 2010**: This Act is administered by the MNRE. It provides provisions for the management of waste materials inclusive of enforcement measures for the project.

k. **Water Resources and Management Act 2008**: This Act is administered by the MNRE. Its provisions relate to the sustainable management and regulation of water resources including the management of watersheds. It includes licenses and permits to take water as well as administrative powers to monitor and enforce the project as required.

4.2 **UNDP’s Social and Environmental Standards (SES)**

42. The SES presents UNDP’s commitment to mainstream social and environmental sustainability into its Programmes and Projects to support sustainable development. It consists of three overarching principles and seven standards for compliance.

43. To ensure that all relevant obligations are identified for the project’s compliance, the table below compares the requirements between UNDP’s SES and their relationship with the relevant laws of Samoa.

Figure 5: UNDP’s SES and complementing laws and policies of Samoa

<table>
<thead>
<tr>
<th>UNDP SES</th>
<th>Relevant Samoan laws and policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principle 2: Gender Equality and Women’s Empowerment</td>
<td>Ministry of Women Act 1990</td>
</tr>
</tbody>
</table>
Principle 3: Environmental Sustainability

<table>
<thead>
<tr>
<th>Standard</th>
<th>Law Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 4: Cultural Heritage</td>
<td>Planning and Urban Management Act 2004 Planning and Urban Management (EIA) Regs 2007</td>
</tr>
</tbody>
</table>

44. As indicated in the table above, UNDP’s SES can be complemented by provisions contained in some of the relevant laws of Samoa and as such, these laws will be used to guide the legal requirements of all project activities noting also that Samoa’s laws are mostly based on various international laws. Samoa is also obligated to ensure that all requirements identified in the SES are complied with.

45. In reference to Standard 5 requirements, some of the stated complementing laws do not fully align with the requirements however, where Samoan laws fall short, the SES requirements will take precedence. For example, in relation to:
(a) Displacement and resettlement; - The TLA 1964 provides for land acquisition only but not displacement and resettlement. Despite this however, past GoS practices indicates that the GoS have previously secured relocation sites for affected people with compensation provided for under the Act. The SES on the other hand recognizes Displacement and Resettlement and provides requirements to be satisfied in this regard;

(b) Compensation – The TLA 1964 does not specify types of compensation to be offered as it only refers to full and just compensation to be determined by the Minister in charge whereas the SES refers to several different types of compensation including relocation sites with basic services, facilities, infrastructure and other living amenities. Past GoS practices however indicates that GoS relies on valuation assessments done by MNRE or private valuers on estimated values of assets and non-assets.

46. In reference to Standard 6 requirements on Indigenous People, the following need to be considered and addressed throughout the project but particularly under Activity 2.1 where a number of indigenous Samoans would be affected due to land acquisition and displacement and resettlement issues. These include consideration for: the human rights of indigenous people; recognition of distinct groups of people with common customs and practices; their rights to land, resources and/or territories; having legal personalities; involuntary resettlement and the need for free, prior and informed consents; effective and meaningful participation; prior social and environmental impact studies; and appropriate benefits.

47. While there is no specific body of law that refers to ‘indigenous people’ in Samoa, human rights are protected under the Samoan Constitution 1960 given its reference to the ‘fundamental rights of all people’. With regards to land however, freehold and or customary land cannot be alienated but can be taken for public purposes with adequate compensation provided. Much like the requirements under SES 6, the Samoan Constitution 1960 and the Taking Lands Act 1964 have provisions that also safeguard the Samoan people and their land. In addition, the Planning and Urban Management Act 2004 includes provisions for public notification and consultations to be undertaken, whether through the EIA process or through the use of an Affected Persons Form to obtain consent or non-consent to a proposed development. Aside from these laws however, it is also a cultural norm for Samoa to consult and negotiate with affected individuals / communities to ensure that mutual consensus/agreements are reached before finalisation of any arrangements between landowners and the GoS.

48. As further outlined in Standard 6, where indigenous people are involved to the extent that their rights, land, territories, resources, traditional livelihoods and cultural heritage are affected, and/or could also possibly result in resettlement, then the FPIC process would be triggered. This would require the full, effective and meaningful participation of indigenous people to ensure that a mutual agreement is reached between the relevant parties (UNDP 2017). However, as there is no standard format for such an agreement, the project will undertake the following to ensure evidence of written agreements are developed and attached to the LARAP. This will include the signing of: (a) the Affected Person’s Form, and (b) development and signing of an MoU by the relevant parties. In addition to the documentation/evidence of FPIC provided for any instances of land acquisition/resettlement under Activity 2.1, an indicative FPIC procedure for the GCF-VCP project is being developed (and included in the Community and Stakeholder Engagement Procedure and
Action Plan) to guide the implementation of the project. This indicative FPIC procedure will be tailored to the specific project activities, as required.

49. While Standard 6 requires the development of an Indigenous People’s Plan, in this particular case the indigenous people affected are a result of land acquisition and displacement and resettlement activities and as such, the requirements and elements of Standard 6 will be incorporated into the LARAP that is being developed for Activity 2.1. Based on initial assessments, the indigenous families that will be affected by the proposed flood walls are relatively small in number. These people own small portions of land either through freehold or customary ownership. They do not have a distinctive language, culture or way of life that is different from other Samoan’s. The only difference is their linkage to customary or traditional land as they are owned collectively by family members. The ownership of customary land however is protected and safeguarded by the Constitution of Samoa and the Taking Lands Act 1964, where legal provisions on land taking are clearly set out.

50. As previously mentioned, a LARAP will be developed for Activity 2.1 to ensure Standard 5 requirements are complied with in regards to displacement and resettlement, and land acquisition activities of the project. As those impacted are indigenous Samoans, it is reasonable to also incorporate Standard 6 requirements into the LARAP to streamline both processes noting the following: (a) the same Samoan laws and systems will be used, (b) an extensive stakeholder engagement process will be undertaken with the same project-affected people, (c) the use of the same project-level grievance redress mechanism, and (d) for ease of monitoring and reporting purposes.

4.3 MULTILATERAL ENVIRONMENTAL AGREEMENTS

51. Samoa is a party to several regional and international MEAs and frameworks. These international agreements also feed into the development of Samoa’s national laws and policies. Some of these are listed below although not limited to them.

   a. 2030 Sustainable Development Agenda
   b. Sendai Framework
   c. SAMOA Pathway
   d. IRENA
   e. United Nations Framework on Forestry
   f. United Nations Declaration on the Rights of Indigenous Peoples
   g. World Heritage Convention
   h. United Nations Convention on Biological Diversity
   i. United Nations Convention to Combat Desertification
   j. Convention on the Elimination of all Forms of Discrimination against Women
5. IMPLEMENTATION AND OPERATION

5.1 GENERAL MANAGEMENT STRUCTURE AND RESPONSIBILITIES

5.2 This section describes the roles and responsibilities of the key project stakeholders involved in the management, coordination, application, monitoring and reporting of the ESMF-MP.

5.3 The diagram below (Figure 6) depicts the latest institutional structure of the project and comprises of the Project Board/Steering Committee, UNDP, MoF, the CEO Forum, the RIAs, the PMU inclusive of the Project Manager and project staff, the Technical Advisory Groups (TAGs), and the Technical Advisors. While all are aware of the project’s ESMF-MP, there are certain key people who have specific responsibilities related to the ESMF-MP.

5.4 **Project Board:** The Project Board (Steering Committee) is chaired by the MoF and is comprised of the UNDP and the RIAs of MWTI, MNRE, MoH and LTA. The MoF is accountable to UNDP for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources. The Project Board reviews and appraises the detailed project plan, including the ESMF, and provides overall guidance and direction to the project, including guidance to the Project Manager on possible management actions to address specific risks.

5.5 **UNDP:** The UNDP as the AE provides quality assurance oversight to the project and ensures that all due diligence requirements are undertaken including the review and update of the ESMF-MP. The AE will require the GoS to use the SESP to determine project risks and where required, shall ensure that all documentation relating to potential land acquisition and displacement and resettlement aspects of the project are consistent with the UNDP SES. The AE is responsible for notifying the GCF of any unanticipated risk(s) that may potentially arise from any changes to activity scope and design of the project.

5.6 **The CEO Forum:** This new layer was created to ensure the direct involvement of RIA CEOs at meetings to discuss contentious project issues that need to be resolved quickly. The CEO Forum only meets when required from time to time.

5.7 **The Project Management Unit:** The PMU was established under the MoF where it is currently based. It comprises of the Project Manager and 23 project staff.

5.8 **The Project Manager** implements the project under guidance of the Project Board. The PM’s main responsibility is to ensure that the project produces the results specified in the project document to the required standard and within the specified time and cost. As the head of the project staff, the PM is responsible for overseeing the implementation of the ESMF-MP and required environmental and social risk management actions. All potentially contentious social and environmental safeguards issues, including land matters are to be handled by the PM and relevant project staff.

5.9 **The project staff** have various technical capabilities and skills to assist with the management, coordination and implementation of project activities on the ground. Of importance to the ESMF-MP are the roles of the SGS who is based at MoF and the Project Coordinators (PCs) and Project Officers who are based in the RIA’s. Although their individual roles vary in relation to their specific tasks, they are also responsible in some degree to implementing, monitoring and reporting any
environmental and social impacts and incidents that the GCF-PMU need to be made aware of so that quick and effective resolutions can be undertaken. In this respect, all staff based in the RIAs should be mindful of requirements of the ESMF-MP and that the SGS in particular is informed for collective action.

60. **Safeguards and Gender Specialist** The role of the SGS is key to the effective delivery of the ESMF-MP. Although this position is based in the GCF-PMU, the SGS ensures that all measures identified in the ESMF-MP are complied with, monitored and reported accordingly. The SGS will work closely with the PCs and POs located in the RIAs to oversee the works on the ground from time to time. The SGS is also the contact person for the GCF-VCP Grievance Redress Mechanism (GRM). The GRM is discussed further below.

61. **Technical Advisory Groups:** Two Technical Advisory Groups (TAGs) were established to help support the work of the lead RIAs in progressing specific project activity tasks. The TAGs provide a platform to discuss and resolve specific technical issues and problems faced by stakeholders so that issues can be resolved quickly. It also provides an avenue for stakeholder participation and engagement to encourage transparency and accountability of decisions made regarding the activity. The Infrastructure TAG (I-TAG) includes the stakeholders that focus on infrastructural activities. The I-TAG is chaired by the MWTI. The MNRE-TAG was established in 2018 to coordinate project tasks relating to Activity 2.2. This committee is chaired by the MNRE. The other members of the TAG include, MoF, VCP-PMU, MAF, UNDP, SBEC, MWCS, CSSP, MCIL, ILO, SROS and SUNGO.

62. **Responsible Implementing Agencies:** The RIAs, specifically MNRE, MWTI, MoH, LTA and MoF are tasked with implementing specific project activities and are responsible for ensuring that all activities comply with the ESMF-MP. At various stages of the GCF-VCP, the RIAs are required to manage, supervise and monitor associated contracts, some of which will require the contractors to comply with the ESMF-MP, cause the development of activity specific environmental assessment reports and environmental management plans including compliance with legal requirements such as the obtainment of Development Consents and Building Permits where and when necessary.

63. Through their contractual obligations to the RIAs, contractors such as those involved in construction activities, must ensure to have a site supervisor who will ensure that all environmental and social safeguards measures are implemented and complied with and that any incidents on site are promptly documented and reported to the RIA PCs for urgent attention and resolution. The PCs would in turn ensure to inform the SGS for support and assistance.

64. Further to monitoring the projects compliance with the ESMF-MP, the SGS is encouraged to collaborate with other divisions of the RIAs that have the mandates to legally enforce environmental and social measures. If and when environmental incidents occur that may require legal enforcement, the SGS must notify the relevant authorities for support.

65. For example, the Division of Environment and Conservation of the MNRE have the legal mandate to enforce corrective actions under the Waste Management Act 2010. The PUMA under MWTI have the legal mandate to enforce environmental and planning conditions of granted Development Consents and which may include actions to protect amenities. The Ministry of Commerce, Industry and Labour also has the legal mandate to enforce Occupational Safety and Health measures on contractors. The SGS is encouraged to develop a working relationship with the regulatory
Figure 6 below depicts the latest organizational structure of the GCF-VCP:

5.2 PROJECT DELIVERY AND ADMINISTRATION

66. The MoF through the PMU, PM and the RIAs of MNRE, MWTI, MoH and LTA and other delivery parties such as the contractors and NGOs, will implement the project. In addition, collaboration with the local communities through the Ministry of Women, Community and Social Development is expected by UNDP.

67. In comparison to the initial ESMF-MP, the roles and responsibilities surrounding this updated ESMF-MP have been changed to reflect the current institutional structure of the GCF-VCP. While UNDP and the MNRE were initially seen as the key stakeholders in managing, coordinating, monitoring
and reporting on the ESMF-MP, other key project personnel have now taken up some of those responsibilities.

68. The UNDP and the GCF-VCP PMU are accountable for the implementation of the ESMF-MP through the GCF-VCP SGS, the RIAs of MNRE, MWTI, MoH and LTA and the GCF-VCP project coordinators and officers assigned to the RIA’s. The same personnel will work closely together to track and monitor the implementation of mitigation measures identified in EIAs, EMPs and LARAP prepared for the project. This will ensure that the ESMF-MP is mainstreamed into all project activities and contracts handled by the RIAs such as contractors for construction works.

69. UNDP will oversee the compliance of the ESMF-MP by the GoS through the GCF-PMU, and when circumstances arise during project implementation that may require the re-screening of project risks, the UNDP will arrange for the review and update of the ESMF-MP by the PMU.

70. The UNDP will provide specialist technical advice on environmental and social issues when required from time to time by the GoS through the GCF-PMU particularly with ESMF-MP alignment and compliance with the UNDP SES.

71. The GCF-PM and the SGS are the main points of contact for all environmental and social matters, as well as reporting requirements of the ESMF-MP through the Annual Project Reports.

72. Where the GCF-VCP SGS requires technical environmental advice about project activities, the SGS shall collaborate with the MNRE as they have a wide mandate and policy framework to protect and/or conserve biodiversity (flora and fauna), forestry, water resource protection and land management to name a few. In addition, the SGS should consult with the PUMA regarding compliance matters relating to EIAs and EMPs that are monitored by them including Development Consent conditions.

73. The GCF-VCP procurement staff shall ensure that the ESMF-MP is made part of all tender documentation to ensure that the contractors who are awarded contracts for supervision or construction works are made aware of the ESMF-MP and will in turn absorb the requirements and measures of the ESMF-MP into their CESMP and daily operations.

74. The RIAs responsible for works contracts will ensure that the contractors assign site supervisor(s) on-site to be responsible for the day to day oversight of all works with administrative and environmental records documented and maintained for monitoring. The PCs based in the RIAs will cross check records for environmental and social issues through routine monitoring inspections and monthly audits. Personnel working on the project have accountability for preventing or minimising environmental and social impacts.

75. MoF through the PMU and the SGS is responsible for the revision or update of the ESMF-MP and relevant management plans during the course of the project and ensuring that any material changes to the ESMF will be made in consultation with UNDP.

76. Upon direction of the MoF and the PM, the SGS will work closely with the RIAs to review and update the ESMF-MP on an annual basis or when project activity scope and design may have an impact on the risk categorization of the project. The GCF-PM may procure external services of a Social and Environmental Technical Advisor to assist with the review and update of the ESMF-MP as and when required.
5.3 ENVIRONMENTAL PROCEDURES AND SITE ACTIVITY SPECIFIC WORK PLANS / INSTRUCTIONS

77. Site and activity-specific work plans and instructions that are to be issued by the RIA to the contractors must be consistent with the ESMF-MP, the EIA and EMP, the CESMP and the signed contracts.

5.4 ENVIRONMENTAL INCIDENT REPORTING

78. Any social and environmental incident observed on-site must be reported to the RIA through the PC and the GCF-PMU through the SGS for corrective action(s).

79. The noted / observed incidents must be recorded in an ‘Environment Incident’ log book with images compiled for evidence. Where incidents are deemed significant with potential environmental harm, the SGS must inform the GCF-PM.

80. The contractor must cease work until remediation has been completed as per the approval of the relevant Regulatory authorities and the relevant RIA.

5.5 DAILY AND WEEKLY ENVIRONMENTAL INSPECTION CHECKLISTS

81. A daily social and environmental checklist (including OHS issues) is to be completed at each work site by the relevant site supervisor/designated officer and maintained within a register. A weekly social and environmental checklist is to be completed and will include reference to any issues identified in the daily checklists completed by the designated officer(s). The completed checklist is to be forwarded to the relevant RIA for review and follow-up if any issues are identified.

5.6 CORRECTIVE ACTIONS

82. Any non-conformances to the ESMF-MP are to be noted in weekly social and environmental inspections and logged into the register. Depending on the severity of the non-conformance, the site supervisor/designated officer may specify a corrective action on the weekly site inspection report. The progress of all corrective actions will be tracked using the register. Any non-conformances and the issue of corrective actions are to be advised to the relevant RIA.

5.7 REVIEW AND AUDITING OF THE ESMF-MP

83. Prior to any works taking effect on land, the ESMF-MP must be reviewed and updated and any changes to the ESMF-MP must be made in consultation with UNDP. The RIAs and the SGS are responsible for informing and training (where necessary) site personnel about the updated ESMF-MP.

84. The SGS and Project Coordinators will review the ESMF-MP internally and as part of their monitoring role at least annually to note whether any changes need to be made to the ESMF-MP taking into account the progress of activity implementation. These changes may result from new laws, policies and processes; changes to social and environmental conditions or generally accepted management practices; new or previously unidentified social and environmental risks and changes to scope and design of activities.
5.8 TRAINING OF CONTRACTORS

85. The SGS and project coordinators based in the RIAs are responsible for training the contractor(s) and on site construction personnel on all environmental and social requirements through an induction meeting or workshop organized by the contractor with RIAs to be present for clarification.

6. Stakeholder Engagement and information disclosure process

86. The RIAs will ensure to engage with relevant stakeholders that have interest and or would be affected by project activities to ensure that their views and perceptions are captured so that the scope and design of project activities can be tailored to their needs. Several consultations have already been undertaken and have helped to inform the Project. In addition, the consultations have helped to share information about the purpose and objectives of the GCF-VCP as well as to gather and collate the views of the stakeholders/community members about the project. Also, to ensure project transparency, certain project information must be made available for public viewing during office hours and uploaded onto the GCF-VCP website, RIA websites and through official GCF-VCP social media sites.

87. As part of the stakeholder engagement process, and in relation to Standard 6 on Indigenous People, the Free Prior Informed Consent of affected indigenous people must be obtained and fully documented. Their consent must be sought and granted or withheld in accordance with the local decision-making processes of village communities and or individuals where relevant. An indicative FPIC procedure is described further below in section 6.2.

88. Attached as Annex 2 is the Annual SEP of the project for the year 2020. This Plan is to be updated by the GCF-PMU Communication Officer at the end of 2021 or at the end of each year thereafter. The Plan describes the purpose, timeframe, responsible agencies, participants and the expected deliverables from the consultations and is a component of the CSEPAP 20212 which is attached as Annex 3.

6.1 GENERAL COMMUNICATIONS

89. The UNDP and the GCF-VCP PMU through the communication officers will develop and release updates on the project on a regular basis to provide interested stakeholders with information on project status. Further guidance on communication methods of the GCF-VCP can be found in the Communications and Knowledge Management Strategy 2019. Updates may be via a range of media e.g. print, radio, social media or formal reports. Information provided must include contact details with all material to be published in Samoan and English as appropriate.

6.2 STAKEHOLDER CONSULTATION AND INFORMATION DISCLOSURE

90. Since the design inception of the project, extensive stakeholder engagement and consultations have been undertaken with the main objectives being to (i) share information about proposed project activities; (ii) gather feedback from stakeholders and community members about the activities and their potential impacts on them, (iii) gain knowledge from stakeholders and community members to help influence scope and design of the activities, and to (iii) encourage project ownership through active participation in project implementation to ensure a close working relationship among stakeholders.
91. Stakeholder engagement / consultations so far have included face to face presentations by the delivery organisations to the community members with feedback received, recorded and responded to by the delivery organisations during the consultations. This ensures transparency in information disclosure. The following guidelines are included in the Annual SEP 2020 as a guidance to delivery organisations when preparing for consultations with communities.

- Be gender and age responsive, culturally sensitive and appropriate, non-discriminatory and inclusive.
- Be free of external manipulation, interference, coercion and intimidation.
- Ensure timely issuance of public notices regarding consultation logistics to ensure active participation of stakeholders and community members with various media platforms used for dissemination of notices.
- Ensure participation of the key project implementing agencies at the consultations so that they can respond to any queries and issues raised by the public. Important to include the MWCS at all consultations and public engagements to comply with local protocols with village councils and village mayors.
- Prior and timely disclosure of project information to be in form and language that is readily understandable and tailored to targeted stakeholder groups including presentations prepared by RIAs, project staff and / or project TAs.
- Encourage and empower various groups to respond to project activities.
- Engagements to be well documented and reported on to ensure records of discussions inform project activities including any signed documents such as prior informed consents or MoAs.
- Encourage continued feedback by providing channels for open lines of communication through phone, emails, face to face meetings and website.
- Inform community about places to view project documents during office hours or after hours some of which may include EIA reports, EMPs, the LARAP or operational manual.
- Implement awareness raising activities through various media platforms to increase project visibility.

92. If at any time, a community issue arises and the matter is referred to any project personnel, the following information shall be recorded:

a. time, date and nature of enquiry, complaint or concern;

b. type of communication (eg telephone, letter, personal contact);

c. name, contact address and contact number;

d. response and investigation undertaken as a result of the enquiry, complaint or concern; and

e. actions taken and name of the person taking action.

93. Some enquiries, complaints and concerns may require an extended period to address. The complainant(s) will be kept informed of progress towards rectifying their concerns. All enquiries,
complaints and concerns will be investigated and a response given to the complainant in a timely manner. The GCF-VCP SGS will be responsible for undertaking a review of all enquiries, complaints and concerns and ensuring progress towards the resolution of each matter as per approved GRM procedures.

94. The Free Prior Informed Consent process depicted in Figure 7 below has been tailored to the Samoan context. This process will be used as and when FPIC is required.

Figure 7: FPIC process

95. As outlined above, the relevant RIA will contact the targeted stakeholders including where relevant the Pulenuu, Sui o Nuu, Village Council and affected individuals with opportunity to also include representatives from women’s groups, youth groups and those with disabilities to inform them of project objectives, activities and expected outcomes. Public forums, meetings or workshops are potential methods of engagement that can be carried out where and when convenient for the targeted audience. The engagement activity will encourage participants to share their visions, suggestions, opinions, advice and proposals as well as to validate project information so that it can be adjusted to the needs of affected people, especially the indigenous people. Additional engagement activities can be carried out as needed to further clarify and confirm potential issues of concern so that agreements between parties can be reached. Such agreements can include an Affected Persons Form and/or Memorandum of Understanding to show mutual consensus between parties on commitments and actions going forward. Without the consensus or consent of indigenous people / individuals, project activities cannot proceed. As part of implementation, it is crucial to periodically monitor and evaluate compliance with any signed agreements. All processes involving indigenous people will be duly recorded and documented as a safeguards requirement and also for knowledge management purposes.

96. The documentation of engagement activities should include the following:
97. Other information that must be recorded, updated and made available includes:

- the manner in which consent (or withholding of consent) is recorded
- any instances of previously given consent being withdrawn, and
- any grievances raised and subsequent action taken by project management and other relevant stakeholders.

98. For more detailed information on the FPIC, refer to Annex 3.

### 7. GRIEVANCE REDRESS MECHANISM

#### 7.1 PROJECT-LEVEL GRM

99. To ensure a consistent and pragmatic approach is maintained throughout the Project with regards to complaints about the GCF-VCP, a Project-level Grievance Redress Mechanism (PL-GRM) was developed to guide the PMU and the RIAs on how to resolve contentious social issues in a consistent manner. The PL-GRM was developed in line with the requirements of the GCF-VCP ESMF-MP that was approved in 2017 by the GCF. The PL-GRM is attached as Annex 3.

100. The PL-GRM outlines procedures to hear, respond to, mediate and resolve any possible conflicts, complaints and/or objections relating to project activities and interventions of the GCF-VCP. It aims to resolve complaints and grievances on terms that are mutually acceptable to all concerned parties with the ultimate goal of progressing activities of the GCF-VCP until completion in 2023 for the benefit of the whole Vaisigano Catchment community.

101. The PL-GRM also helps guide the work of all project stakeholders such as the GCF-VCP PMU, the RIAs, and the contractors in dealing with complaints and concerns in a respectful, responsible and efficient and timely manner so that issues can be resolved quickly and works can progress accordingly. It is in the best interest of the GCF-VCP to prioritise all complaints received and to respond to them promptly.

102. The PL-GRM was developed to enhance transparency in the handling of public concerns and also for accountability purposes to ensure that the RIAs and contractors abide by laws and policies governing the GCF-VCP.

103. The PL-GRM will also be incorporated into other project documents to ensure that the process is streamlined for efficient implementation. For example, the PL-GRM will be included in any LARAP developed as part of the project.
104. The GCF-VCP SGS will administer the PL-GRM through effective coordination of the mechanism with the RIAs. The mechanism also includes a PL-GRM Committee that comprises of 10 members, with the MoF as chair, the GCF-VCP PMU as the secretariat and representatives from the RIAs and external partners. The diagram below depicts the steps of the PL-GRM with an opportunity to further resolve a grievance through the Court system.

Figure 8: Procedural steps of the PL-GRM
7.2 UNDP SRM and SECU

105. In addition to the project-level grievance redress mechanism, complainants have the option to access UNDP’s Accountability Mechanism, with both compliance and grievance functions. The Social and Environmental Compliance Unit investigates allegations that UNDP’s Standards, screening procedure or other UNDP social and environmental commitments are not being implemented adequately, and that harm may result to people or the environment. The Social and Environmental Compliance Unit is housed in the Office of Audit and Investigations, and managed by a Lead Compliance Officer. A compliance review is available to any community or individual with concerns about the impacts of a UNDP programme or project. The Social and Environmental Compliance Unit is mandated to independently and impartially investigate valid requests from locally impacted people, and to report its findings and recommendations publicly.

106. The Stakeholder Response Mechanism offers locally affected people an opportunity to work with other stakeholders to resolve concerns, complaints and/or grievances about the social and environmental impacts of a UNDP project. The Stakeholder Response Mechanism is intended to supplement the proactive stakeholder engagement that is required of UNDP and its Implementing Partners throughout the project cycle. Communities and individuals may request a Stakeholder Response Mechanism process when they have used standard channels for project management and quality assurance, and are not satisfied with the response (in this case the project level grievance redress mechanism). When a valid Stakeholder Response Mechanism request is submitted, UNDP focal points at country, regional and headquarters levels will work with concerned stakeholders and Implementing Partners to address and resolve the concerns. Visit www.undp.org/secu-srm for more details.

8. Monitoring and Evaluation Arrangements

107. This section defines the monitoring and evaluation arrangements of the GCF-VCP to monitor the implementation of the ESMF-MP as well as the employment of site specific social and environmental management plans and measures.

108. The GCF-VCP PMU SGS will monitor the implementation and compliance of the updated ESMF-MP together with GCF-VCP project staff that have been assigned to the RIAs.

109. Monitoring and reporting will:
- Track progress of ESMF-MP implementation;
- Evaluate implementation of mitigation measures identified in the ESMF-MP, EIA reports and EMPs including specific targeted assessments such as a land acquisition action plan;
- Track complaints and grievances to ensure they have been resolved;
- Track progress of any corrective actions to be implemented by contractors;
- Develop monitoring reports to capture environmental and social issues ensuring inclusion of disaggregated data by categories of beneficiaries and affected groups;
- Evaluate knowledge, good practices for lessons learnt;
- Inform the Annual reports;
Updated Environmental and Social Management Framework and Management Plan 2021
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- Inform annual compliance reviews of the ESMF-MP;

**9. KEY ENVIRONMENTAL AND SOCIAL INDICATORS**

110. This section identifies the key environmental and social indicators identified for the project and outlines respective management objectives, potential impacts, control activities and the environmental performance criteria against which these indicators will be judged (i.e. audited). It further addresses the need for monitoring and reporting of the project’s environmental performance with the aim of communicating the success and failures of the control procedures, distinguish issues that require rectification and identify measures that will allow continuous improvement of the processes by which the activities are managed.

111. While separate project activities may require further environmental scrutiny through their associated preliminary environmental assessment reports and environmental management plans, this section provides the more general social and environmental mitigation measures that are to be considered and complied with by all project activities of the GCF-VCP. These mitigation measures were included in the initial ESMF-MP and because they are still relevant up to now for all project activities, the measures are the same for this updated ESMF-MP.

112. To date under the GCF-VCP, 3 project activities have developed site specific Preliminary Environmental Assessment Reports (PEAR) and / or Environmental Management Plans (EMP). These should be read in conjunction with this section when operations start. These are listed below:

- Activity 2.1 Channelization of the Vaisigano streambed (Segment 3) - PEAR and EMP
- Activity 2.3 Upgrade of Lelata bridge - PEAR and EMP
- Activity 3.2 Upgrade of drainage systems - EMP

In addition, two other EIA reports will be submitted in due time after completion of public consultations and design plans of the flood levees along Segments 2 and 4 of the Vaisigano River.

113. There are 10 targeted areas that the GCF-VCP will commit to manage, protect and monitor to ensure that they are not adversely affected by project activities. The mitigation measures will address the following 10 targeted areas.

1. Water Quality
2. Erosion, Drainage and Sediments
3. Noise and Vibration
4. Air Quality
5. Flora and Fauna
6. Waste Management
7. Chemical and Fuel Management
8. Social Management
9. Archaeological and Cultural Heritage
10. Emergency Management

114. The targeted areas are presented in a matrix format below. The matrices provides control measures and monitoring and reporting responsibilities.
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9.1 WATER QUALITY

The Vaisigano River flows north through Apia and drains an area of around 34 km$^2$. The river is the largest river on Upolu. The Vaisigano River is one of the main sources of water in Apia, and also feeds two hydroelectric stations, which supply the bulk of the city’s electricity. The floodplain comprises a mixture of businesses and nine village communities. The area is prone to flooding whenever there is an overflow in Vaisigano River as a result of intense rainfall and as such, is a disturbed environment. Further, the coastal parts of the area were originally wetland and coastal marshlands that have been reclaimed. Approximately 80 per cent of the region is residential, although it also comprises a number of small hydro-electric dam, hotels, schools and businesses.

Samoa’s climate is characterised by high rainfall and humidity, near-uniform temperatures throughout the year, the dominance of south-easterly trade winds and the occurrence of tropical cyclones. Samoa has a wet tropical climate with temperatures ranging between 17°C and 34°C and an average temperature of 26.5°C. Samoa’s climate is normally driven by the South Pacific Convergence Zone and El Nino Southern Oscillation (ENSO). ENSO is a natural phenomenon that occurs on a global scale but mainly affects countries in the Pacific Ocean. ENSO has two phases - La Nina and El Nino - but also a neutral phase between the two. During a La Nina year, Samoa experiences flooding in downtown Apia as a result of extreme rainfall. Samoa is also vulnerable to anomalously long dry spells that coincide with El Niño years. Drought and forest fires are most prevalent during the dry season in the northwest division of Savaii, due to the coinciding effects of El Nino such as low rainfall and a prolonged dry season.

Specific water quality issues in the Apia catchments have been identified in the Watershed Management Plans made in 2012 under the Water Resources Management Act 2008 for each of the catchments. They include:

- a. Soil erosion resulting from heavy rain exacerbated by removal of forest cover;
- b. Mass movements – landslides on unstable slopes;
- c. Degradation of forest cover for farming, and subsequent invasive plants;
- d. Waste dumping;
- e. Farm effluents (cattle);
- f. Agricultural chemicals;
- g. Hospital waste discharge;
- h. Septic leachate;
- i. Upland urbanisation increasing pressure on water resource catchments; and
- j. Community behaviour and land tenure

By undertaking some of the works proposed as part of this project, the project will actually improve water quality in the Vaisigano River. No baseline data has been collected at the site; however, prior to the commencement of works, baseline data will be collected to develop a suitable monitoring regime.
Performance Criteria

The following performance criteria are aimed to minimise any adverse effects on water quality:

a. no significant decrease in water quality as a result of construction and operational activities;

b. no significant decrease in the quality and quantity of surface and/or groundwater as a result of construction and operational activities in proximity to the projects;

c. water quality shall conform to any approval conditions stipulated by UNDP, MNRE and/or other government departments, or in the absence of such conditions follow a ‘no worsening’ methodology;

d. no offsite impact will occur other than through the release of brine into the environment; and

e. effective implementation of site-specific Erosion, Drainage and Sediment Control Plan (EDSCP) and an Acid Sulphate Action Plan.

By following the management measures set out in the ESMF-MP, the construction of river works, bridges and drainage and revegetation upstream will not have a significant impact on water quality across the broader area.

Monitoring

A standardised water quality monitoring program has been developed for the project. The program is subject to review and update at least every two months from the date of issue. The site supervisor will be required to conduct a visual inspection and take water samples as appropriate for nitrates, phosphates, faecal coliforms, heavy metals, turbidity and oil/grease within or adjacent to their work area as a part of the daily site inspection checklist.

Reporting

All water quality monitoring results and/or incidents will be tabulated and reported as outlined in the ESMF and MP. The RIA, PUMA, MNRE and the GCF-PMU must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to water quality is exceeded.
1. **WATER QUALITY**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Control Activity (and Source)</th>
<th>Action Timing</th>
<th>Responsibility</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
</table>
| W1: Elevated suspended solids, nitrates, phosphates, acid sulphates, faecal coliforms, heavy metals, silt content and turbidity in surface/groundwater systems. | W1.1: Develop and implement a site specific Erosion, Drainage and Sediment Control Plan (EDSCP) to address drainage control, sediment and erosion controls and stockpiling of materials including soil during construction of all components of the projects. EDSCP measures to be inspected regularly to ensure all devices are functioning effectively.  
W1.2 Develop and implement an Acid Sulphate Action Plan to address any potential release of acid sulphates into the river.  
W1.3: Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refuelling to be undertaken in areas away from aquatic systems.  
W1.4: Conduct regular surface and groundwater quality monitoring in location where the groundwater is likely to be impacted including assessing the changes to groundwater quality. Parameters to be monitored could include *E.coli*, pH, total suspended solids, Residual Chlorine, Nitrate, Nitrite, Ammonia, potassium, surfactants, conductivity, soap, oils and grease and waxes, Phenolic compounds as phenol, heavy metals and acute toxicity.  
W1.5: Schedule works in stages to ensure that disturbed areas are revegetated and stabilised progressively and as soon as practicable after completion of works.  
W1.6: Construction materials will not be stockpiled in proximity to aquatic environment that may allow for release into the environment. Construction equipment will be removed from in proximity to the aquatic environment at the end of each working day or if heavy rainfall is predicted. | Pre Earthworks  
Pre-Earthworks  
Entire construction phase  
Entire construction phase  
Pre Earthworks - Works not be Undertaken during wet season | Site Supervisor  
Site Supervisor  
All Personnel  
Site Supervisor | Initial set up and then as required with reporting to MNRE and UNDP  
Initial set up and then as required with reporting to MNRE and UNDP  
Weekly with reporting to MNRE and UNDP  
Weekly and as required with reporting to MNRE and UNDP | Maintain records  
Maintain daily records |
| W2: Eutrophication of surrounding aquatic environments and impacts from elevated nutrient levels. | W2.1 Minimise the release of clays and very fine silts into the aquatic environment through the installation of sediment basins, rock checks and sediment fences in appropriate places as outlined in the EDSCPs. Sediment control structures to be inspected regularly.  
W2.2 Disturbance of vegetation and drainage lines to be limited to that required for construction works. | Entire construction phase | All Personnel | Weekly with reporting to MNRE and UNDP  
Weekly with reporting to MNRE and UNDP |
<table>
<thead>
<tr>
<th></th>
<th>W2.3 Manage the application of fertilisers and other chemicals (if required during rehabilitation / revegetation of any site) to ensure that over application does not occur.</th>
<th>Post Construction</th>
<th>Site Supervisor</th>
<th>Maintain records</th>
</tr>
</thead>
<tbody>
<tr>
<td>W3: Increase of gross pollutants, hydrocarbons, metals and other chemical pollutants including residue from the construction works into the groundwater and/or surface water environment.</td>
<td>W3.1: Reuse suitable water runoff from site to supplement construction water supply.</td>
<td>All phases</td>
<td>All Personnel</td>
<td>Weekly with reporting to MNRE and UNDP</td>
</tr>
<tr>
<td></td>
<td>W3.2: Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should: 1. Have compacted impermeable bases; and 2. Surrounded by a bund to contain any spillage.</td>
<td>All phases</td>
<td>All Personnel</td>
<td>Weekly with reporting to MNRE and UNDP</td>
</tr>
<tr>
<td></td>
<td>W3.3: Check all vehicles, equipment and material storage areas daily for possible fuel, oil and chemical leaks. Undertake refuelling at designated places away from water systems.</td>
<td>All phases</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>W3.4: Rubbish and waste materials to be placed in suitable facilities to ensure that they do not enter aquatic environments. Ensure all absorbent material is placed in contaminant bags prior to removal.</td>
<td>All phases</td>
<td>All Personnel</td>
<td>Weekly reporting to MNRE and UNDP</td>
</tr>
<tr>
<td></td>
<td>W3.5: Minimise the use of herbicides and use only biodegradable herbicides that have minimal impact on water quality and fauna. Use only as per directions.</td>
<td>All phases</td>
<td>All personnel</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>W3.6: Ensure any release of waste from the drainage works is managed so as not to cause any adverse impacts</td>
<td>All phases</td>
<td>All Personnel</td>
<td>Weekly reporting to MNRE and UNDP</td>
</tr>
</tbody>
</table>
9.2 EROSION, DRAINAGE AND SEDIMENT CONTROL

All of the Samoan Islands are tectonically and volcanically very active, having been formed very recently (in geological time). Further volcanic activity cannot be ruled out, but is most likely to occur well to the east of Apia, if/when it occurs. Fresh unweathered basalt is abundantly available for building stone. Otherwise there are few, if any, rock or mineral resources to develop. The islands may be thought of as barely emergent seamounts, rising some 4.5km above the surrounding abyssal plain. Upolu’s coastline is about 60% protected by fringing coral reefs. The continuing viability of these fringing reefs is under threat from climate change and other factors including land based pollution and sediment discharge.

Activities that could result in erosion, drainage and sediment impacts include
   a. Excavation of the river bank in preparation for the construction of infrastructure;
   b. Soil disturbance during the revegetation activities especially if undertaken in wet periods;
   c. Clearing the river of weeds and debris; and
   d. Sediment movement during drainage works.

Soil erosion also depends on several other parameters such as type of soil, slope, vegetation and the nature of topography. The loss of soil stability and soil erosion can take place due to the removal of vegetation cover, and numerous construction activities. It can cause the loss of soil fertility and induce slope instability. No new access roads are proposed nor is it proposed to alter natural flow paths in the area, although temporary works could result in blockage or alteration of natural flow paths. Effective and efficient mitigation measures can not only reduce, but could improve the conditions over the existing conditions. Soil productivity could decline due to erosion unless steps are taken to control it. Importantly, all sediment removed from the river and drainage work will be assessed, and where practicable, will be reused and placed on agricultural lands or other beneficial reuse options.

As the geotechnical surveys that have been undertaken have not assessed the substrate for the potential for acid sulphate soils (ASS) and/or potential acid sulphate soils (PASS), it is therefore assumed they may occur as would normally be observed in areas of mangrove (mangroves were observed in the overflow drainage line of the Vaisigano River). Deposits of ASS are commonly found less than five metres ASL, particularly in low-lying coastal areas which is where all the projects will occur. Mangroves, salt marshes, floodplains, swamps, wetlands, estuaries and brackish or tidal lakes are ideal areas for ASS formation therefore there is potential for it to be observed in the project locations.

Any sediment movement may also expose ASS. Deposits of ASS are commonly found less than five meters above sea level, particularly in low-lying coastal areas which is where a number of the project’s activities will occur. Mangroves, salt marshes, floodplains, swamps, wetlands, estuaries and brackish or tidal lakes are ideal areas for ASS formation and therefore there is the potential for it to be observed in the project’s location. Mitigative controls could potentially be required for the management of ASS and/or PASS during any excavation works due to their locations close to coastal areas. ASS are naturally occurring soils, sediments or organic substrates that are formed under waterlogged conditions. Deposits of ASS are commonly found in less than five meters ASL, particularly in low-lying coastal areas. The presence of ASS may not be obvious on the soil surface as they are often buried beneath layers of more recently deposited soils and sediments of alluvial or aeolian origin. These soils contain iron sulfide minerals (predominantly as the mineral pyrite) or their oxidation products. In an undisturbed state below the water table, ASS are benign. However if the soils are drained, excavated or exposed to air by a lowering of the water table, the sulfides react with
oxygen to form sulfuric acid. The release of this sulfuric acid from the soil can in turn release iron, aluminium and other heavy metals (particularly arsenic) within the soil. Once mobilised, the acid and metals can create a variety of adverse impacts including killing vegetation, seeping into and acidifying groundwater and water bodies, killing fish and other aquatic organisms and degrading concrete and steel structures to the point of failure.

Prior to any excavation, sediments should be tested for their presence of ASS or PASS. Sampling should be undertaken consistent with that proposed by the Queensland Acid Sulphate Soils Investigation Team as described in Ahern et al (2014) and laboratory analysis consistent with Ahern et al (2004). If the analysis proves positive, the sediment can be treated by a range of techniques including but not limited to liming the sediment. The contractor should refer to management measures provided by for example by Dear et al (2002) to mitigate the impacts. Of critical importance for ground water quality especially as this is the source of potable water in many areas, one of the most significant impacts is via infiltration into the water table from an ASS stockpiling/treatment area. To reduce this impact, a compacted clay liner should be developed including where possible limed clay although this may reduce the efficiency of compaction and hence increase the permeability of the liner. Every effort should be made to ensure there is no direct or residual impact following treatment.

**Performance Criteria**

The following performance criteria are set for the construction of the projects:

a. no build-up of sediment in the aquatic environments and/or surface and/or groundwater as a result of construction and operation activities;

b. no degradation of water quality on or off site of all projects;

c. all water exiting the project site and/or into groundwater systems is to have passed through best practice erosion, drainage and sediment controls;

d. preferably no disturbance of ASS or PASS; however if there is disturbance, compliance with the management measures discussed above; and

e. effective implementation of site-specific EDSCP.

By following the management measures set out in the ESMF and MP, construction and operation activities of the projects will not have a significant impact as a result of sedimentation across the broader area.

**Monitoring**

A standardised sediment control monitoring program has been developed for the projects. The program is subject to review and update at least every two months from the date of issue. The site supervisor will be required to:

a. conduct site inspections on a weekly basis or after rainfall events exceeding 20mm in a 24 hour period;

b. develop a site-specific checklist to document non-conformances to this ESMF and MP or any applicable EDSCPs; and

c. communicate the results of inspections and/or water quality testing to the Site Supervisor and ensure that any issues associated with control failures are rapidly rectified and processes are put in place to ensure that similar failures are not repeated.

It is the responsibility of the site supervisor to:

a. conduct daily inspections of EDS control measures as part of the Daily Check Procedure; and
b. consult MNRE and UNDP staff when a non-conformance is suspected and amend accordingly.

**Reporting**

All sediment and erosion control monitoring results and/or incidents will be tabulated and reported as outlined in the ESMF and MP. The RIA, PUMA, MNRE and the GCF-PMU must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to erosion and sediment control is exceeded.

<table>
<thead>
<tr>
<th>2. EROSION, DRAINAGE, SEDIMENT CONTROL MEASURES</th>
<th>Control Activity (and Source)</th>
<th>Action Timing</th>
<th>Responsibility</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1: Loss of soil material and sedimentation to the surface and/or groundwater systems from site due to earthwork activities</td>
<td>E1.1: Develop and implement an EDSCP for any surface works, embankments and excavation work, water crossings and stormwater pathways.</td>
<td>Entire construction phase</td>
<td>All Personnel</td>
<td>Maintain records</td>
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<td></td>
<td>E1.2: Ensure that erosion and sediment control devices are installed, inspected and maintained as required.</td>
<td>Entire construction phase</td>
<td>All Personnel</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.3: Schedule/stage works to minimise cleared areas and exposed soils at all times.</td>
<td>Pre and during construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.4: Incorporate the design and location of temporary and permanent EDSC measures for all exposed areas and drainage lines. These shall be implemented prior to pre-construction activities and shall remain onsite during work.</td>
<td>Pre and during construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.5: Schedule/stage proposed works to ensure that major vegetation disturbance and earthworks are carried out during periods of lower rainfall and wind speeds.</td>
<td>Pre and during construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
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<td></td>
<td>E1.6: Strip and stockpile topsoil for use during revegetation and/or place removed soils back on to agricultural lands or other beneficial reuse options.</td>
<td>Pre and during construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.7: Schedule/stage works to minimise the duration of stockpiling topsoil material. Vegetate stockpiles if storage required for long periods.</td>
<td>During construction</td>
<td>All Personnel</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.8: Locate stockpile areas away from drainage pathways, waterways and sensitive locations.</td>
<td>Pre and during construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.9: Design stormwater management measures to reduce flow velocities and avoid concentrating runoff.</td>
<td>Pre and during construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
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<td></td>
<td>E1.10: Include check dams in drainage lines where necessary to reduce flow velocities and provide some filtration of sediment. Regularly inspect and maintain check dams.</td>
<td>Pre and during construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.11: Mulching shall be used as a form of erosion and sediment control and where used on any slopes (dependent on site selection), include extra sediment fencing during high rainfall.</td>
<td>During construction</td>
<td>All Personnel</td>
<td>Maintain records</td>
</tr>
<tr>
<td>Sedimentation</td>
<td>E1.12: Bunding shall be used either within watercourses or around sensitive / dangerous goods as necessary.</td>
<td>During construction</td>
<td>All Personnel</td>
<td>Maintain records</td>
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<td>E1.13: Grassed buffer strips shall be incorporated where necessary during construction to reduce water velocity.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.14: Silt curtain to be installed to protect from increased sediment loads.</td>
<td>During construction</td>
<td>Contractors</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.15: Excess sediment in all erosion and sediment control structures (eg. sediment basins, check dams) shall be removed when necessary to allow for adequate holding capacity.</td>
<td>During construction</td>
<td>Contractors</td>
<td>Maintain records</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soil Contamination</th>
<th>E2.1: If contamination is uncovered or suspected (outside of the project footprints), undertake a Stage 1 preliminary site contamination investigation. The contractor should cease work if previously unidentified contamination is encountered and activate management procedures and obtain advice/permits/approval (as required).</th>
<th>Entire construction phase</th>
<th>All Personnel</th>
<th>Daily and maintain records</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E2.2: Adherence to best practice for the removal and disposal of contaminated soil/ material from site (if required), including contaminated soil within the project footprints.</td>
<td>Entire construction phase</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
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<td></td>
<td>E2.3: Drainage control measures to ensure runoff does not contact contaminated areas (including contaminated material within the project footprints) and is directed/diverted to stable areas for release.</td>
<td>Entire construction phase</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>E2.4: Avoid importing fill that may result in site contamination and lacks accompanying certification/documentation. Where fill is not available through on site cut, it must be tested in accordance with geotechnical specifications.</td>
<td>Entire construction phase</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>E2.5: Ensure no impact of ASS/PASS on water quality and groundwater systems. Where observed, ensure compliance with best practice for the sampling, analysis and handing of all ASS/PASS.</td>
<td>Entire construction phase</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
</tbody>
</table>
9.3 Noise and Vibration

All construction and operation activities have the potential to cause noise nuisance. Vibration disturbance to nearby residents and sensitive habitats is likely to be caused through the use of vibrating equipment. Blasting is not required to be undertaken as part of this project. While there is no specific noise and vibration data for Apia, it would be expected that it would have low to medium levels of noise pollution being a larger urban centre in the Pacific. It is assumed that there are no sensitive receptors in proximity to the projects although it is noted that there are a number of properties in close proximity to the river bank construction, bridge upgrade and drainage works that may be impacted by noise and vibration. Contractors involved in construction and rehabilitation activities should be familiar with methods of controlling noisy machines and alternative construction procedures as contained within specific Samoan legislation or in its absence, international good practice may be used if the legislation has not been enacted. The detail, typical equipment sound power levels, provides advice on project supervision and gives guidance noise reduction. Potential noise sources during construction may include:

- a. excavation equipment for the removal of sediment and re-design of the river banks for construction;
- b. excavation and other equipment involved in the construction of the bridge;
- c. excavation and other equipment involved in the drainage works;
- d. delivery vehicles;
- e. pumps; and
- f. power tools and compressors.

Performance Criteria:

The following performance criteria are set for the construction of the projects:

a. noise from construction and operational activities must not cause an environmental nuisance at any noise sensitive place e.g. be undertaken between 7am and 5pm Monday to Friday and 7am-3pm on a Saturday (no work to be undertaken on a Sunday);

b. undertake measures at all times to assist in minimising the noise associated with construction activities;

c. no damage to off-site property caused by vibration from construction and operation activities; and

d. corrective action to respond to complaints is to occur within 48 hours.

Monitoring:

A standardised noise monitoring program has been developed for the projects. The program is subject to review and update at least every two months from the date of issue. Importantly, the site supervisor will:

a. ensure equipment and machinery is regularly maintained and appropriately operated

b. carry out potentially noisy construction activities during daylight hours only; eg 7am and 5pm; and 7am-3pm on a Saturday.
All noise monitoring results and/or incidents will be tabulated and reported as outlined in the ESMF-MP. The PUMA and the RIA must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to noise has been confirmed.

### 3. NOISE AND VIBRATIONS

<table>
<thead>
<tr>
<th>Issue</th>
<th>Control Activity (and source)</th>
<th>Action Timing</th>
<th>Responsibility</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1: Increased noise levels</td>
<td>N1.1: Select plant and equipment and specific design work practices to ensure that noise emissions are minimised during construction and operation including all pumping equipment.</td>
<td>All phases</td>
<td>Contractor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>N1.2: Specific noise reduction devices such as silencers, mufflers and/or acoustic rock breaking heads shall be installed as appropriate to site plant and equipment.</td>
<td>Pre and during construction</td>
<td>Contractor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>N1.3 Minimise the need for and limit the emissions as far as practicable if noise generating construction works are to be carried out outside of the hours: 7am-5pm (Mon - Fri).</td>
<td>Construction phase</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>N1.4: Consultation with nearby residents in advance of construction activities particularly if noise generating construction activities are to be carried out outside of the hours: 7am-5pm (Mon - Fri) and 7am-3pm (Saturday).</td>
<td>Construction phase</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>N1.5 The use of substitution control strategies shall be implemented, whereby excessive noise generating equipment items onsite are replaced with other alternatives.</td>
<td>Construction phase</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
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<td></td>
<td>N1.6 Provide temporary construction noise barriers in the form of solid hoardings where there may be an impact on specific residents.</td>
<td>Construction phase</td>
<td>Site Supervisor</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>N1.7 All incidents complaints and non-compliances related to noise shall be reported in accordance with the site incident reporting procedures and summarised in the register.</td>
<td>Construction phase</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>N1.8 The contractor should conduct employee and operator training to improve awareness of the need to minimise excessive noise in work practices through implementation of measures.</td>
<td>Pre and during construction</td>
<td>Contractor</td>
<td>Maintain records</td>
</tr>
<tr>
<td>N2. Vibration due to construction</td>
<td>N2.1: Identify properties, structures and habitat locations that will be sensitive to vibration impacts resulting from construction and operation of the project.</td>
<td>Pre and during construction</td>
<td>Contractor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>N2.2: Design to give due regard to temporary and permanent mitigation measures for noise and vibration from construction and operational vibration impacts.</td>
<td>Preconstruction</td>
<td>Contractor</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>N2.3: All incidents, complaints and con-compliances related to vibration shall be reported in accordance with the site incident reporting procedures and summarised in the register.</td>
<td>Construction phase</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
</tbody>
</table>
9.4 **AIR QUALITY**

While there is no specific air quality data for Apia, it would be expected that it would have low to medium levels of air pollution being a larger urban centre in the Pacific. All construction and rehabilitation activities have the potential to cause air quality nuisance. Vibration disturbance to nearby residents is likely to be caused through the use of construction traffic and excavators etc. Blasting is not required to be undertaken as part of this project. Contractors involved in construction and operation activities should be familiar with methods minimising the impacts of deleterious air quality and alternative construction procedures as contained in Samoa legislation.

**Performance Criteria**

The following performance criteria are set for the construction of the projects:

a. release of dust/particle matter must not cause an environmental nuisance;

b. undertake measures at all times to assist in minimising the air quality impacts associated with construction and operation activities; and

c. corrective action to respond to complaints is to occur within 48 hours.

**Monitoring**

A standardised air monitoring program has been developed for the projects. The program is subject to review and update at least every two months from the date of issue. Importantly, the site supervisor will:

a. ensure all stockpiles are covered so as to not allow dust to generate; and

b. the requirement for dust suppression will be visually observed by all personnel daily and by the RIA and the GCF-PMU when undertaking routine site inspections (minimum frequency of once per week).

**Reporting**

All air quality monitoring results and/or incidents will be tabulated and reported as outlined in the ESMF and MP. The RIA, PUMA, MNRE and the GCF-PMU must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to air quality is exceeded.
### 4. AIR QUALITY

<table>
<thead>
<tr>
<th>Issue</th>
<th>Control Activity (and Source)</th>
<th>Action Timing</th>
<th>Responsibility</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1: Increase in dust levels at sensitive locations</td>
<td><strong>A1.1:</strong> Implement effective dust management measures in all areas during design, construction and operation.</td>
<td>Pre and during construction</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td><strong>A1.2:</strong> Install dust gauges at locations identified for construction lay down and stockpiling within the project footprints.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and Weekly Reports</td>
</tr>
<tr>
<td></td>
<td><strong>A1.3:</strong> Manage dust/particulate matter generating activities to ensure that emissions do not cause an environmental nuisance at any sensitive locations</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain Records</td>
</tr>
<tr>
<td></td>
<td><strong>A1.4:</strong> Construction activities should minimising risks associated with climatic events</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain Records</td>
</tr>
<tr>
<td></td>
<td><strong>A1.5:</strong> Implement scheduling/staging of proposed works to ensure major vegetation disturbance and earthworks are minimised.</td>
<td>During construction</td>
<td>Contractor</td>
<td>Daily and maintain Records</td>
</tr>
<tr>
<td></td>
<td><strong>A1.6:</strong> Ensure that materials to be stockpiled onsite are not ordered and/or purchased until they are required for works.</td>
<td>During construction</td>
<td>Contractor</td>
<td>Daily and maintain Records</td>
</tr>
<tr>
<td></td>
<td><strong>A1.7:</strong> Locate material stockpile areas as far as practicable from sensitive receptors.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain Records</td>
</tr>
<tr>
<td></td>
<td><strong>A1.8:</strong> Source sufficient water of a suitable quality for dust suppression activities complying with any water restrictions.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain Records</td>
</tr>
<tr>
<td></td>
<td><strong>A1.9:</strong> Schedule revegetation activities to ensure optimum survival of vegetation species.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
</tbody>
</table>
## A1.10: Ensure an air quality management plan is developed and implemented.

<table>
<thead>
<tr>
<th>Action</th>
<th>Pre and during construction</th>
<th>Contractor</th>
<th>Maintain records</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1.11: Rubbish skips and receptacles should be covered and located as far as practicable from sensitive locations.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Maintain records</td>
</tr>
<tr>
<td>A1.12: Restrict speeds on haul roads and access tracks.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain Records</td>
</tr>
<tr>
<td>A1.13: Cover loads of haul trucks and equipment and plant when not in use and in transit.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain Records</td>
</tr>
</tbody>
</table>

## A2. Increase in vehicle emissions (including odorus and fumes)

| A2.1 Ensure construction vehicles are switched off when not in use. | During construction | Site Supervisor | Daily and maintain Records |
| A2.2 Ensure only vehicles required to undertake works are operated onsite. | During construction | Site Supervisor | Daily and maintain Records |
| A2.3 Ensure all construction vehicles, plant and machinery are maintained and operated in accordance with design standards and specifications. | During construction | Site Supervisor | Daily and maintain Records |
| A2.4 Develop and implement an induction program for all site personnel, which includes as a minimum an outline of the minimum requirements for environmental management relating to the site. | Pre and during construction | Contractor | Daily and maintain Records |
| A2.5 Locate construction car park and vehicle/plant/equipment storage areas as far as practicable from sensitive locations. | During construction | Site Supervisor | Daily and maintain Records |
| A2.6 Direct exhaust emissions of mobile plant away from the ground. | During construction | Site Supervisor | Daily and maintain Records |
| A2.7 Rubbish skips and receptacles should be covered and located as far as practicable from sensitive locations. | During construction | Site Supervisor | Daily and maintain Records |
9.5 **FLORA AND FAUNA**

It is known that the majority of the project areas have been previously disturbed although vegetation still exist in the upper catchment. Further, it is known that the project works will be located in areas that do not contain important terrestrial habitats. The landscape of the Greater Apia Catchment generally consists of a narrow coastal plain, with rocky, rugged, volcanic terrains making up the inner parts of the islands. The vegetation in these areas is primarily composed of lowland and montane rain forests, with small areas of riverine, swamp, mangrove, and beach forest. The islands have undergone extensive deforestation, as a consequence of timber operations and clearance of land for agriculture. A large proportion of the lowland forest around Apia has been cleared or highly modified, but the montane forests are less disturbed and have a rich variety of endemic flora and fauna. The coastal plains of the City have historically accommodated urban development, however over the last 15 years there is a tendency to see urban drift through the mid-slopes and up into the elevated steep areas. While no specific flora and fauna surveys have been undertaken of the project area, the literature suggests that there is a high diversity of flora specific that are natural and/or human plants.

The avifauna of Samoa include a total of 82 species, of which ten are endemic, five exotic and 23 are rare or accidental. Seven species are globally threatened. There is anecdotal evidence to suggest that one of the rare species may occur in the catchment. There are nine mammal species of which 1 is endangered and 2 are vulnerable. The project is unlikely to have direct impacts on these species. There are two national parks Mt Vaea and Lake Lanotoo and two reserves Malololelei reserve and Palolo deep reserve. The Mt Vaea Nature Reserve is located approximately 4km inland (south) of central Apia, on the south and east facing slopes of Mt Vaea, an ancient volcano from the Fagaloa volcanics. The total area of the reserve is approximately 79.6ha (196.6 acres). It should be noted that the boundaries of the Mt Vaea Nature Reserve shown in the Operational Plan are only approximate and are soon to be re-surveyed. Notwithstanding, the project will not impact on these locations. With respect to aquatic fauna, a 2008 study reported observing 30 species of fish and 17 species of macro-crustaceans. Three of the fish species observed and eight species of crustaceans were new records for Samoa. Up to six fish species observed are endemic, and one endemic crustacean; however these remain to be confirmed. Result from the study suggested that there were approximately 86 species of fresh and estuarine fish species; and an aggregated total of 22 crustaceans. Further, there are 16 species in two genera of freshwater snails, these being twelve species of Neritidae and four of Neritiliidae. Freshwater flora remains unstudied. There is one introduced species of freshwater prawn (*Macrobrachium rosenbergii*), while there are numerous fish species including two Tilapia species (*Oreochromis mossambicus and O. Niloticus*), a goldfish species (*Carassius auratus auratus*), the mosquito fish (*Gambusia affinis*) and one species of shortfin molly (*Poecilia reticulate*).

**Performance Criteria**

The following performance criteria are set for the construction of the projects:

a. no clearance of vegetation outside of the designated clearing boundaries;

b. no death to native fauna as a result of clearing activities;

c. no deleterious impacts on aquatic environments and terrestrial habitats;

d. no introduction of new weed species as a result of construction activities;

e. no increase in existing weed proliferation within or outside of the corridor as a result of construction activities; and

f. successful establishment of rehabilitation works incorporating species native to the local area.
Monitoring

A flora and fauna monitoring program has been developed for the projects. The program is subject to review and update at least every two months from the date of issue. Importantly, the site supervisor will when undertaking clearing works, will compile a weekly report to MNRE and UNDP staff outlining:

- any non-conformances to this ESMF and MP;
- the areas that have been rehabilitated during the preceding week; and
- details of the corrective action undertaken.

Reporting

All flora and fauna monitoring results and/or incidents will be tabulated and reported as outlined in the ESMF and MP. The RIA, MNRE, PUMA, and the GCF-PMU must be notified immediately in the event of any suspected instances of death to fauna and where vegetation if detrimental impacted.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Control Activity (and source)</th>
<th>Action Timing</th>
<th>Responsibility</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF1.1 Limit vegetation clearing and minimise habitat disturbance through adequate protection and management of retained vegetation.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain records</td>
<td></td>
</tr>
<tr>
<td>FF1.2 Minimise noise levels and lighting intrusion throughout construction and operation in the vicinity of any sensitive locations.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain records</td>
<td></td>
</tr>
<tr>
<td>FF1.3 Ensure that all site personnel are made aware of sensitive fauna/habitat areas and the requirements for the protection of these areas.</td>
<td>During construction</td>
<td>Contractor</td>
<td>Daily and maintain records</td>
<td></td>
</tr>
<tr>
<td>FF1.4 Minimise disturbance to onsite fauna and recover and rescue any injured or orphaned fauna during construction and operation.</td>
<td>During construction</td>
<td>Contractor</td>
<td>Daily and maintain records, report to MNRE</td>
<td></td>
</tr>
<tr>
<td>FF2.1 Implement an EDSCP to reduce the spread of weeds through erosion and sediment entering any waterways and therefore spreading.</td>
<td>Pre and during construction</td>
<td>Contractor</td>
<td>Maintain records</td>
<td></td>
</tr>
<tr>
<td>FF2.2 Revegetate disturbed areas using native and locally endemic species that have high habitat value.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>As required and maintain records</td>
<td></td>
</tr>
</tbody>
</table>
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| FF2.3: Minimise disturbance to mature remnant vegetation, particularly canopy trees. | During construction | Site Supervisor | Daily and maintain records |
| FF2.4: The removal of regrowth native trees should be minimised particularly where the width of a forest is narrow. | During construction | Site Supervisor | Daily and maintain records |
| FF2.5: Small trees and shrubs shall be removed in preference to large trees. | During construction | Site Supervisor | Daily and maintain records |
| FF2.6: Vegetation to be removed shall be clearly marked using paint or flagging tape. | During construction | Site Supervisor | Daily and maintain records |
| FF2.7: Environmental weeds and noxious weeds within the project footprints shall be controlled. | During and post construction | Site Supervisor | Weekly and maintain records |

9.6 WASTE MANAGEMENT

The MNRE advocates good waste management practice. The preferred waste management hierarchy and principles for achieving good waste management are as follows:

a. waste avoidance (avoid using unnecessary material on the projects);
b. waste re-use (re-use material and reduce disposing);
c. waste recycling (recycle material such as cans, bottles, etc.); and
d. waste disposal (all petrificable and used sterilisation and purification filters to be dumped at approved landfills).

The key waste streams generated during construction are likely to include residual sediment from both the river and drainage works, vegetation, construction materials and materials from the replacement of the Lelota Bridge. This will include, but not limited to, shrubs/trees, pavements, power poles etc. The wastes to be generated will mostly be vegetation-based and also include:

a. the excavation wastes unsuitable for reuse during earthworks;
b. wastes from construction equipment maintenance. Various heavy vehicles and construction equipment will be utilised for the duration of the construction phase. Liquid hazardous wastes from cleaning, repairing and maintenance of this equipment may be generated. Likewise leakage or spillage of fuels/oils within the site needs to be managed and disposed of appropriately;
c. non-hazardous liquid wastes will be generated through the use of workers’ facilities such as toilets; and
d. general wastes including scrap materials and biodegradable wastes.
 Contractors involved in construction and operational activities should be familiar with methods minimising the impacts of clearing vegetation to minimise the footprint to that essential for the works and rehabilitate disturbed areas. By doing these activities, the projects should minimise the impact of waste generated by the project.

**Performance Criteria**

The following performance criteria are set for the construction of the projects:
- a. waste generation is minimised through the implementation of the waste hierarchy (avoidance, reduce, reuse, recycle);
- b. no litter will be observed within the project corridor or surrounds as a result of activities by site personnel;
- c. no complaints received regarding waste generation and management;
- d. any waste from on-site portable sanitary facilities will be sent off site for disposal by a waste licensed contractor; and
- e. waste oils obtained from the oil separator will be collected and disposed or recycled off-site, local oil companies or shipped for recycling.

**Monitoring**

A waste management monitoring program has been developed for the projects. The program is subject to review and update at least every two months from the date of issue.

**Reporting**

The PUMA, MNRE, RIA and the GCF-PMU must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to waste is exceeded.

<table>
<thead>
<tr>
<th>6. WASTE MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue</td>
</tr>
<tr>
<td>WT1: Production of wastes and excessive use of resources</td>
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<td></td>
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<tr>
<td>Waste Type</td>
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<td>WT1.5</td>
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<td>WT1.6</td>
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<td>WT1.7</td>
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<tr>
<td>WT1.8</td>
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<td>WT1.9</td>
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<td>WT1.12</td>
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<td>WT1.13</td>
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<td>WT1.14</td>
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<tr>
<td>WT1.15</td>
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<tr>
<td>WT1.16</td>
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</tbody>
</table>
WT1.17: On-site storage of fuel and chemicals shall be kept to a minimum. | During Construction | Contractor | Daily, maintain records and report any incidents

WT1.18: Any waste oils and lubricants are to be collected and transported to recyclers or designated disposal sites as soon as possible. | During Construction | Site Supervisor | Daily and maintain records

WT1.19: Any dangerous goods stored on site shall be stored in accordance with Samoan regulations. | During Construction | Contractor | Daily and maintain records

9.7 CHEMICAL AND FUEL MANAGEMENT

The key types of chemicals and fuels likely to be stored on-site during construction include but are not limited to:
   a. diesel and unleaded petrol for the refuelling of plant equipment and generators;
   b. grease etc used during construction; and
   c. chemicals used in the construction process, although this is expected, based on the technology to be used, as extremely minimal if any.

If not handled, stored or used appropriately, contamination of land and the surface water and groundwater systems could occur. The accidental discharge of hazardous materials during construction and operation activities is a potential risk to the local environment. Accordingly, all oil, grease, diesel, petrol and chemicals should be stored off site within a bunded area.

Potential activities which could result in spills are:
   a. use of machinery and vehicles – potential for fuels, oils and lubricant spills;
   b. transport, storage and handling of fuels, machinery oils, grease;
   c. transport, storage and handling of cement/asphalt(bitumen) and other construction materials; and
   d. impacts associated with hazardous materials will primarily be associated with the storage and handling during the construction and operation phase.

Performance Criteria

The following performance criteria are set for the construction of the projects:
   a. ensure a Material Safety Data Sheet (MSDS) Register should be developed for all chemicals and fuels retained on site;
   b. handling and storage of hazardous material is in accordance with the relevant legislation and best management practices;
   c. all spills are reported to MNRE within one hour of occurrence; and
   d. no spills enter the local aquatic environments; and
e. prevent the uncontrolled release of oil, grease and diesel to the environment;
f. no spills of hazardous materials;
g. no chemical spills into the groundwater aquifers; and
h. no contamination of land due to spills of hazardous materials.

**Monitoring**

A chemical and fuel management program has been developed for the projects. The program is subject to review and update at least every two months from the date of issue. Importantly, the site supervisor should:

- a. conducted daily chemical and fuel assessments as part of their daily check procedure;
- b. manage the selection, purchase, storage, handling and disposal of chemicals to ensure minimal environmental impact;
- c. regularly inspect equipment that uses fuel, lubricants and/or hydraulic fluid;
- d. develop procedures and install equipment to contain, minimise and recover spills; and
- e. provide staff with procedures and training in spill prevention and clean up.

**Reporting**

The RIA, PUMA, MNRE and the GCF-PMU must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level as a result of a chemical or fuel leak or spill.

<table>
<thead>
<tr>
<th>7. CHEMICALS AND FUELS MANAGEMENT</th>
<th>Issue</th>
<th>Control Activity (and source)</th>
<th>Action Timing</th>
<th>Responsibility</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 Poor management of chemicals and fuels</td>
<td>C1.1: Prepare spill management plan addressing measures</td>
<td>Preconstruction</td>
<td>Contractor</td>
<td>Maintain records and weekly reporting</td>
<td></td>
</tr>
<tr>
<td>C1.2: Store and handle all chemicals, fuels, oils and potentially hazardous materials as specified in relevant standards and guidelines. All hazardous materials to be approved for use onsite. All hazardous materials and construction fuel will be stored in appropriate storage facilities (e.g. fuel and chemicals will be stored in a bunded area).</td>
<td>During Construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain records</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1.3: Hydrocarbon wastes shall be stored in colour coded and labelled drums placed around fuelling depots and disposed of at Tafaigata landfill with approval of the MNRE</td>
<td>During Construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain records</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1.4: Where possible, fuel and chemical storage and handling shall be undertaken at central fuel and chemical storage facilities, such as petrol stations/site depot.</td>
<td>During Construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain records</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C1.5: Onsite storage of fuel and chemicals shall be kept to a minimum.

C1.6: Emergency clean up kits for oil and chemical spills will be available onsite and in all large vehicles.

C1.7: Refuelling activities to preferentially occur off site however if required onsite ensure refuelling activities occur in designated areas of the site where appropriate temporary protection measures have been designed/located and are no less than 20 metres from surface waters and drainage lines.

9.8 SOCIAL MANAGEMENT

The project has been designed with the assistance of stakeholders and aims to provide benefits to the broader community. Notwithstanding, as with any project that involves construction, some dissatisfaction can occur and conflicts may arise. It is important that potential areas of tension are recognised early and appropriate actions taken to avoid or minimise conflict. The project and its sub-projects do not require involuntary resettlement or acquisition of land although they may impact on land during construction activities which will be temporary in nature.

Performance Criteria

The following performance criteria have been set for the project:

a. the community has been consulted and project elements have been designed with their informed consultation and participation throughout the project;
b. all stakeholders are appropriately represented;
c. avoid adverse impacts to local community during construction and operations and where not possible, minimise, restore or compensate for these impacts;
d. cultural heritage is not adversely impacted;
e. community health and safety is protected and overall well-being benefits derived from the project;
f. complaint and grievance mechanisms are put in place and proactively managed; and
g. long-term social benefits are achieved.

Monitoring

Local stakeholders and community members have a key role to play in the implementation and monitoring of the project. Consultation with stakeholders will continue. This will help ensure that stakeholders continue to be aware of the project, its progress and any changes in the project. It will also assist in identifying
any issues as they arise. MNRE will be responsible for advisory support and extensions services to local beneficiaries along with being responsible for distributing material inputs and providing technical training and backstopping in the implementation of programme activities.

**Reporting**

Records of all consultations are to be kept and reported on monthly basis. The RIA and GCF-PMU must be notified in the event of any individual or community complaint or dissatisfaction and ensure the Grievance Redress Mechanism is complied with.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Control Activity (and Source)</th>
<th>Action Timing</th>
<th>Responsibility</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM1: Changes in riverbanks and loss of access</td>
<td>SM 1.1: Carry out community consultation on the purpose and benefits of making changes to land use</td>
<td>Preconstruction</td>
<td>RIA and GCF-PMU</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>SM 1.2: Get community buy-in on any change of land use</td>
<td>Preconstruction</td>
<td>RIA and GCF-PMU</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>SM 1.3: Ensure compliance with the Grievance Redress Mechanism process</td>
<td>Entire construction and operation phase</td>
<td>RIA and GCF-PMU</td>
<td>Maintain records</td>
</tr>
<tr>
<td>SM42: Public nuisance caused by construction / operation activities (eg noise, dust etc)</td>
<td>SM 4.1: Carry out community consultation prior to undertaking activities</td>
<td>Preconstruction</td>
<td>RIA and GCF-PMU</td>
<td>Maintain records</td>
</tr>
<tr>
<td></td>
<td>SM 4.2: Implement appropriate management plans (refer to Noise, Air, ESCP, and Waste sections of ESMF and MP)</td>
<td>Construction and operation</td>
<td>Site supervisor and RIA</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>SM 4.3: Ensure compliance with the Grievance Redress Mechanism process</td>
<td>All phases</td>
<td>GCF-PMU and RIAs</td>
<td>Maintain records</td>
</tr>
</tbody>
</table>
9.9 ARCHAEOLOGICAL, INDIGENOUS AND CULTURAL HERITAGE

Cultural history, folklore, assets and places are important matters for future planning. There is a need to understand the implications of cultural heritage assets on affecting future urban structure and land uses. Cultural heritage sites, areas, places and practices should be protected and celebrated via subsequent planning tools as an important feature of local identity and sense of place. There are a number of key known cultural heritage places, buildings and monuments within Apia more broadly. For many of the urban villages there is a mix of modern development and traditional ‘fale’ areas within the one village. There is little mapping of these important areas at this time and it is unlikely that this information can be distilled at the City wide scale. While no cultural heritage places, buildings and monuments are known to exist in areas where the project will be undertaken, further investigation of places and practices of cultural and historic heritage significance should be undertaken as part of the preparation process.

Performance Criteria

The following performance criteria are set for the project:

a. There will be no impact on any important Archaeological, Indigenous and/or Cultural Heritage sites;
b. Manage any specific sites of important Archaeological, Indigenous and/or Cultural significance (significant sites);
c. Where there is a mix of modern development and traditional ‘fale’ areas within villages use community engagement to confirm options of enabling future development as nominated by the participants and protecting culturally significant traditional areas and
d. Work with the village communities to differentiate between traditional village areas of cultural significance (uses and physical form) within each of the Village fono boundary areas during the construction phase of the project.

Monitoring

An important Archaeological, Indigenous and Cultural Heritage monitoring program has been developed for the projects. The program is subject to review and update at least every two months from the date of issue. Importantly, the plan should:

(a) provide cultural heritage awareness training to all construction site personnel (including contractors);
(b) identify and collect any cultural heritage items worthy of protection;
(c) consult with the relevant Museums about any important Archaeological, Indigenous and/or Cultural Heritage material discovered during construction; and
(d) cease work in the area where any human remains are discovered and consult with the UNDP, MNRE and relevant Museum.

Reporting

The RIA, GCF-PMU and PUMA must be notified immediately in the event of any suspected find related to important Archaeological, Indigenous and/or Cultural Heritage.
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9. ARCHAEOLOGICAL AND CULTURAL HERITAGE

<table>
<thead>
<tr>
<th>Issue</th>
<th>Control Activity (and Source)</th>
<th>Action Timing</th>
<th>Responsibility</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH1: Damage or disturbance to significant important Archaeological, Indigenous and/or Cultural Heritage during the earth disturbances and land clearing activities</td>
<td>CH1.1: Should any important Archaeological and /or Cultural Heritage sites are found - immediately cease work within the area that the site has been observed and consult with the PMU, PUMA and MNRE and traditional owner groups.</td>
<td>Pre and during construction</td>
<td>Contractor</td>
<td>Daily, maintain records and immediately notify PUMA, the RIA and GCF-PMU and MNRE.</td>
</tr>
</tbody>
</table>

9.10 EMERGENCY RESPONSE PLAN

In the event of actions occurring, which may result in serious health, safety and environmental (catastrophic) damage, emergency response or contingency actions will be implemented as soon as possible to limit the extent of environmental damage. It is known that there are residences located close to the majority of the infrastructure components of the project although less so for the revegetation activities. The contractor will need to incorporate construction emergency responses into the project complying with the requirements under the Occupational, Health and Safety Policy of the contractor or the work related Government of the Samoa legislation.

Performance Criteria

The following performance criteria are set for the construction of the projects:
  a. no incident of fire outbreak during construction;
  b. reduce the risk of fire by undertaking hot works as necessary within cleared locations (it is unlikely any hot works will be necessary; however the issue has been included as a matter of caution);
  c. provide an immediate and effective response to incidents that represent a risk to public health, safety or the environment; and
  d. minimise environmental harm due to unforeseen incidents.
Monitoring

An emergency response monitoring program has been developed for the projects. The program is subject to review and update at least every two months from the date of issue. Importantly, visual inspections will be conducted by site supervisor daily with reporting to the RIA on a weekly basis (minimum) noting any non-conformances to this ESMF and MP.

Reporting

The RIA, GCF-PMU, PUMA and FESA must be notified immediately in the event of any emergency, including fire or health related matter including those that have resulted in serious environmental harm.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Control Activity (and Source)</th>
<th>Action Timing</th>
<th>Responsibility</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1. Fire and Emergency management and prevention strategies implemented</td>
<td>E1.1: Flammable and combustible liquids bunding /storage areas to be designed in accordance with appropriate international standards</td>
<td>Pre and during construction</td>
<td>Contractor</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.2: Fire extinguishers are to be available within all site vehicle</td>
<td>During construction</td>
<td>Contractor</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.3: No open fires are permitted within the project area with a permit obtained from Fire and Emergency Services (FESA) for welding on site.</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.4: No cigarette butts are to be disposed of onto the ground throughout the project area, all smokers must carry a portable disposal bin to reduce the risk of a spot fire starting and general litter</td>
<td>During construction</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.5: Stockpiles of mulch are not to exceed two meters in height and width and must be turned regularly.</td>
<td>During construction</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td></td>
<td>E1.6: Train all staff in emergency preparedness and response (cover health and safety at the work site)</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain records</td>
</tr>
<tr>
<td>E1.7: Check and replenish First Aid Kits</td>
<td>During construction</td>
<td>Site Supervisor</td>
<td>Daily and maintain records</td>
<td></td>
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</tr>
<tr>
<td>E1.8: Use of Personal Protection Equipment</td>
<td>During construction</td>
<td>All Personnel</td>
<td>Daily and maintain records</td>
<td></td>
</tr>
</tbody>
</table>
Annexures

1. UNDP SESP 2021 (version 9)
2. Stakeholder Engagement Plan 2020 (version 2)
3. Draft Community and Stakeholder Engagement Procedure and Action Plan 2021 (version 5)
5. 5919 Samoa GCF-VCP Final Lelata Bridge Preliminary Environmental Assessment Report 2022 – disclosure
6. Final draft Preliminary Environmental Assessment Report (Segment 3)
7. Final EMP Drainage Works