

Environmental and Social Management Plan

PRIORITIZED ROAD INVESTMENT AND MANAGEMENT ENHANCEMENTS (PRIME) PROJECT

Federated States of Micronesia - Pohnpei

ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP)

Awak Bridge Replacement

Pohnpei

Prepared by



With Funding from



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ABBREVIATIONS

ALO	Adjacent Land Owner
CESMP	Construction Environmental and Social Management Plan
CIU	Central Implementation Unit
CHSMP	Community Health and Safety Management Plan
DoFA	Department of Finance and Administration
DTC&I	Department of Transportation, Communications, and Infrastructure
E&SCP	Erosion and Sediment Control Plan
EHS	Environmental, Health and Safety
EHSB	Environmental, Health and Safety Guidelines (World Bank Group)
ENSO	El Niño Southern Oscillation
EPA	Environmental Protection Agency
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESS	Environmental and Social Standard
FGD	Focus Group Discussion
FSM	Federated States of Micronesia
GBV	Gender-Based Violence
GRM	Grievance Redress Mechanism
HIV/AIDS	Human Immunodeficiency Virus Acquired Immune Deficiency Syndrome
HMMP	Hazardous Materials Management Plan
HSMP	Health and Safety Management Plan
ICT	International Consultants and Technocrats
IUCN	International Union for Conservation of Nature
KII	Key Informant Interview
LADDR	Land Access Due Diligence Report
LMP	Labor Management Procedures
LRFD	Load and Resistance Factor Design
MP	Monitoring Plan
MSDS	Material Safety Data Sheet
NOAA	National Oceanic and Atmospheric Administration
OHS	Occupational Health and Safety
OHSMP	Occupational Health and Safety Management Plan
PIU	Project Implementation Unit
PMU	Project Management Unit
PPCP	Pollution Prevention and Control Plan

PRIME	Prioritized Road Investment and Management Enhancements
PSC	Project Steering Committee
RCP	Representative Concentration Pathway
RF	Resettlement Framework
RL	Reduced Level
ROW	Right of Way
SEA/SH	Sexual Exploitation, Abuse and Sexual Harassment
SEP	Stakeholder Engagement Plan
SoW	Scope of Works
STI	Sexually Transmitted Infection
SWMP	Surface Water Management Plan
TRSM	Traffic and Road Safety Management Plan
TOR	Terms of Reference
USA	United States of America
UXO	Unexploded Ordnance
WB	World Bank
WHO	World Health Organization
WMMP	Waste Minimization and Management Plan

WEIGHTS AND MEASURES

Unit	Description	Equivalent / Notes
ft	<u>foot / feet</u>	0.3048 meters
m	meter	Base SI unit of length
mi	mile	5,280 ft
Sq <u>sq</u> ft	Square <u>square</u> feet	Unit of area
sq km	square kilometers	1,000,000 square meters
acre	acre	4,840 square yards
Ton	ton is an Imperial measurement of weight	Equivalent to 2000lbs

NOTES

In this report, "\$" refers to United States dollars.

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EXECUTIVE SUMMARY

Background. The Government of Federated States of Micronesia (FSM) has requested the World Bank (WB) to prioritize support to the transport sector through preparation and financing of the Federated States of Micronesia-Prioritized Road Investment and Management Enhancement Project (PRIME), which is designed to improve the climate resilience and safety of the country's road network by addressing critical infrastructure upgrades.

The PRIME Project will provide funds for technical assistance and institutional strengthening to improve the management of the road network in relation to potential climate change impacts for the FSM. In addition, the Project will fund the feasibility, design and construction of physical works on priority road assets to improve resilience to climate-related hazards or events. The PRIME Project is included within the WB's Pacific Climate Resilient Transport Program (PC RTP) series of projects and will make significant investments in a range of climate-resilient infrastructure. Project activities will primarily take place within existing primary road corridors, or immediately adjacent to the road to improve erosion protection, drainage or safety features.

Rationale. Pohnpei is one of the four states of FSM. Some of the existing bridges in Pohnpei are in poor condition with concrete corrosion. The Awak Bridge is in Awak, a small community approx. 5.5 miles from Kolonia, the commercial business district and state capital, on the primary circumferential road. The Pilen Kepin Awak stream flows under the bridge before discharging into the coastal marine lagoon. This project is designed to replace the existing Awak Bridge, in North-East quadrant of the island, with a new bridge with an enhanced design to manage future climate change.

Institutional arrangements. The Department of Finance and Administration (DoFA) will be the executing agency for the project with the Department of Transportation, Communication, and Infrastructure (DTC&I) as the implementing agency. A Project Management Unit (PIU) has been established within the DTC&I and is responsible for the overall coordination, results monitoring, and reporting to the WB on the progress of project implementation. The PIU consists of international and national consultants including environmental experts. These resources will be responsible for monitoring compliance with the ESMP, WB's and national legislation.

Environmental and Social Risk Management Due Diligence: The Awak Bridge Replacement Project is a 'moderate' risk project under the WB Environmental and Social Framework and requires the development of a site-specific Environmental and Social Management Plan (ESMP). The project is located in areas with valuable ecosystems while the potential impacts on these areas are manageable and impacts will be site-specific, local and / or temporary.

This ESMP is required to identify and assess environmental and social issues associated with the proposed activities and develop mitigation and management measures consistent with World Bank requirements.

This ESMP, focusing on bridge replacement and road upgrade works at Awak, addresses mitigation, monitoring, responsibilities and institutional capacity for the project.

The Scope of Works (SOW) is summarized below:

- includes a full-width reconstruction of the existing road (no change to the existing alignment), and the replacement of the existing bridge structure, with improved drainage, a pedestrian walkway on both sides of the road where possible and replacing two culverts and upgrading rock armoring for coastal protection. A temporary Bailey bridge will be used whilst the present bridge is being removed, and the replacement bridge is being constructed.

The majority of potential adverse impacts will occur during the construction phase. Screening of the proposed upgrades has identified impacts, are discussed in detail in the ESMP. The key potential impacts that will require mitigation include:

- Erosion and sediment control
- Traffic management
- Solid waste generation and
- Community Health and Safety

This ESMP is designed to address these issues through a series of mitigation and management measures. The measures will be implemented through:

- Implementation of this ESMP through the approved Contractor's CESMP (CESMP outline is given as Appendix-E)
- Regular supervision and monitoring of the implementation of the CESMP and
- Meaningful and ongoing consultations with the local communities during the construction phases of this project.

Climate change. This project is prioritizing climate-proofing of the Awak Bridge recognizing the critical role of the road's connectivity to services for the people of Pohnpei. These threats include:

- Increase in tropical cyclone intensity, though reduced frequency;
- High intensity of rainfall causing increased flooding, and
- Storm surges and coastal flooding causing coastal erosion and damage to existing road infrastructure.

Marine and Freshwater Ecology: The marine embayment, locally known Dekehn Awak, adjacent to the bridge and road corridor is dominated by mangrove habitat, with a predominantly fine-sediment substrate. Seagrass coverage within the receiving environment of the Pilen Kepin Awak stream discharge is minimal, reflecting the naturally turbid, low-light conditions typical of mangrove-fringed embayment's. The culturally significant giant mottled river eel is present in the Pilen Kepin Awak stream.

Impacts on the marine receiving waters from sediment runoff during the 24-month construction period are expected to be minimal, as the contractor will implement and maintain detailed erosion and sediment control measures throughout the works. The embankment repair activities will be temporary and small-scale, with robust controls in place to minimize soil loss and reduce the potential for sediment mobilization into adjacent marine habitats."

Terrestrial assessment: The terrestrial vegetation within the project's area of influence has been extensively modified by long-term urban development and now bears little resemblance to the original native plant communities or associated terrestrial ecosystems. Local fauna is correspondingly dominated by species that are well adapted to disturbed and urbanised environments.

The loss of habitat in the surrounding landscape impacts on the ecological values required by endangered Pohnpei Flying Fox (*Pteropus molossinus*¹) and the Vulnerable endemic Pohnpei

¹ This species is listed as Endangered as per IUCN red list

Kingfisher (*Todiramphus reichenbachii*)². Both species are declared globally endemic by the IUCN. Suitable roosting, breeding, and foraging areas remain under threat, in particular for the Pohnpei Flying Fox, outside of the project's area of influence.

The mangrove and garden habitats within the project's area of influence are classified as Critical Habitat on a precautionary basis due to the presence of the endangered Pohnpei Flying Fox (*Pteropus molossinus*) and the Vulnerable Pohnpei Kingfisher (*Todiramphus reichenbachii*). Although baseline observations did not establish whether these habitats are of 'significant importance' as defined under ESS6, the confirmed occurrence of these threatened and restricted-range species warrants a precautionary Critical Habitat designation.

The biodiversity management requirements of ESS6 will be met by maintaining the functionality of critical habitat values and ensuring that project activities do not result in measurable adverse impacts on endangered or vulnerable species. A pre-construction and construction-phase monitoring program will be implemented for both the Pohnpei Flying Fox and the Pohnpei Kingfisher. Monitoring will initially be undertaken for six months during the pre-construction phase to determine whether these endangered or vulnerable species are present within the project's area of influence. If either species is confirmed, ongoing construction phase monitoring will assess any behavioral changes or potential impacts associated with project activities. Where monitoring indicates emerging risks or measurable impacts, adaptive management measures will be implemented to avoid or minimize any net loss of these species throughout the project duration.

Any residual net loss identified through the monitoring program can be offset by establishing a robust baseline of population size, distribution, and behavior for these species. This baseline will provide the scientific foundation needed to design and implement targeted conservation actions. By generating high-quality ecological data and directing it into evidence-based conservation initiatives, the project can contribute to measurable improvements in the status of these species and support the achievement of a net-gain outcome.

Social Assessment: Residential housing, the Awak Elementary School and St Joseph Church are significant parts of the built environment adjacent to the road and bridge. The community is supportive of the replacement bridge and road upgrade program. Agreements have been made with landholders to provide temporary access to their land for the Bailey bridge diversion, and a compensation package has been arranged for the loss of plants during this activity. Road safety, construction noise, vibration and air quality impacts (dust), on the local community during upgrading of the roadworks and bridge and associated infrastructure, will be localized and temporary.

Natural Habitat Classification: Though there has been extensive modification of the natural environment around the proposed project site, the Pilen Kepin Awak stream and adjacent embayment, locally known Dekehn Awak, is classified as natural habitat according to ESS 6, since there has been

- limited impact on the ecological function of the habitat.
- there is a long-term pattern of traditional use, to which native species assemblages have adapted and
- activities have not profoundly affected the habitat's ability to recover its former ecological characteristics.

² This species is listed as Vulnerable as per IUCN red list

The culturally designated mangroves adjacent to the bridge are also classified as critical habitat as this is potential feeding habitat for the endangered Pohnpei Flying Fox and Vulnerable Pohnpei Kingfisher.

Consultation between PIU and the local land holders have discussed the placement of gabions 150 ft upstream of the Awak Bridge to provide additional river training thereby reducing the likelihood of localized flooding on landholders' properties. Further hydraulic analyses and approval by the Contractor Supervisor Engineer is required prior to any works being undertaken in the stream.

Environmental and Social Management Plan. The PIU within the DTC&I will be responsible for the environmental and social management system and will assist DTC&I with inspection, monitoring, reporting, and initiating any required corrective actions or measures. This ESMP meets FSM's Environmental Impact Assessment (EIA) Regulations.

To ensure that contractors comply with ESMP provisions, the PIU will prepare and provide the following specification clauses for incorporation into the bidding procedures: (i) a list of environmental management requirements to be budgeted by the bidders in their proposals; (ii) environmental clauses for contractual terms and conditions, and (iii) the full ESMP report for compliance. The PIU and contractors will each nominate qualified EHS staff to undertake environmental, social, health and safety management activities and ensure effective ESMP implementation.

Information, disclosure, consultation, and participation. Environmental information on the project was discussed with the general community and other key stakeholders. The ESMP will be made available for review by interested stakeholders and Pohnpei EPA according to the provisions of the World Bank (WB) ESS10. The stakeholder consultation process disseminated information to the public, project-affected communities, and key environmental stakeholders.³

Information was provided on the scale and scope of the project, and the expected impacts and proposed mitigation measures, through consultation with government departments, local authorities, and the public in meetings. The process also gathered information on relevant concerns of the local community for the project, to address these concerns in the project design and implementation stages. The local community anticipates the substantial benefits in road upgrades from the project.

Grievance redress mechanism. Should grievances arise from technical advisory, design, institutional strengthening, construction or operation impacts from activities associated with the project, to comply with the ESS10, a grievance redress mechanism (GRM) has been established for the PRIME and SCORE projects (in the projects combined SEP).to receive, evaluate, and facilitate the resolution of affected people's concerns, complaints, and grievances about any aspect of the Project including environmental and social performance. The GRM is based on accepted and standard practices in FSM, specifically in Pohnpei State, and will provide an accessible, time-bound,k,m and transparent mechanism for affected persons to voice and resolve social and environmental concerns linked to the Project. Additionally, the PRIME and SCORE projects will be managed by the projects specific Grievance Mechanism (GM) which includes a GBV/SEA/SH reporting and referral pathway as well as standard project grievance pathway. The PIU continuously updates grievance information (grievance records, grievance database, agreements, meeting registers).

³ The ESS10 defines the stakeholders are (i) affected or likely to be affected by the project (project-affected parties); and (ii) may have an interest in the project (other interested parties) .

Monitoring and Reporting: Monthly ESHS report within the Construction Report. Contractor's monthly reports to be submitted to PIU and CIU, then World Bank WB.

Estimated Cost for ESMP: A total budget of USD 382,725 has been allocated to implement the Environmental and Social Management Plan (ESMP) over a preconstruction period up to 6 months and 24-month construction period. The allocation covers core personnel, routine monitoring, and compliance-driven management activities. Bat and bird surveys will be funded by the PIU.

Conclusions: The project will bring positive impacts to the community of Pohnpei with improvements in bridge safety on the ring road, with enhanced flood mitigation reducing impacts on the built environment, including local housing. The potential environmental and social impacts arising from design, construction, operation, and maintenance of the project will be moderate, localized, mostly temporary and acceptable, with mitigation measures, as set out in the ESMP to be implemented.

This ESMP is considered appropriate to meet the environmental and social safeguard requirements of the PRIME Project, WB ESF, applicable FSM Environment Protection Act (2014), FSM EPA Environmental Impact Assessment Regulations (1989) and other relevant national legislation and the Pohnpei state, in respect to the management of the replacement of Awak Bridge and road upgrades.

1) INTRODUCTION

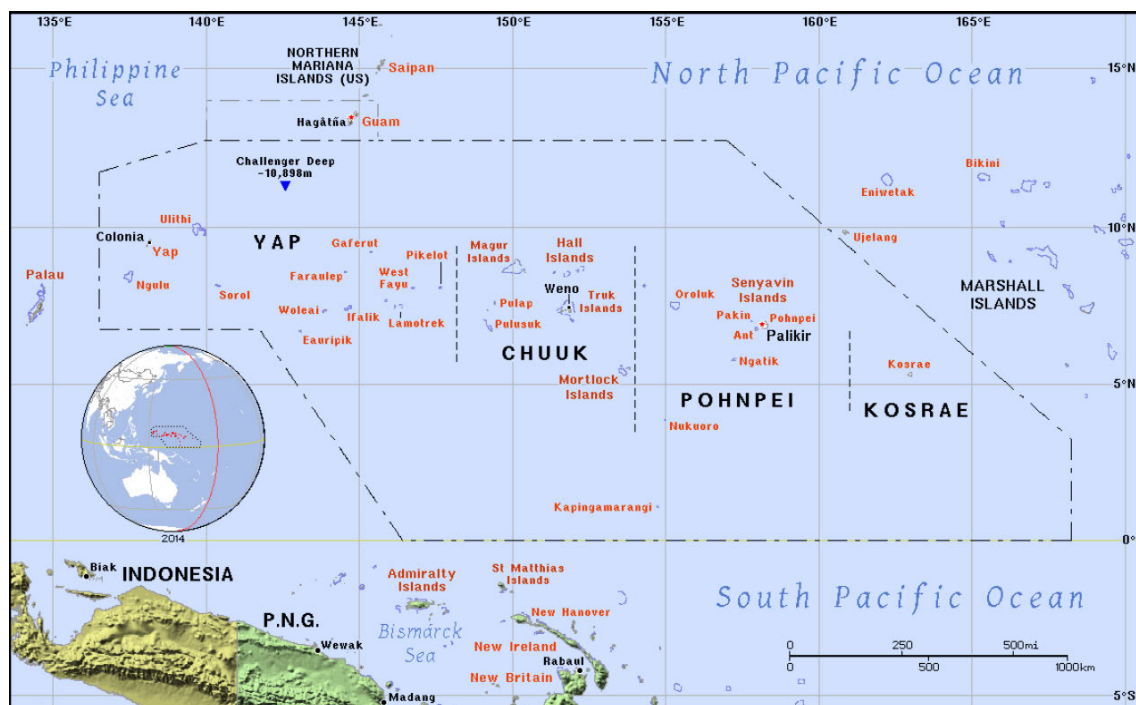
a) Report Structure

1. The Environmental and Social Management Plan (ESMP) consists of the following sections: Executive Summary; (1) Introduction; (2) Legal and Institutional Framework; (3) Project Description; (4) Description of the Environment. (5) Anticipated Impacts and Mitigation Measures; (6) Stakeholders Management, Information Disclosure and Public Consultation; (7) Grievance Redress Mechanism; (8) Environmental and Social Management Monitoring Plan and (9) Conclusions plus Appendices.

b) Project Background and Rationale

2. **Location.** The Federated States of Micronesia (FSM) is in the northwestern Pacific and is approximately 2700 km from east to west (Figure 1). It includes 607 islands, 74 of which are inhabited, which are scattered over an area of 2.6 million square kilometers (sq km) located between Palau and the Philippines in the west, and the Marshall Islands to the east. It comprises four states: Yap, Chuuk, Pohnpei and Kosrae with each state having a main island where most of the population is based. Each state is also diverse in terms of language, culture, environmental and land tenure laws.
3. Pohnpei is one of the four states in FSM, between Chuuk state in the west and Kosrae state in the east. Pohnpei Island is the main island with the largest population in FSM (approximately 35,000 in the 2010 census). It is a rugged, volcanic island with extensive mangrove swamps and surrounded by a fringing reef.

Figure 1: Map of Federated States of Micronesia



4. The Awak Bridge Replacement Project is located on the east of Pohnpei Island, connecting small communities to the main commercial business district and state capital Kolonia and federal capital of Palikir.
5. **The project.** The proposed project in Pohnpei is the replacement of the Awak road bridge designed to replace the existing distressed concrete bridge with a new bridge to enhance climate resilience in addition to upgrades of 1150 ft (350 metres) of roadworks either side of the bridge. The rationale for the project is to improve climate resilience, reduce flood risk, and enhance connectivity for emergency services and local communities. The project is one of a series of projects funded by the World Bank under the FSM Prioritized Road Investment and Management Enhancement Project (PRIME). The design has avoided impacts on lands, properties, livelihoods and structures. This is set out in the LADDR. This ESMP reflects key findings of LADDR.
6. **Institutional arrangements.** The Department of Transport, Communications and Infrastructure (DTC&I) is the implementing agency PRIME through its Project Implementation Unit (PIU). DTC&I engaged Works Supervisor Contractor - consultant ICT to prepare the design, drawings and bidding documents and to supervise the road contractors. ICT contributed environmental and social information for the preparation of this ESMP and will be responsible for overseeing the implementation of the ESMP and the Contractor's ESMP (CESMP), on behalf of the PIU. Pohnpei state is responsible for implementing the state environmental laws and regulations.

c) Scope of the ESMP

7. The scope of the ESMP is to:
 - (i) assess the existing environmental and social conditions in the project area, including the identification of environmentally sensitive areas and sensitive social receptors;
 - (ii) assess the proposed infrastructure design and construction activities to identify potential impacts, evaluate the impacts, and determine their significance.
 - (iii) propose appropriate mitigation measures that can be incorporated into the proposed activities to minimize any adverse impacts, ensure that residual impacts are acceptable and propose monitoring and actions;
 - (iv) review legislative and approval requirements under which construction activities can occur; and
 - (v) prepare a matrix of mitigation and monitoring measures that will guide environmental and social risk management during project construction and operation.
8. The preparation of the ESMP involved desktop research, field trips, observational surveys, social surveys and stakeholder engagement. Area of Influence was defined iteratively through the study as engineering design was refined, site data collected and impact analysis undertaken.

2) LEGAL AND INSTITUTIONAL FRAMEWORK

a) Relevant Legislation for the Project

9. The GoFSM is modeled after the federal system similar to that of the United States of America (USA) with a national president and four state governors with respective legislatures and judiciaries. The states of Pohnpei, Chuuk and Yap have four levels of governance – National, State, municipal, and traditional. Kosrae does not have the fourth level of government, as it no longer has traditional leadership.
10. The four States of FSM (Kosrae, Pohnpei, Chuuk and Yap) have considerable degrees of autonomy. Each State also has its own set of environmental and social laws and regulations geared to protect the States from a wide range of environmental impacts including the effects of climate change. Under the Compact II, Article VI and section 161 of Title II, FSM is committed to applying the National Environmental Policy Act 1969 (since repealed) and “to develop and implement standards and procedures to protect its environment”. The following articles of legislation are relevant to the PRIME and SCORE projects.
11. The following laws and policies that exist in Pohnpei for managing and conserving the environment that may apply to the PRIME Project:
 - Constitution of the State of Pohnpei 1984 (Primary rule of law in the State of Pohnpei).
 - Public Trust Lands Distribution Act 1980.
 - Public Lands Act 1987.
 - Deed of Trust Act 1987.
 - Trust Territory Environmental Protection Act, preserved from the Trust Territory environmental law. The Act and subordinate regulations relate to:
 - Air pollution;
 - Pesticides;
 - Public water supply systems;
 - Marine and freshwater quality;
 - Solid waste;
 - Toilet facilities and sewerage disposal; and
 - Earthmoving.
 - Transportation Zone Act 1987.
 - Conservation and Resource Enforcement Act 1982.
 - Forest Management Act 1979.
 - Pohnpei Watershed Forest Reserve and Mangrove Protection Act 1987.
 - Designation of State Bird Act.
 - Marine Resources Conservation Act 1981.
 - Pohnpei Environmental Protection Act 1992.

- Pohnpei Cultural Preservation Act.
- Trust Territory Environmental Quality Protection Act.

Pohnpei Constitution (1984)

12. Under the Pohnpei Constitution, the State Governor must establish and administer “*comprehensive plans for the conservation of natural resources and the protection of the environment*”. Article 12 states that only Ponapean citizens, who are also pwilidak of Pohnpei, may acquire a permanent interest in real property. The Constitution also prohibits leases of more than 25 years and indefinite land-use agreements. The Government of Pohnpei may acquire land for public purposes following consultation with local government, owners and an offer for payment of a purchase price or compensation. Article 13 of the Pohnpei Constitution prohibits the introduction, storage, use, test and disposal of nuclear, chemical, gas and biological weapons, nuclear power plants and related waste materials from Pohnpei.
13. Article 5 of the Pohnpei Constitution states “[t]his Constitution upholds, respects, and protects the customs and traditions of the traditional kingdoms of Pohnpei” and that the Pohnpei Government shall respect and protect customs and traditions.
14. **Pohnpei Environmental Protection Act (1992):** Pohnpei’s *Environmental Protection Act (1992)* S.L. No. 3L-26-92 establishes a procedure for preparation of an environmental assessment statement (EAS) prior to any action that may significantly affect the quality of the human environment. The degree of environmental assessment detail for a project depends upon the significance of its potential environmental impacts.
15. Significance of the action is determined by the EPA on consideration of an Initial Assessment (with a prescribed checklist) submitted by a proponent.
16. The EPA receives the environmental assessment document and reviews it for compliance with the Act and the regulations in terms of format, adequacy of information and objectivity. The EPA authorizes commencement of a project, through a permitting process, only if it determines that the assessment is sufficient. Once the completed assessment is presented to the EPA Board of Directors and upon the final deliberations of the EPA Board, a permit will be given to the project proponent with conditions for compliance of the project proponent as required by EPA regulations.
17. There is a range of potentially required permits and licenses for a major development in Pohnpei. These comprise:
 - EPA Earthmoving Permit;
 - Land Ownership Documentation;
 - Forestry Clearance;
 - Marine Resources Assessment Report;
 - Municipal Government Clearance (planning approval);
 - Department of Lands Approval; and
 - Historic Preservation Clearance.
18. The Act requires the active assistance of all government authorities to achieve its goals. The result, in practice, is that only the EPA Earthmoving Permit is required. This applies to projects with significant amounts of earthworks. Its focus is the management of soil and water conservation.

19. The Pohnpei EPA will require an initial assessment document which will determine whether an EIA S is required depending on the nature and scale of impacts. The EIA would be reviewed by the EPA Board of Directors and a permit provided with conditions for compliance with EPA regulations.
20. The full list of relevant federal and state acts and conventions of FSM are parties to are summarized in the PRIME ESMF, LMP and RF.

b) World Bank Environmental and Social Framework

21. **The World Bank Environmental and Social Framework (ESF)** is a comprehensive system designed to protect people and the environment in projects financed by the World Bank.

i) Core Components

22. The framework consists of three primary elements:

A Vision for Sustainable Development: Outlines the World Bank's commitment to environmental and social sustainability.

The World Bank Environmental and Social Policy for IPF: Defines the mandatory requirements the World Bank must follow during project due diligence and oversight.

Ten Environmental and Social Standards (ESS): Specific requirements that **borrowers** must meet throughout the project lifecycle.

ii) The ESF Environmental and Social Standards (ESS) and PRIME E&S Risk Management Instruments

23. The ten ESS standards address various project risks, including labor conditions, community health and safety, cultural heritage, and stakeholder engagement. The full list of standards, which cover areas such as environmental and social risk management, resource efficiency, land acquisition, biodiversity, and indigenous peoples, can be found on the World Bank website.

24. **Table 1** presents these standards and their applicability to the Project:

25. Several environmental and social instruments were prepared at the time of funding appraisal for the PRIME Project in order to manage risk across all components and sub-project investments in accordance with FSM country systems and the World Bank ESF. Many documents relate to both the PRIME⁴ Project and Strategic Climate-Oriented Road Enhancement Project (SCORE)⁵:

- (i) PRIME Environmental and Social Commitment Plan (ESCP) - outlines the specific environmental and social measures FSM must implement, detailing actions, timelines, and responsibilities to manage risks like pollution, labor issues, and social impacts, ensuring compliance with the ES and the relevant ESS. The ESCP forms part of the legal agreement between FSM and the World Bank and must be complied with for the duration of the PRIME Project.
- (ii) PRIME/SCORE ESMF: is a framework for identifying and managing all environmental and social risks under PRIME and SCORE. The purpose of ESMF is to examine the risks and impacts of a project when the project consists of a program and/or series of works, and the risks cannot be determined until the program or works details have been identified. The ESMF has a screening process for all sub-projects, which guides the scope of the investigations and type of instrument(s) to be prepared (such as ESMP). The ESMF provides general guidance on mitigation and monitoring measures for all sub-projects.
- (iii) PRIME/SCORE Resettlement Framework (RF): clarifies resettlement principles, organizational arrangements and design criteria to be applied to PRIME and SCORE works or project sub-projects to be prepared during project implementation. The RF

⁴ Prioritized Road Investment and Management Enhancements Project (PRIME) - FSM DoFA

⁵ <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/453251648600227981>

prescribes the processes for identifying land requirements, consultation with landowners and occupiers, preparing plans or due diligence assessments, valuations, entitlements, land acquisition and monitoring.

- (iv) PRIME/SCORE Stakeholder Engagement Plan (SEP): provides stakeholder mapping for the projects and provides a plan for identifying and engaging with stakeholders for each component and sub-project, documenting and addressing feedback, disclosure of documents and a grievance redress mechanism for the projects which must be applied to each sub-project.
 - (v) PRIME/SCORE Labor Management Procedures (LMP) documents the labor and working conditions requirements, including occupational health and safety (OHS) for all workers under PRIME and SCORE, including contractor's workers, in accordance with ESS 2. The LMP also contains a worker's grievance mechanism.
 - (vi) PRIME Generic ESMP: is a model or template ESMP for moderate risk sub-projects which do not have unique or site-specific risks. It includes a CESMP template and an indicative outline is given as Appendix-E with this ESMP. Many of the mitigation measures can be utilised or adapted for use in site specific ESMP.
26. All project investments such as the Awak Bridge Replacement Project, must follow the processes, procedures and standards of the aforementioned instruments. The Project was screened under the ESMF and RF and the screening concluded the following:
- (i) The Project was classified as moderate risk. This means the project impacts are site-specific, few in number, and not complex. Adverse impacts are temporary or reversible with mitigation. Potential negative consequences are well-known and easy to identify. Mitigation measures typically include standard, established procedures rather than complex, specialized designs.
 - (ii) The Project required a site specific ESMP, proportionate to the environmental and social risks. The Generic ESMP mitigation measures could be applied where relevant.
 - (iii) The Project required a Land Access Due Diligence Report (LADDR) to validate the land ownership and approvals for the works to go ahead.
 - (iv) The Project must implement and comply with the LMP and SEP, proportionate to the risks and issues.

Table 1: World Bank: Environmental and Social Standards and Applicability to the Project

Standard	Application to the Project
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	PRIME project instruments were prepared in accordance with ESS1. Under the ESMF the Awak Bridge Rehabilitation Project has been screened as 'Moderate' risk. The project is located in areas with valuable ecosystems while the potential impacts on these areas are manageable and impacts will be site-specific, local and / or temporary. The ESMP will apply federal and state laws and regulations, the ESMF and World Bank Group Environmental, Health and Safety Guidelines (EHSG). . Consultations with stakeholders and affected communities are used to inform the decision-making process.
ESS2: Labor and Working Conditions	The LMP includes all requirements for the projects to comply with ESS2. Workers involved in the Project will include contracted workers. The LMP includes terms and conditions of employment, nondiscrimination and equal opportunity (which includes a safe work environment free from violence and sexual harassment), workers' organizations, restrictions on child and forced labor, and OHS in design, construction, and operational phases. The LMP refers to the OHS Management Plan guidelines in the Generic ESMP as a requirement for all sub-projects to follow. The PRIME LMP is applicable to the Awak Bridge Replacement Project.
ESS3: Resource Efficiency and Pollution Prevention	ESMF risk screening and mitigation procedures include resource efficiency and pollution prevention. Efficiencies e.g. local quarry material sourcing and material reuse has been considered in ESMP and road design. No use of beach materials or coral rock is to be used, in accordance with the requirements of the ESMF. The aim would be to minimize both haulage distances and overburden removal and byproduct wastage to maximize resource efficiency. An Erosion and Sediment Control Plan (E&SCP) will be adopted by the Contractor in the CESMP to minimize sediment loss to receiving waters, and Hazardous Materials Management Plan (HMMP) will prevent any hazardous materials loss from the extraction and project construction site. Noise emissions and emissions to air will be managed through good international industry practice in the CESMP.
ESS4: Community Health and Safety	ESMF risk screening and mitigation procedures includes community health and safety. The increase in the out-of-State labor for the Project has been considered, and the risks identified and described in this ESMP. Contractor-managed training and appropriate measures will be in place to prevent the transmission of HIV/AIDS, and elimination of SEA/SH will be undertaken during the project works. Signed 'Codes of Conduct' by the construction workforce will be completed, with their responsibilities clearly articulated during training. Road safety features during both construction and operation have been considered in design, in accordance with World Bank guidance. These features have been assessed for residual risk. A Traffic and Road Safety Management Plan (TRSMP) and Community Health and Safety Management Plan (CHSMP) in the CESMP will control risks around the work site.

Standard	Application to the Project
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	The RF principles, processes, risk screening, planning and compensation entitlements address ESS5 requirements. A LADDR has been prepared for the Awak Bridge Replacement Project. All project elements are within the agreed 50-foot-wide road right-of-way (ROW). The LADDR confirms that no land acquisition or involuntary resettlement is required for this Project. Compensation for the affected trees will be paid by the Contractor. The compensation is to be at replacement cost. PIU will obtain information about the replacement values and consult with the owners regarding the rates.
ESS6: Biodiversity Conservation and Sustainable Management of Natural Resources	ESMF risk screening and mitigation procedures in the ESMP includes ESS6 requirements. Construction will occur in areas of natural habitat (stream and marine environment) and critical habitat (food sources for the endangered Pohnpei Flying Fox) with impacts during constructions of a minor nature. PIU will coordinate additional monitoring of preconstruction, construction and post construction conditions for the Pohnpei Flying Fox to confirm the potential nature and scale (if any) of impacts and whether 'net gain' of critical habitat is required. Mitigation measures ensure the Project will have no net loss of biodiversity values for the natural habitat and Pohnpei Flying Fox.
ESS7: Indigenous Peoples	ESS7 is relevant but no separate plan or framework has been prepared for PRIME. All relevant requirements of ESS7 have been integrated into project design and the ESMF, RF, SEP and this ESMP.
ESS8: Cultural Heritage	ESMF risk screening and mitigation procedures includes cultural heritage identification and protection. The nature and scale of potential impacts on a cultural heritage site is currently being investigated in consultation with the community, cultural heritage specialists and heritage authorities to determine the tangible and intangible values of the location, the current legal protection (if any) and determine what impacts, if any, could occur from coastal protection works and road works near the site in accordance with ESS 8. A Chance Find procedure (CFP) is required in the CESMP to ensure appropriate measures are taken in the event that cultural heritage artefacts, including human remains, are encountered. A site of cultural significance to the local community has been identified and described in the ESMP and LADDR. The Contractor and PIU will need to consult with the community to clarify and demarcate permitted working areas that will not affect the culturally significant site
ESS10: Stakeholder Engagement and Information Disclosure	The SEP addresses all ESS10 requirements for PRIME. The SEP has been followed in the preparation of the Awak Bridge project. The SEP outlines the approach for community outreach and two-way engagement with stakeholders, in appropriate languages, and the inclusion of vulnerable and disadvantaged groups (poor, disabled, elderly). The SEP provides a summary of stakeholder engagement actions required for the pre-construction, construction and post construction phase and have been summarized in this ESMP. The ESMP will be disclosed on the relevant Pohnpei State and FSM websites and the WB's website and discussed at stakeholder engagement meetings.

iii) World Bank Group Guidance

27. The EHSg are technical reference documents with general and industry-specific examples of good international industry practice. When one or more members of the World Bank Group are involved in a project, these EHSg are applied as required by their respective policies and standards. The General EHSg are designed to be used together with the relevant industry sector EHSg which provide guidance on issues in specific industry sectors.
28. The EHSg contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. The applicability of the EHSg should be tailored to the hazards and risks established for each-project on the basis of the results of an environmental assessment in which site-specific variables, such as host country context, assimilative capacity of the environment, and other project factors, are taken into account. The applicability of specific technical recommendations should be based on the professional opinion of qualified and experienced persons. When host country regulations differ from the levels and measures presented in the EHSg, projects, where possible, are expected to achieve whichever is more stringent.
29. The General and Industry Sector EHSg and the International Standards and the International Standards and OHS Labor Guidelines are available at the following link – <https://www.ifc.org/en/insights-reports/general-environmental-health-and-safety-guidelines>

iv) International Standards and OHS Labor Guidelines

30. FSM is a signatory to a number of international conventions and treaties. Those potentially relevant to the Project are listed below.
 - (i) International Plant Protection Convention 1951.
 - (ii) World Heritage Convention 1972.
 - (iii) United Nations Convention on the Law of the Sea 1982.
 - (iv) Agreement relating to the Conduct of a Joint Program of Marine Geoscientific Research and Mineral Resource Studies of the South Pacific Region, with Appendices, 1982; with Related Agreement, 1984.
 - (v) Vienna Convention for the Protection of the Ozone Layer 1985.
 - (vi) Convention for the Protection of the Natural Resources of the South Pacific Region 1986; and companion protocols 1986.
 - (vii) Convention on Biological Diversity (CBD) 1993.
 - (viii) United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement 2016.

3) PROJECT DESCRIPTION

a) Location

31. The Awak Bridge is in Awak U, a small community approx. 5.5 miles from Kolonia, the commercial business district and state capital, on the primary circumferential road located at 769628N, 418568E (UTM-Coordinates) over the Pilen Kepin Awak stream confluence with Ocean \Lagoon in North-East quadrant of the island. The bridge and surrounding geography are provided in Figure 2. Saint Josephs Church, the Awak Community Center, the Awak Elementary School and several residential properties are adjacent to the proposed road and bridge works (Figure 3). The current vehicle speed limit is 15 miles per hour.
32. The bridge is one of the several cross-drainage structures along the circumferential road of Pohnpei Island and is structurally distressed, needing immediate replacement.

Figure 2: Awak Bridge and Surrounding Geography



Figure 3: Location and infrastructure upgrades associated with the replacement of Awak Bridge (including nearby community receptors)



b) Scope of Works

33. The existing 39 ft (12 m) concrete Awak Bridge is under distress and needs immediate replacement. This Project will replace the bridge and provide improvements to 1,150 ft (350 m) of road surface and drainage for the approaches. Embankment upgrades works on the ocean side of the road will be undertaken to reduce coastal erosion of the road. A number of safety features for vehicular traffic and pedestrian safety are also included in the design.
34. The improvements to the road and the design of the new Awak Bridge are detailed in the final design report "Pohnpei Vol 1 Main Report (September 2024)". The design life for the new Awak Bridge is 100 years. The design life for road / associated approaches is 25 years. The following activities are to be undertaken:
 - The old bridge will be demolished and a new bridge will be installed in the same location. The new bridge will be 14 ft (4.2 m) higher and approximately 6 ft (2 m) longer. A temporary, single lane, Bailey bridge will be installed and used whilst the present bridge is being removed, and the replacement bridge is being constructed.
 - These improvements enhance the hydraulic capacity of the bridge by reducing the possibility of flooding under the Representative Concentration Pathway (RCP) scenario 6.0 climate change scenario e.g. a raising of sea levels of 7.4 mm / yr and adoption of a 24-hr rain intensity for road / bridge design of 13.30 inches (50-year Average Recurrence Interval (ARI)) (see Table 2). ICT's decision to use RCP 6.0 scenario is consistent with World Bank's recommendation of precautionary approach (medium to high-end warming scenario) and meanwhile weighs the cost implications against the Project budget.
 - The road works will follow the existing alignment and upgrade the existing pavement and drainage. The road will be raised in some locations, generally to less than 1 ft, to lessen the chance of flood damage. The roadway surface will be upgraded using a flexible asphaltic concrete pavement with a design period of 20 years.
 - The two existing culverts are badly damaged. They will be cleaned out, removed, and replaced with new culverts of the same size, to reduce flooding of the roadway.
 - Rock armour layer stone will be provided on the ocean front embankments between the two culverts either side of the bridge, from chainage 375 ft to 710 ft. A total of approximately 270 ft of armoring will be provided.
 - There will be enhanced road safety measures to ensure safety of pedestrian movements e.g. foot paths, crosswalks and road lighting. Road vehicular safety measures include junction design to ensure smooth safety and traffic circulation, improved geometry ensuring safety of roadway users with adequate sight distance, improved signage and roadway markings to ensure safety especially at junction locations for crosswalk movement and provision of a reinforced concrete crash barrier.
 - Upgrades to existing parking areas and access points along the route will be completed.
 - Provision for relocation/upgrade of utilities as needed under the road wearing course or drainage easements.
 - Improved roadside drainage with oil and grit traps to be installed on outlets to enhance water quality discharge.

35. Consultation between the PIU and the landholders has been undertaken to provide river training using gabion mattresses or similarly approved devices to line both sides of the river, from 150 ft upstream from the current bridge. This is to reduce localized flooding.

i) Climate Change

36. An assessment of climate change and impacts on design of the Awak Bridge and roadways was undertaken in the Design Report. The climate change predictions used are summarized in Table 2.

Table 2: Recommendations for Design of Awak Bridge Based Upon Climate Change Scenarios⁶

Parameters	Awak Bridge (Pohnpei)
1. Design Life	
Design life for bridge (years)	100 years
Design life for road / associated approaches (years)	20 years
2. Sea Level Rise	
Rate of historical sea level rise for Pohnpei (mm / yr)	7.4 mm / yr under adopted RCP 6.0
Reference (source and / or web link)	Climate Risk Country Profile: Micronesia. World Bank.
Predicted rate of sea level rise for Pohnpei (mm / yr)	7.4 mm / yr under adopted RCP 6.0
Reference (source and / or web link)	World Bank Climate Knowledge Portal. https://climateknowledgeportal.worldbank.org/country/micronesia-fed-sts/climate-data-historical#:~:text=Rainfall%20is%20high%20on%20the,mm)%20in%20a%20given%20day
3. Tidal Waves	
Highest king tide in history (m)	5.88 ft
Year when highest king tide occurred	2017
Reference (source and / or web link)	Sea Level Center, University of Hawaii, https://uhslc.soest.hawaii.edu/stations/?stn=001#datums
4. Rainfall for Road / Bridge	

⁶ Final Design Report (Draft) [Awak Bridge - Pohnpei Volume I - Main Report (2024)]

Parameters	Awak Bridge (Pohnpei)
Design 24-hr rain intensity for road / bridge (mm)	13.30 inch (50-year ARI)
Reference (source and / or web link)	NOAA, https://hdsc.nws.noaa.gov/pfds/pfds_print_page.html?st=pp&sta=91-4751&data=depth&units=english&series=ams
Design height allowance for storm surge / flood for road / bridge (m)	9.81 ft (2.99 m)
Detailed justifications	HEC-RAS Modeling for the stream
5. Rainfall for Drainage	
Historical 24-hr rainfall (mm)	13.30 inch (50 year ARI)
Design 24-hr rain intensity for drainage (mm)	12.80 inch for culverts (20-year ARI) and 9.35 inch for side drains (10-year ARI)
Design discharge capacity for culverts (m ³ / s)	95 cusec for culvert at Ch. 370 ft and 309.2 cusec for culvert at Ch. 660 ft
6. Free Board	
Design free board (ft)	2 ft
Detailed justifications	LRFD Bridge Manual, Massachusetts Department of Transportation (MassDOT), USA
7. Overtopping	
Frequency (return period expressed in years)	No
Frequency (expected no. of times each year)	0
Expected hours for each overtop	0
Expected water depth for overtopping (mm)	0
8. OTHER	
	15% increase in rainfall intensity will be considered to cater the climate change impact as per Australian Rainfall-Runoff manual for RCP 6.0.

i) Demolition of the Existing Bridge

37. The existing concrete bridge will be demolished prior to the construction of the new bridge. The demolition process is not specified in the design document and will be agreed with ICT and PIU following the submission of the Method Statement by the contractor for this activity. The options are to use pneumatic or electric jackhammers, or a rock breaker attachment on an excavator, to break up the concrete in situ.
38. A barge or other facility will be placed underneath to collect all material as it is dislodged. Alternatively, concrete saws may be used to cut out larger sections of the bridge which will be removed by cranes, with little or no material being dislodged and requiring capture beneath the existing bridge deck. The concrete and associated reinforcing steel material will be captured for disposal or reuse.

ii) Road Upgrade

39. The pavement layers will consist of a soil subgrade layer of thickness around 1 ft., Granular Subbase layer of thickness 10" and granular base layer of 8" and Asphalt Concrete of 3". The road material removed will be reused or disposed of to landfill.
40. Access to the local residents' sites and other facilities, such as the church, will be facilitated by preparing upgraded driveways from the new road pavement level into the various landholding units. These are typically at a gentle slope of 4% and will facilitate easy access into the neighboring land holdings.
41. The volumes of key materials required for these works are shown in Table 3 with the likely sources of material listed. The source of the aggregate materials (sub-base, base course, concrete aggregate) will have to be imported from international sources. Potential sources are Guam, Philippines and Saipan registered licensed quarries.
42. During road works, the road will be constructed in two stages, left and right, and in separate sections along the existing road, with a temporary, single lane, Bailey bridge structure used to divert traffic whilst the bridge is replaced. This allows for one way traffic management by a flag person. Enough lighting provision will be maintained at the construction zone during night to allow for safe navigation of the site by vehicles. Traffic will be regulated through one lane areas by means of portable traffic lights in absence of flag people. Safety barriers will protect pedestrians from diverted traffic whilst construction proceeds.

iii) Bailey Bridge Construction and Launching.

43. The bridge is 13 ft wide and sits on concrete abutments anchored in the ground. The abutments will be manufactured off site near the Contractor's concrete batching plant then transported to site by truck.
44. The Bailey bridge abutments, when installed, will be semi buried in soil on the high banks of the stream. The abutments are 6 ft high, 2 ft thick and 20 ft long. A temporary road will then be diverted from the existing main road onto the diversion route, which will be backfilled with soil to the approximate level of the top of the concrete abutments.
45. The metal bridge components are prefabricated off-site by the supplier and are then reassembled on site using a mixture of pins and bolted connections. No land clearing is required, as the bridge will be reassembled in the parking facilities at St. Joseph church.
46. Cranes will be used to launch the reassembled Bailey bridge.
47. The concrete bridge abutments will no longer be required when Bailey bridge is recovered, disassembled and the individual components removed from site. These abutments will be demolished to the base of the footings, with soil replacement and

rehabilitation to prevent soil erosion. The concrete will be reused or disposed of as cover material at the local landfill.

iv) Bridge Replacement

48. The new bridge contains the following key elements (Figure 4):

- Reinforced concrete bridge abutments at each end, which are approximately 24 and 30 ft long respectively in the direction of the road alignment, and approximately 30 ft wide laterally, giving footprints of about 800 and 1000 ft² respectively.
- The reinforced concrete bridge deck level is at approximately RL 13 ft with the local ground level at approximately RL 1.9.
- The bridge abutments will be excavated to RL -15 ft and - 10 ft respectively.
- The central supporting reinforced concrete pier is approximately 30 ft wide and approximately 15 ft long at the base and will be excavated to a depth of 16 ft RL.
- The final Bridge Surface Level will be 4.2 ft above the existing bridge surface.

49. Cofferdams or similar will be installed around the bridge abutments and central pier during construction to provide dry work areas. Small coffer dams will be constructed at the base of each embankment when required, to allow water flows and therefore fauna movement during construction. If steel sheet piles are used, they will be installed into the waterway bed using either the impact or vibrating head methods. Should machinery require access to the stream for excavations or sheet piling, it will be mounted safely on a barge.

50. The soil excavated from within the coffer dam will either be reused and placed back into the coffer dam excavation following the construction of the relevant concrete works, with temporarily covered storage on site or taken directly to the landfill where it could be used as cover material.

v) Embankment Slope Protection for Coastal Erosion

51. The shoreline in close proximity to the existing bridge has been supported by a rock embankment to manage coastal erosion. This embankment is to be repaired.

52. To protect the road from coastal erosion, rock armour layer stone will be provided on the ocean front embankments between the two culverts either side of the bridge, from chainage 375 ft to 710 ft (including the bridge). A total of approximately 220 ft of armouring will be provided, utilizing the designs shown in Figure 5.

53. Sheet piling/sandbagging may be installed at the toe of the embankments in these tidal locations to prevent water ingress during construction.

vi) Upstream Flood Control

54. Consultation between the PIU and the landholders have been undertaken to provide stream training using gabion mattresses or similarly approved devices to be installed to line both sides of the Pilen Kepin stream, from 150 ft upstream from the current bridge site. This is to ensure bank stability and that the river flow is directed to the bridge and avoids erosion near the abutments. The contractor will be required to develop shop drawings to be approved by the construction supervision consultant and a hydraulic engineer before commencement of works.

55. Gabion baskets with rocks of Dn50 (nominal median stone diameter) 1.5-2 ft providing a top width of 3 ft, horizontal step setbacks of 0.5 ft, vertical lift of 4-5 ft, and a base width of approximately 10 ft long with scour protection will be installed, or equivalent.
56. The placement of gabions adjacent to the stream bank will be by hand. The mesh box will sit on the boulder-dominated stream bottom. Hand carried rocks will be dropped into the mesh box.

vii) Roadside Drainage and Culvert replacement

57. Roadside toe drain has been provided to receive discharge from embankment surface and countryside runoff and carry it safely to the nearest outfall point ensuring safety to the embankment toe, which is the area most vulnerable to erosion / failure. Roadside trapezoidal earthen drains has been generally provided on both sides of the embankment / fill section to safely carry the discharge from the embankment to the nearest outfall, without jeopardizing the safety of the toe.
58. Runoff water from the drain will pass through an oil and grit separator as part of the drainage network (Figure 6).
59. Two existing culverts will be replaced with the same size structures, namely 4' x 4' at the western end and 6.5' x 6.5' at the eastern end of the bridge (Figure 7). There is no requirement for easements across properties to discharge water as the existing two culverts (CH0+375 & CH0+650) will be replaced in their current location with new structures of the same dimensions.

viii) Road Safety – Construction

60. Traffic movement is to be maintained with minimal impact during construction, because there are no alternative routes. A traffic diversion plan has been prepared in several stages.
61. **Stage 1 Awak Bridge demolition and construction:** During the demolition of the old Awak Bridge and construction of the new bridge, traffic diversion is required at the construction location. Two-way movements will be maintained in the roadway on each side of the bridge during this stage.
62. A temporary diversion will be provided in the form of a single lane Bailey bridge (Figure 8). Traffic will be guided over the Bailey bridge during the day by flag people. Lighting provision will be maintained at the construction zone during night, and traffic shall be regulated by means of portable traffic lights in absence of flag people.
63. **Stage 2 & Stage 4 Left Hand Side Culvert Replacement:** The demolition and replacement of cross drainage structures and approaches on the left-hand side of the road including ancillary works with diversion plans requiring traffic to be reduced to one lane. Appropriate signage will be installed during construction to maintain one way traffic movement with help of a flag person on both sides. Barriers are to be provided to separate pedestrians from vehicle traffic during road work. Lighting provision will be maintained at the construction zone during night, and traffic shall be regulated by means of portable traffic lights in absence of flag people (Figure 9).
64. **Stage 3 & 5 Right Hand Side Culvert Replacement:** The demolition and replacement of cross drainage structures and approaches on the right-hand side of the road including ancillary works with diversion plans will require traffic to be reduced to one lane. Appropriate signage will be installed during construction to maintain one way traffic movement with help of a flag person on both sides. Lighting provision will be maintained

at the construction zone during night, and traffic shall be regulated by means of portable traffic lights in absence of flag people.

ix) Road Safety – Operations

65. The project includes purpose-designed entries/exits at driveways along the project length. For example, access to the local residents' sites and other facilities, such as the church, will be facilitated by preparing upgraded driveways from the new road pavement level into the various landholding units. These are typically at a gentle slope of 4% and will facilitate easy access into the neighboring land holdings.
66. The design includes the provision of reinforced concrete railing type crash barriers on both sides along the approaches to the bridge.
67. Traffic signage and markings are designed along the project road to guide, regulate and inform the road users in advance, especially for the Awak Elementary School Zone. Pavement markings will be made for traffic lane lines, center lines, edge lines and hatching etc. as per good international industry practice.

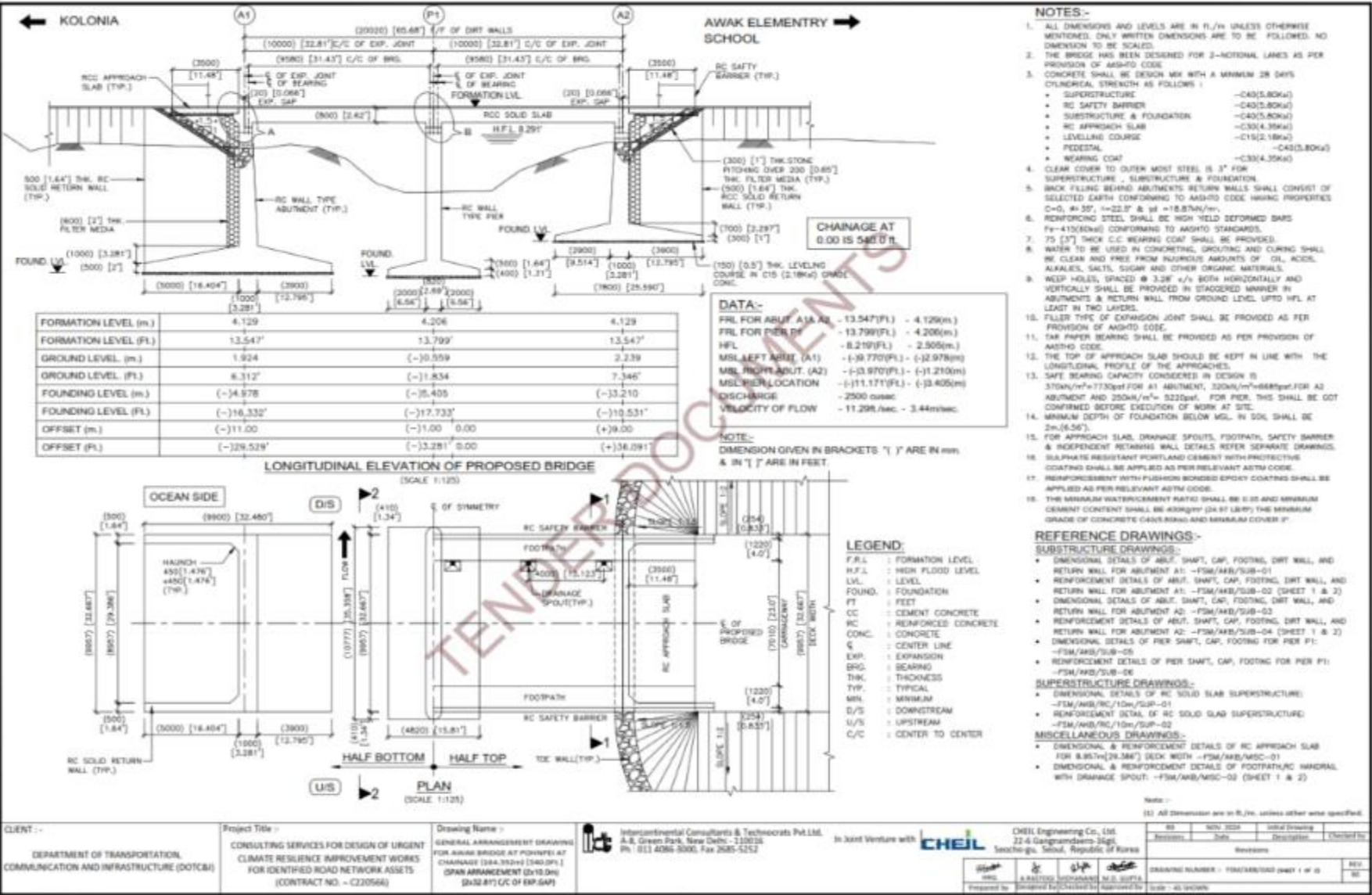
x) Pedestrian Safety - Operations

68. Raised Foot Path: A new raised foot path of 4'-00" for both sides of the of the roadway and Awak Bridge structure will be installed. This provision will assist existing residents, school children and the Saint Joseph Church visitors to safely traverse along the roadway.
69. Crosswalk & Raised Speed Table: Further to enhance the safety of pedestrians along the project roadway and facilitate cross movement, a crosswalk with signage and marking will be installed at design Ch. 665'.
70. Further to ensure the safety of school going children, a Raised Speed Table will be installed at two locations (Design Ch. 855' & 940') on both sides of the Awak Elementary School entrance. This will ensure the speed reduction of vehicles on the roadway and safe passage for children to cross the roadway (Figure 10).
71. The volumes of key materials required for these works are shown in Table 3 with the likely sources of material also listed.

Table 3: Road Material Construction Quantities

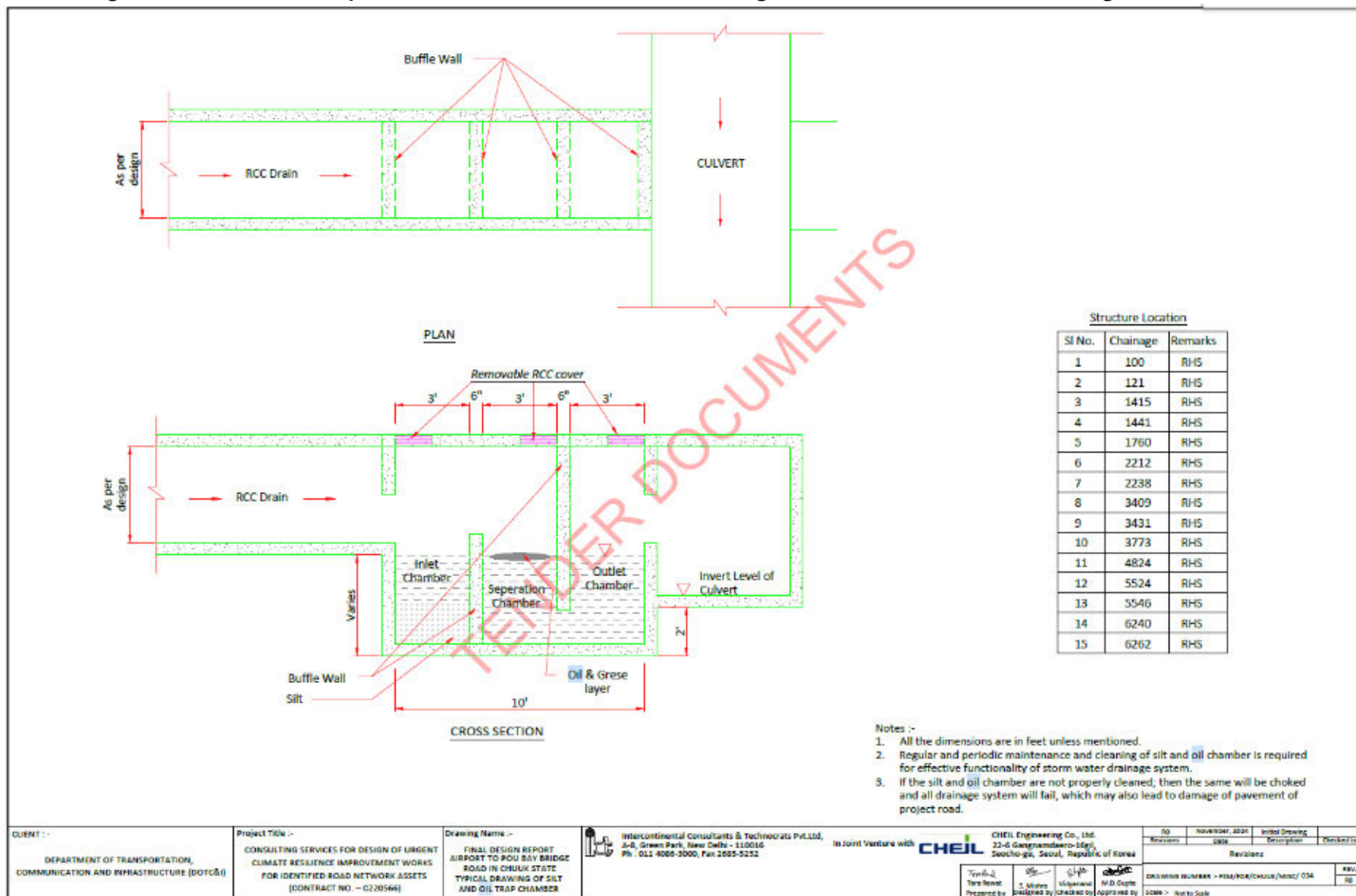
Road Pavement Quantities	Unit	Quantity	Source
Granular Base and Sub-base	cuft	86,305	To be imported to Pohnpei
Asphaltic concrete			Mixed in a batching plant before being transported to site, laid with a paver with electronic sensor, compacted with 8-10 tonnes vibratory roller, finishing and curing.
Bitumen	T	30.73	
Aggregate	cuft	7,590	Aggregate for asphaltic concrete to be imported .
Road Embankment Quantities		Quantity	Source
Fill			Construction of embankment with approved materials deposited at site from roadway cuttings, excavation from the drains, or borrow pits on Pohnpei.
Borrow Area	cuft	25,072	
Roadway cutting	cuft	29,961	
Subgrade	cuft	56,979	
Armoring Rock	cuft	3,809	
Stone pitching	cuft	2,031	
Concrete poured on site.	cuft	63,895	Mixed in a batching and mixing plant as per approved mix, transported to site and poured into forms.

Figure 4: Bridge Design and Levels.



28

Figure 6: Grit and Oil Trap Chambers at the Junction of the Longitudinal Drain and Cross Drainage Culverts



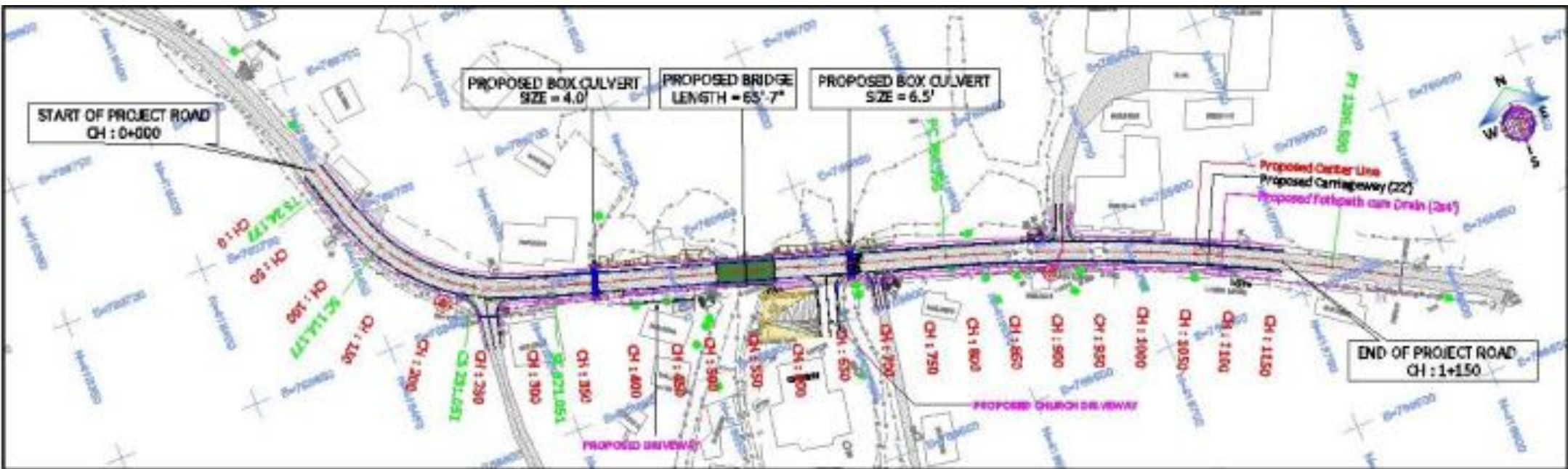


Figure 8: Site Diversion Plan Including the Bailey Bridge Location

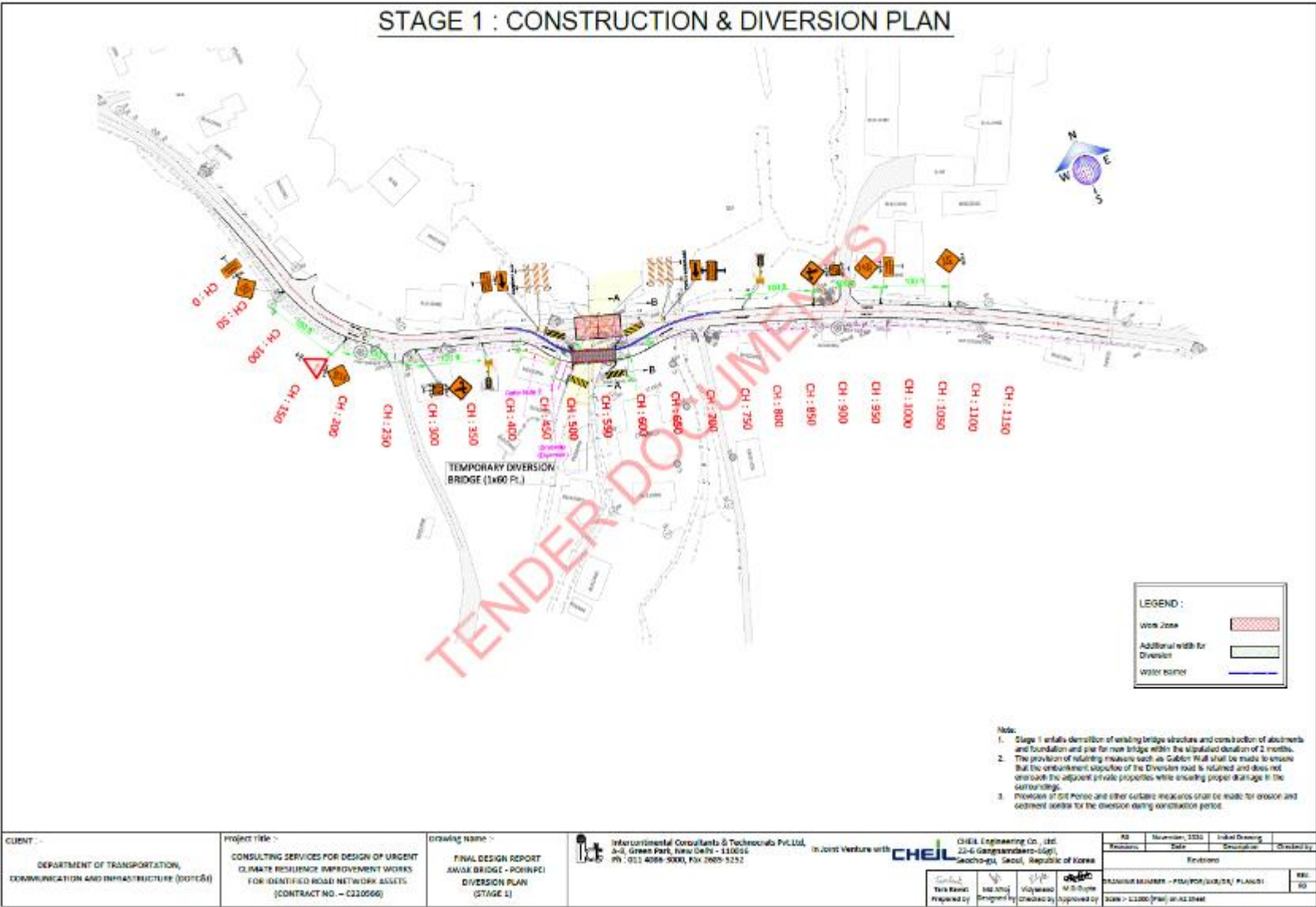


Figure 9: Typical Footpath Location and a Cross Section for Pedestrian Safety During Construction

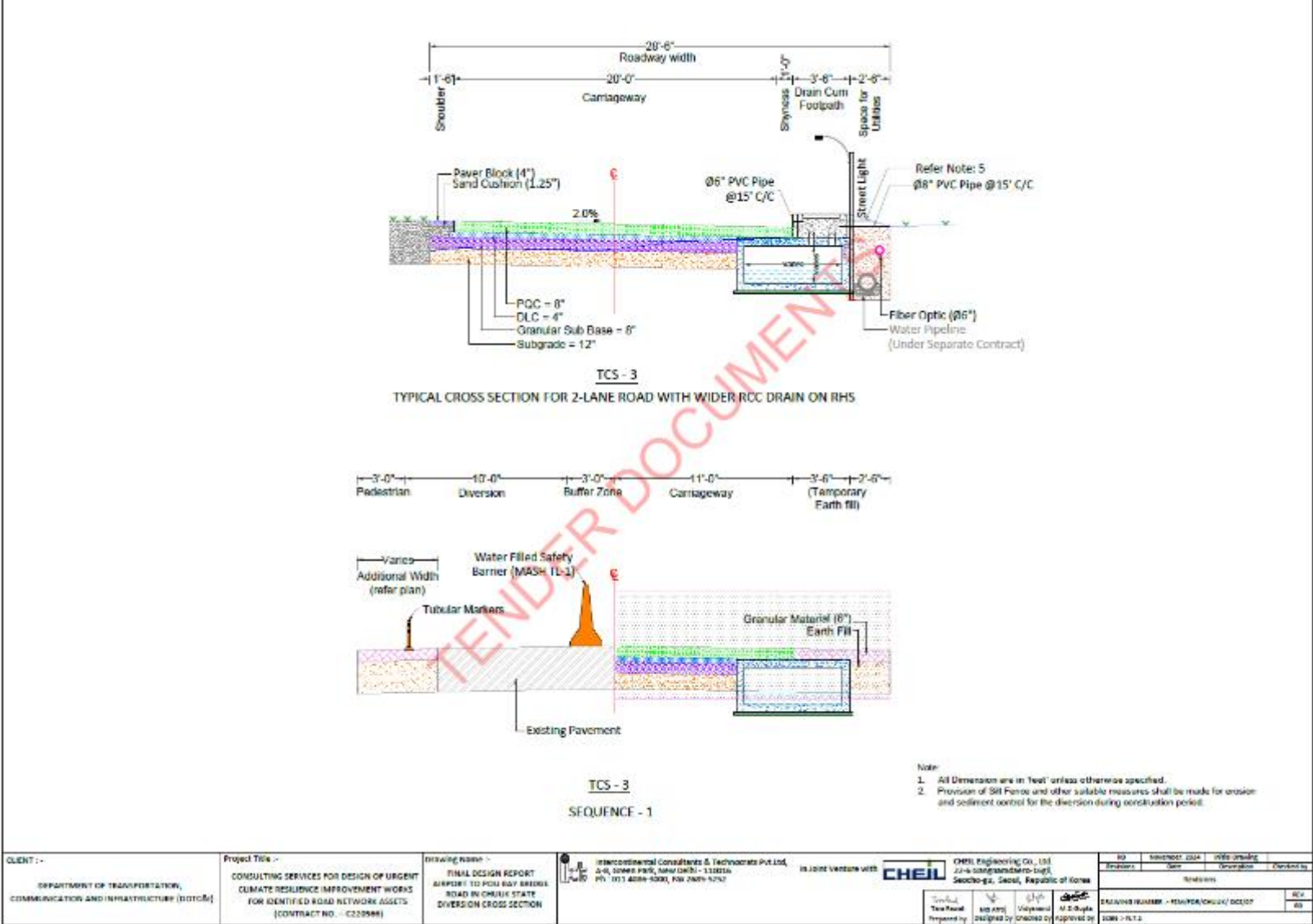
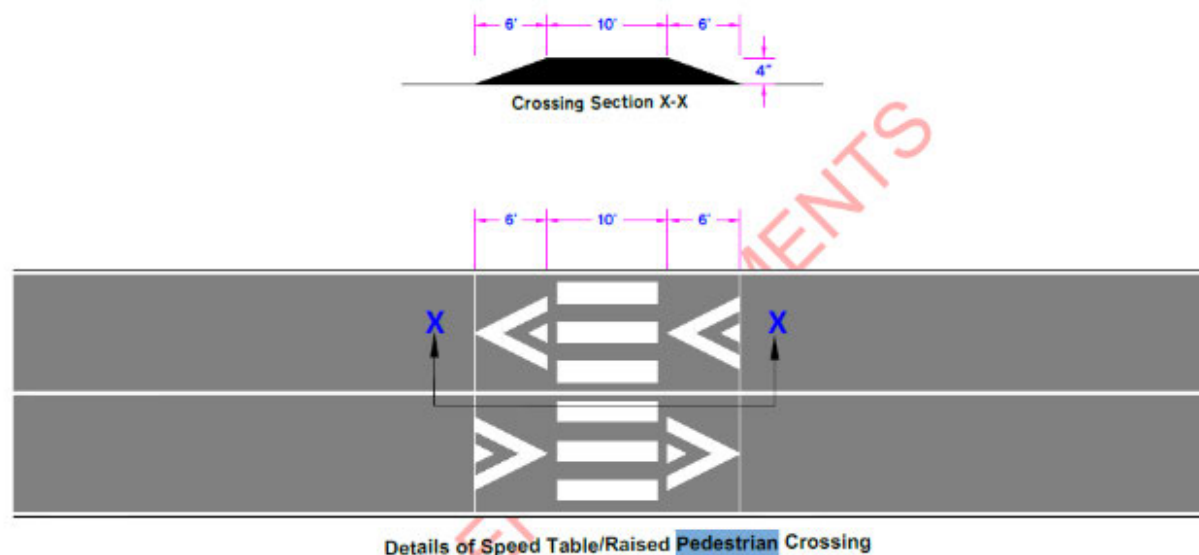


Figure 10: Typical detail of speed table



CLIENT :- DEPARTMENT OF TRANSPORTATION, COMMUNICATION AND INFRASTRUCTURE (DOT&I)	Project Title :- CONSULTING SERVICES FOR DESIGN OF URGENT CLIMATE RESILIENCE IMPROVEMENT WORKS FOR IDENTIFIED ROAD NETWORK ASSETS (CONTRACT NO. - C220566)	Drawing Name :- FINAL DESIGN REPORT AIRPORT TO POU BAY BRIDGE ROAD IN CHULUK STATE TYPICAL DETAIL OF SPEED TABLE	 Intercontinental consultants & Technocrats Pvt.Ltd, A-8, Green Park, New Delhi - 110016 Ph : 011 4086-3000, Fax 2685-5252	In Joint Venture with  CHEIL Engineering Co., Ltd. 22-6 Gangnamdaero 2gil, Seocho-gu, Seoul, Republic of Korea	<table><tr><td>NO</td><td>November, 2024</td><td>Initial Drawing</td><td></td></tr><tr><td>Revisions</td><td>Date</td><td>Description</td><td>Checked ()</td></tr><tr><td colspan="4">Revisions</td></tr></table>	NO	November, 2024	Initial Drawing		Revisions	Date	Description	Checked ()	Revisions			
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Scale :- NTS																	

xi) Land Access

72. To mitigate any direct impacts on properties, all project elements are within the agreed 50-foot-wide road right-of-way (ROW). The LADDR confirms that no land acquisition or involuntary resettlement is required for this Project.
73. To erect and use the temporary Bailey bridge, the contractor requires land to the south of the existing bridge that falls on private land. During consultations, the landowner confirmed that he was very supportive of the project and where the Bailey bridge requires use of land on either side of the 50-foot ROW, the owner, as well as the Saint Joseph Church leadership, were happy to agree to this. These agreements are attached in Appendix A – Community Consultation. The exact position of these temporary works is to be resolved directly with the contractor as part of the contractor's obligations. Land will be restored after the project, as agreed with the landowners.
74. Works can be carried out in the Pilen Kepin Awak stream without landowner approvals, as all rivers/streams wider than two (2) ft are managed by Pohnpei State with a public easement of ten (10) ft either side of the waterway (PSC-42SS4-109 – Reservations).
75. The Contractor will be responsible for identifying suitable laydown areas, including locations for concrete batching or bitumen, and negotiating short term leases with the landowners.

xii) Construction Timeline and Workforce numbers

76. The proposed timeline is for the roadworks to be completed is 12 months. Typical roadwork crews will consist of several expatriate engineers, as required, key personnel from Pohnpei and possibly neighboring FSM States / islands as part of the contractor's team.
77. There is local accommodation close by in Kolonia, 5.5 miles from the site for the workforce in hotels, apartments and rented housing. No workers' camps will be required.

4) DESCRIPTION OF THE ENVIRONMENT

78. This section characterizes the existing social and environmental context in which development will take place.

79. The project area of influence has been evaluated as follows:

- Landowners and occupiers adjacent to the road, stream and bridge (land use, construction nuisances, road works disruptions, changes to road layout, worker-related safety risks).
- Residents and businesses not adjacent the road but along the route (construction nuisances, road works disruptions and safety risks, worker-related safety risks).
- Road users from any location in Pohnpei (road works disruptions and safety risks).
- Pohnpei residents, particularly vulnerable women and children (worker safety risks).
- Pilin Pilen Kepin Awak stream and costal margins and waterways within 150 ft of the shoreline, including mangroves (bridge and gabion works, embankment works, noise and vibration, construction and operational stormwater discharges).
- Areas not able to be determined in the baseline are borrow pits, quarries and laydown areas, all of which will be located during the pre-construction or construction phases.
- Trees and flight paths inhabited by the endangered Pohnpei Flying Fox and Vulnerable Pohnpei Kingfisher (construction nuisances, vegetation clearing / trimming).

80. A series of photos taken along the roadway in December 2025 highlights some of the major features of the area. Highlights include:

- The Cir Island Road at U and Awak bridge looking eastwards in the direction of the road going towards the Saladak dispensary. Land use is dominated by peri urban housing (Photo A. Figure 11). The road and bridge looking westwards towards Kolonia (B). Land use adjacent to the Pelin Kepin Awak stream is dominated by housing, view of the underside of the bridge from upstream (Photo C) (Figure 11).
- The Pelin Kepin Awak is a small, shallow, fast flowing stream with a cobble stone substrate (Photo A). Directly downstream of the Awak Bridge is a marine embayment (Photo B). The stream at the culvert at Ch 660 is shown in (Photo C) (Figure 12).
- The Bailey bridge entry location on the Kolonia side and Saladak Dispensary side of the road (Photos A and B) and the Pelin Kepin Awak stream upside of the bridge with retraining wall (Photo C) (Figure 13).
- The installed temporary Bailey bridge to be used while the main bridge is being replaced, will be deployed on the southern of the road and adjacent to a single house, whilst the Bailey bridge will connect to the car park in the St. Joseph Church (Figure 14).
- Plants such as breadfruit, bananas and coconuts are well established in properties adjacent to the roadway.
- The Awak Elementary School and several houses are located on the eastern side of the bridge adjacent to the coastal area, locally known as Dekehr Awak.

Figure 11: View of the bridge and approach road from the Saladek Dispensary (A) View of the bridge and approaching road from Kolonia (B), view of the underside of the bridge looking downstream towards to the coast (C)



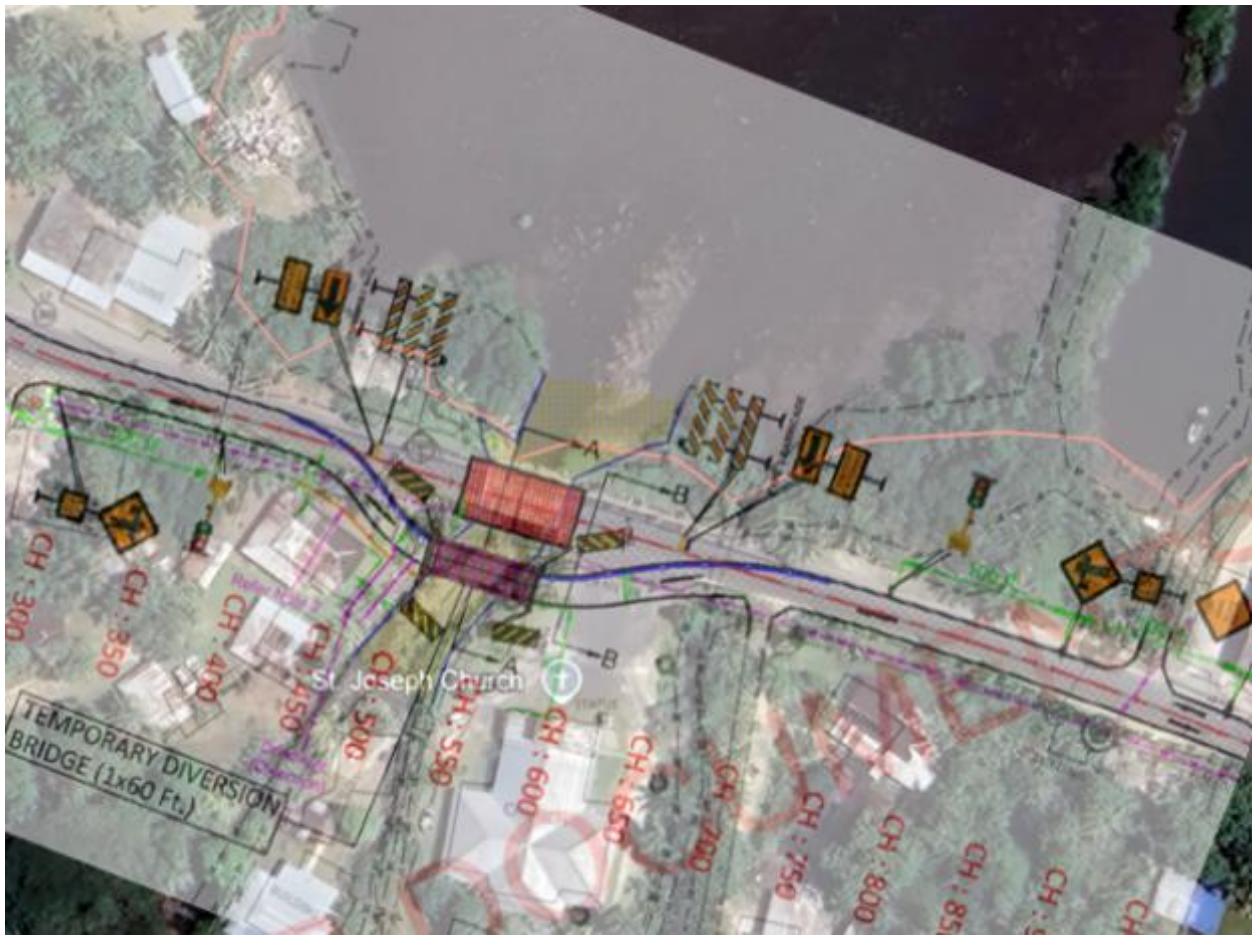
Figure 12: Upstream stream habitat from the bridge (A)/ Downstream marine habitat from the bridge (B), Stream at culvert CH 660 (C)



Figure 13: Bailey Bridge Entry Location on the Kolonia Side of the Road (A)/ Bailey Bridge Entry Location on the Saladak Dispensary Side of the Road (B), Stream Upstream Side of the Bridge (C)



Figure 14: Bailey Bridge Diversion Overlay on Satellite Imagery



a) Physical Environment

i) Topography

81. The road and bridge lie on the flat coastal plain, with bordering hills to the south and west. Runoff from these hills drains across the coastal plain, through fast flowing streams. The Awak Bridge is located near the shoreline of the ocean lagoon- Dekehrn Awak.

ii) Climate

82. Pohnpei belongs to the tropical rainforest climate zone (Köppen: Af). It is one of the wettest places on Earth with an average annual recorded rainfall of 4,775 mm (188.0 in) in towns along the coast and about 7,600 mm (300 in) each year in certain mountainous locations (Table 4).
83. The climate in FSM varies considerably from year to year due to the El Niño Southern Oscillation (ENSO). In Pohnpei, El Niño tends to bring drier conditions during the dry season, but higher than average rainfall during the wet season, and La Niña tends to bring above average rainfall in the dry season. Daily temperatures vary between minimums of 23oC and maximums of 31oC throughout the year.

Table 4: Climate data for Pohnpei

Climate data for Pohnpei													[hide]
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mean daily maximum °C (°F)	30 (86)	30 (86)	30 (86)	30 (86)	30 (86)	30 (86)	30 (86)	31 (87)	31 (87)	31 (87)	31 (87)	30 (86)	30 (86)
Mean daily minimum °C (°F)	23 (73)	24 (75)	24 (75)	23 (73)	23 (73)	23 (73)	22 (71)	22 (71)	22 (71)	22 (71)	23 (73)	23 (73)	22 (71)
Average precipitation mm (inches)	310 (12.1)	260 (10.2)	360 (14)	450 (17.6)	490 (19.4)	420 (16.6)	440 (17.2)	410 (16.3)	400 (15.9)	410 (16.2)	400 (15.9)	420 (16.7)	4,770 (187.8)
Source: Weatherbase ^[21]													

84. The long-term average rainfall over the FSM is projected by almost all models to increase. Models consistently project a greater increase in rainfall in May– October rainfall than in November–April rainfall.

iii) Natural Hazards

85. **Typhoons.** Numerous Typhoons (tropical typhoons) originate in the east each year, and as they are north of the equator, they usually progress to the northwest and seldom strike any other of the islands. Typhoons rarely hit Pohnpei, but tropical storms or depressions can affect Pohnpei. The last typhoon in February 2019 was Category 2 Typhoon Wutip which passed over Chuuk, Pohnpei, and Yap states with wind speeds of more than 100 miles per hour. The frequency of Typhoons across the region decreases from the west to the east except during El Niño years when Typhoons shift further to the east. During ENSO periods, global atmospheric disturbances including elevated seawater temperatures and lowered sea-level in the center of the ENSO affected area, rise in atmospheric temperature and the sea-surface temperature, may cause conditions for more frequent and severe storms. Projections across multiple climate change modelling indicate a likely decrease in typhoon formation across FSM. However, these models indicate an increase in rain intensity as well as wind.

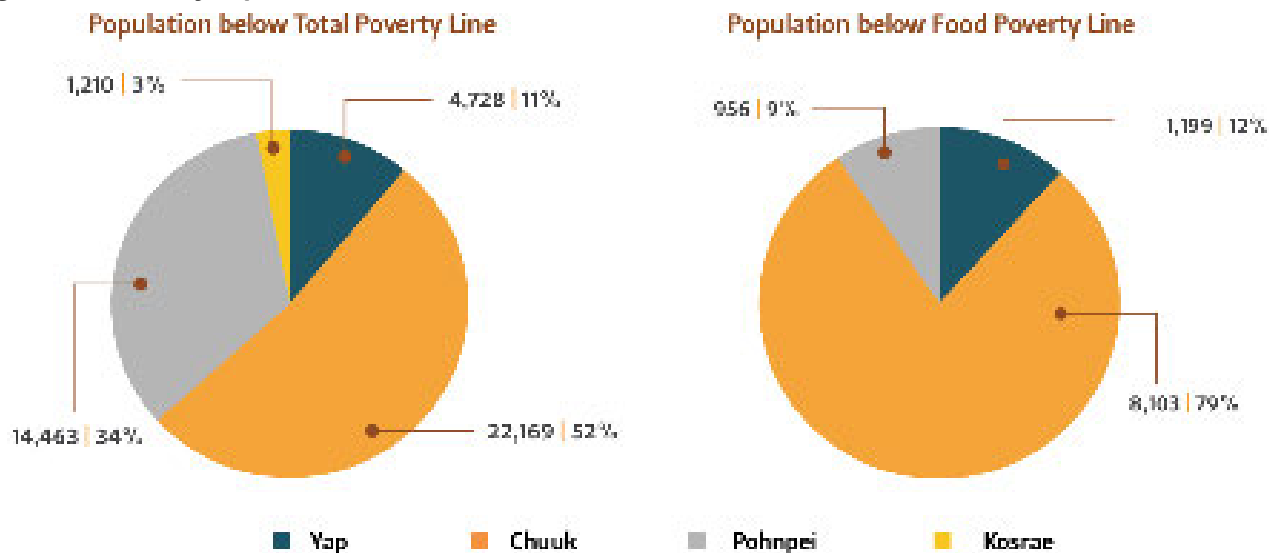
86. **Drought.** Pohnpei is vulnerable to periods of low rainfall sometimes associated with El Niño events, with severe drought events in the past. On February 20, 2016, an Emergency Declaration was issued due to severe drought damaging crops and water on Pohnpei and the outer islands estimated to be \$11.4million. More than 40 wildfires were reported. Water restrictions were imposed in Kolonia, with some residents only able to access water 2 hours per day. Prolonged drought associated with the 2015/16 El Niño event led to severe water shortages in Pohnpei State with widespread crop damage. June 2020 was the driest month in 69 years and July 2020 was the fifth driest month in a 70-year record at Pohnpei.
87. **Sea Level Rise.** FSM generally experiences rapid sea-level rise during periods of protracted La Niña conditions related to persistent trade winds in the north Pacific. This is usually followed by El Niño conditions which can decrease trade winds. During the El Niño event of 1997-1998 the sea level dropped by 1 foot below its long-term average and rainfall between December 1997 and February 1998 was 16% of the long-term average. Whether this will reduce the regional rate of sea-level rise in coming years is unknown. Sea water levels can be exacerbated by trade winds blowing across the surface and causing build-up of surface heights against obstructions such as pacific islands. These effects may reverse over time and then repeat. This is in addition to global warming effects on sea level rise. Sea level projections under the RCP 6.0 modelling indicate a rise in levels of approximately 23cm by 2050, increasing to 72cm by 2100.
88. Local relative sea level in the FSM is measured at Pohnpei by tide gauges maintained by the University of Hawaii Sea Level Centre. The record indicates a long-term sea level rise rate of 3.10 mm / year.

b) Socio-economic Environment

89. **Roads on Pohnpei:** This section of road is part of the primary circumferential road in Pohnpei. The primary road network is paved and varies in road surface condition, whilst outside of the State capital, the road network is in very poor condition. There is no alternative route through this section of road. The current bridge condition is structurally very poor and without replacement or intervention, is at risk of collapse. This would cause major disruptions to the community that relies on this bridge for their day-to-day lives. Impacting schooling, local business, access to healthcare and general community activities (church, family, etc.).
90. A LADDR has been prepared confirming that there will be no land acquisition nor physical or economic displacement under the project. A registered, 30-foot (9.14 meter) ROW exists over the full road length. All work remains within the ROW except the Bailey bridge diversion as discussed above.
91. **Health facilities:** There is one state hospital and one health center and seven dispensaries. These services are available for the construction crew. If the Awak bridge became too unsafe to travel on. It would result in a 49-mile detour (if travelling east to west) to access to the major hospital or other healthcare facilities in Kolonia. For community members that rely on these services on a regular basis, a bridge collapse or closure would cause additional mental stress and financial burden.
92. **Livelihoods and Employment:** The majority of the population live in the coastal areas of Pohnpei, the mountainous interior is largely uninhabited. Less than half of the population (22%) live in the urban area of Kolonia. For those that are employed and working for salaries and wages, over half are involved in education (24.6%), public administration and defense (18.6%), wholesale/retail trade and motor vehicle repair (9.7%) and health and social work (9.1%).

93. The 2017 Poverty report, shown in the pie diagram below, indicates that Pohnpei at 34% is the second highest State for Population below the Total Poverty Line (Figure 15).

Figure 15: Poverty report



94. **Waste Management:** The island is serviced by the Dekehtik landfill which faces capacity issues, requiring expansion and better management. Recycling services are very limited due to lack of on island processing capacity and cost of export to overseas markets.
95. **Local community:** The local community is described in Section 3 (a) and includes low density residences, St Joseph Church and the Awak Elementary School. Major facilities such as health care, banking, shopping, education can be found in Kolonia. The local communities rely on the Awak bridge to commute to the capital city for work, business and recreation. This bridge is also used to access the Pohnpei International Airport. In 2024, ~14,044 vehicles were recorded using the road during the day.
96. **Cultural heritage:** At the community consultation meeting in November 2024, there was an important cultural item identified at the project site. Mangroves adjacent to the bridge have a storyline whereby it is considered to be a burial site for dwarfs, or small humans who existed in the past, and that this area needed to be considered and respected during all phases of the project (Figure 16). Ongoing consultations with the landholders are being undertaken to understand and respect their needs during the construction phase.

Figure 16: Location of culturally important mangrove forest adjacent to the Awak bridge



97. There are 12 designated and proposed (12 areas) protected areas in Pohnpei. None of these areas are in the project area of influence. The closest are: i) Dehpehk Takaïou Marine Sanctuary which lies 5 kms to the east of the Awak Bridge and ii) the Sapwtik Marine Sanctuary which lies 5 kms to the northeast of Awak Bridge.

c) Biological Environment

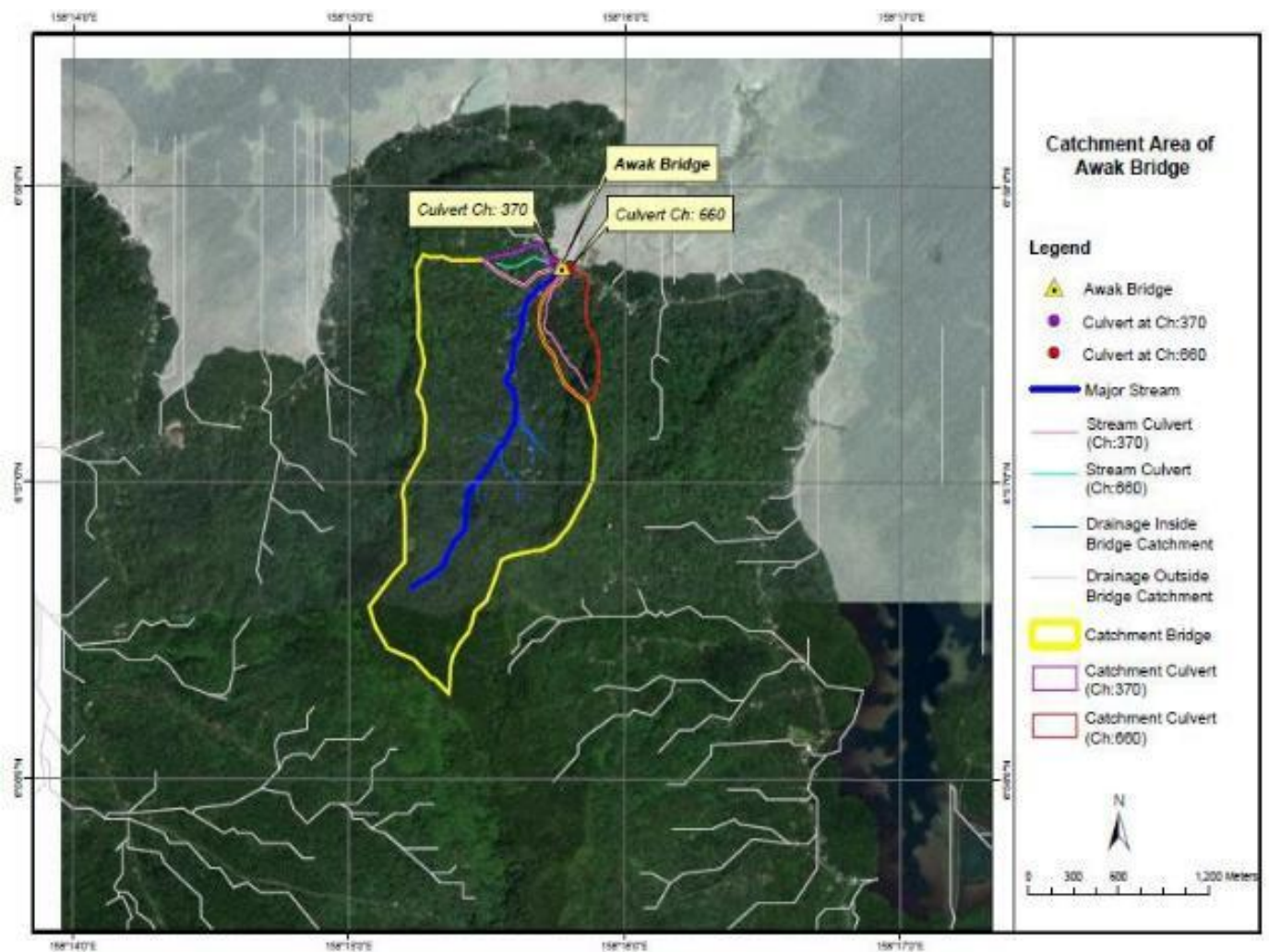
98. **Baseline Studies:** The biological baseline studies for the project site have been completed. Baseline conditions are described where possible in quantitative terms and, where not possible, in qualitative terms. The description makes use of relevant information provided from government resources supplemented by additional information collected via site observations, flora and fauna surveys and community consultation.

i) Coastal Area, Freshwater Stream and Marine Embayment

99. Observations of the coastline and stream were conducted in November 2024 and June 2025. The methodology included direct observation within the marine and freshwater areas upstream and adjacent to the proposed road upgrades with photographic documentation.
100. The catchment parameters of the Pilen Kepin Awak Stream which passes under Awak Bridge before discharging into the marine embayment Dekehn Awak, are shown in Table 5. The properties of the two smaller catchments which also discharge into Dekehn Awak via two culverts (Figure 17). All catchments are predominantly forested with animal husbandry (pigs) and small scale agro-forestry / gardens.

Table 5: Catchment Parameters

Parameter	Pilen Kepin Awak	Stream catchment for Culvert at Ch. 370	Stream catchment for Culvert at Ch. 660
Catchment Area	0.88 sq. miles	0.24 sq miles	0.08 sq miles
Longest Stream Length	1.565 miles	0.27 miles	0.62 miles
Fall in height	1154.5 ft	151 ft	764 ft

Figure 17: Catchment Area Map for Awak Bridge and culverts

101. The Pilen Kepin Awak stream is small, steep and fast flowing. Directly upstream of the bridge, the stream banks are well stabilized with a revetment wall and well vegetated riparian areas, indicating no recent erosion events. The stream bed is dominated by small boulders, adding stability to the stream channel. reducing the potential for scouring and erosion during heavy, localized rainfall
102. Upstream of the bridge, the streambed is dominated by small to medium gravels and cobbles. The ~20 ft wide, fast-flowing stream is shallow and clear, with filamentous algae on the substrate but no macrophytes due to the good flow and low nutrients. Nutrients likely originate from decaying vegetation and animal husbandry waste in the catchment.
103. Within 100 ft upstream of the bridge, Giant Mottled Eels (*Anguilla marmorata*) were present. This species is common in Pohnpeian rivers, and is the largest freshwater predator, holding cultural significance, as they are considered sacred by most locals and not eaten. Tilapia (*Oreochromis niloticus*), an introduced invasive fish, was also observed.
104. The proposed location of gabions further upstream in the Pilen Kepin Awak Stream (~ 1000 ft from the bridge) are in riparian areas of agroforestry which includes breadfruit, mangoes and coconuts on the banks of the stream. The instream habitat is the same to that previously described.
105. The two roadside culverts receive water from two smaller catchments before discharging into the marine embayment. Water quality is expected to be of a similar quality to that of the Pilen Kepin Awak stream due to the similarity in catchment land uses and vegetation cover.
106. The stream, after passing under the Awak bridge, enters the coastal embayment where flows dissipate. During periods of heavier rainfall, sediment runoff increases in these catchment streams and is deposited into the embayment (Figure 18) (see Victor et.al (2006)⁷.
107. The fringes of the Dekehn Awak embayment is dominated by red mangroves (*Rhizophora stylosa*) and black mangroves (*Lumnitzera littorea*) (Figure 16) as a result of this sedimentation and protection from wave action by fringing coral reefs. There is local mangrove habitat of ~ 60,000 sq ft is within a 1000-foot (1/5 mile) radius of the road. These are occasionally cut back by the community for both safety and beautification (Figure 20).
108. Seagrass beds and corals are largely absent in the near shore embayment as sediments reduce light penetration in the aquatic environment and limit the photosynthetic activity of both seagrass and coral. When the rate of sedimentation is high, any established seagrass beds are smothered and the benthic habitat degraded (Figure 18). However, despite this land-based sediment run off, the embayment still supports a diverse range of habitats (mangroves, seagrass and coral) out to the coral fringing reef.

⁷ Sedimentation in mangroves and coral reefs in a wet tropical island, Pohnpei, Micronesia (2006) Victor S, Neth L ^b, Golbuu Y ^{a c}, Wolanski E ^d. Richmond R in Estuarine, Coastal and Shelf Science Volume 66, Issues 3–4, February 2006, Pages 409-416

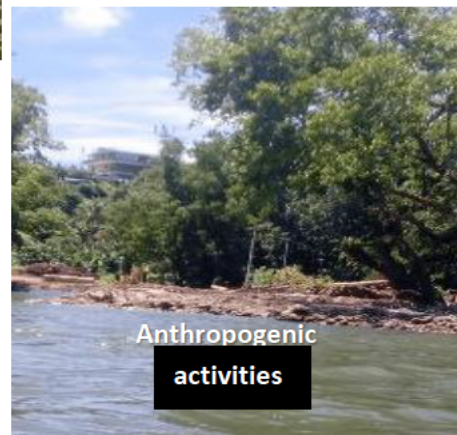
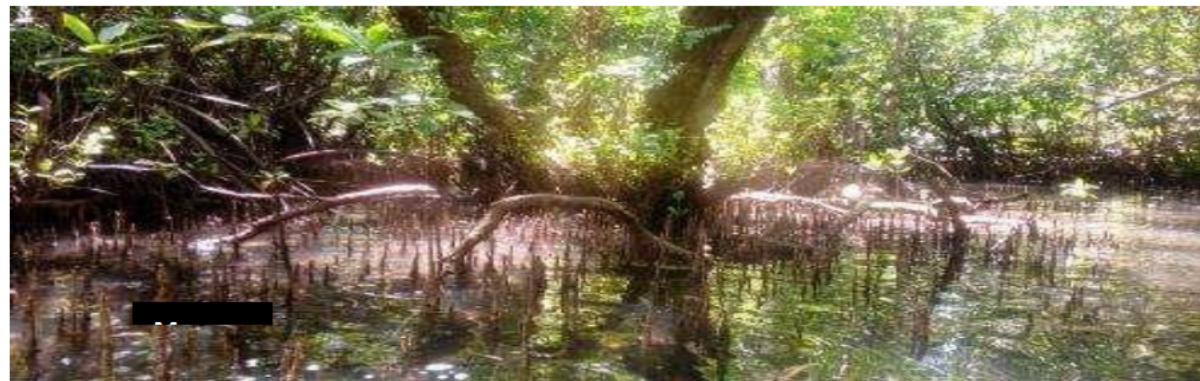
Figure 18: Key features of the Embayment Adjacent to Awak Bridge



Figure 19: Intertidal Zone Below the Project Site, Largely devoid of any Seagrass Meadows.



Figure 20: Field Observation of Mangroves at Awak Bay.



ii) Terrestrial and Coastal Vegetation

109. The road and bridge corridor is a well-established urban and peri urban area with residential properties and community buildings lining both sides of the road. The plant species are a mix of disturbed, cultivated species or ubiquitous native species, and are highly tolerant of disturbances.
110. On the hillsides around the project site, there is a mix of agroforestry (tree crops, forest trees above fruit and multipurpose trees, and an understory of shrubs, root crops, and herbaceous plants and native vegetation) and native vegetation.
111. Mangroves (see Section 4 (d) dominate the nearshore marine vegetation.
112. Plants present in the road, bridge corridor and embankment are listed in Table 6 and their locations shown in Figure 21 - Figure 24. Vegetation is dominated by croton, coconuts, breadfruits, mangos and frangipani (Figure 25 - Figure 28). There are no native or endangered vegetative species. There is also no significant presence of terrestrial invasive species.

Table 6: List of terrestrial flora identified during site walkover (November 2024) and IUCN classification.

Common Name	Scientific Name	Notes
Frangipani (Least Concern)	<i>Plumeria rubra</i>	Ornamental tree; fragrant flowers; drought-tolerant
Red Mangrove (Least Concern)	<i>Rhizophora mangle</i>	Coastal stabilizer; prop roots; critical for shoreline protection. feeding site for the Pohnpei flying fox, <i>Pteropus molossinus</i>
Sea Almond (Least Concern)	<i>Terminalia catappa</i>	Broad-leaved tree; edible fruit; shade provider
Screw Pine (Least Concern)	<i>Pandanus tectorius</i>	Coastal species; edible fruit; used in weaving and traditional crafts
Coconut Palm (Not Listed)	<i>Cocos nucifera</i>	Economically vital; source of food, fiber, and construction materials. Food source for the Pohnpei flying fox, <i>Pteropus molossinus</i>
Black Mangrove (Least Concern)	<i>Avicennia germinans</i>	Salt-tolerant; pneumatophores for respiration; stabilizes upper intertidal zones. feeding site for the Pohnpei flying fox, <i>Pteropus molossinus</i>
Breadfruit (data deficient)	<i>Artocarpus altilis</i>	Staple food crop; starchy fruit; used in traditional agroforestry systems. Food source for the Pohnpei flying fox, <i>Pteropus molossinus</i> .
Mango tree (data deficient)	<i>Mangifera indica</i>	Tropical fruit tree; long-lived and shade-giving. Food source for the Pohnpei flying fox, <i>Pteropus molossinus</i> .
Croton (Not Listed)	<i>Euphorbiaceae (family)</i>	Colourful-leaved plant, native to Malaysia and the Pacific and extensively cultivated.

Figure 21: Vegetative Mapping East of Awak Bridge



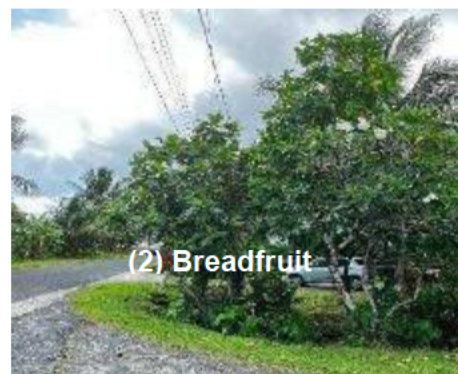
**Figure 22: Vegetation Mapping on Western Road Diversion Zone (Private) – 3
Trees and shrubs (Crotons)**



Figure 23: Vegetative Mapping East of Awak Bridge



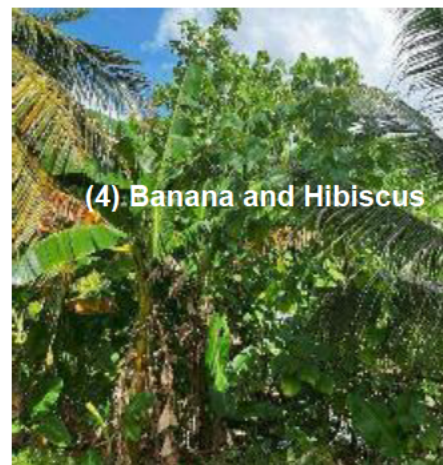
(1) Screw pine



(2) Breadfruit



(3) Black and Red mangrove



(4) Banana and Hibiscus

Figure 24: Vegetation Mapping on Eastern Road Diversion Zone (St. Joseph church) - 4 Trees, shrubs + Utility Pole

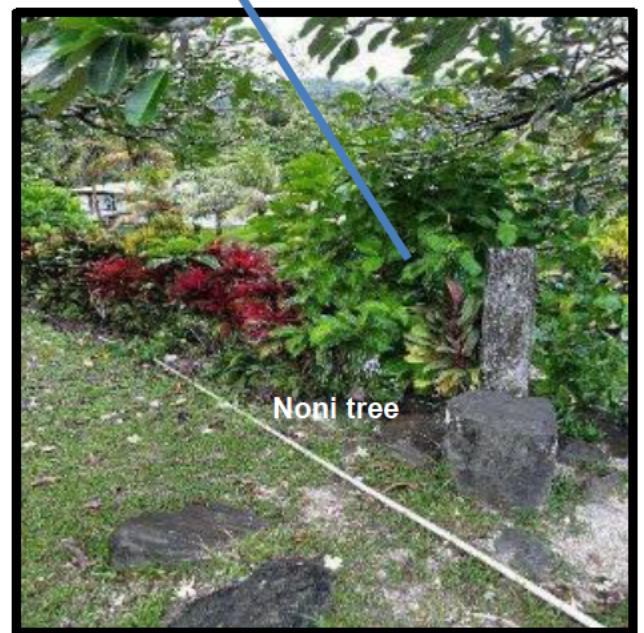


Figure 25: Vegetation at the culvert location on the western side of the Awak bridge - Ocean side (A)/ Mountain side (K)



Figure 26: Vegetation at the culvert location on the eastern side of the Awak bridge - Ocean side (A)/ Mountain side (B)



Figure 27:Vegetation overlay for embankment work along the eastern side of the Awak bridge



Figure 28:Vegetation overlay for embankment work along the western side of the Awak bridge



iii) Aquatic and Terrestrial Fauna

113. Aquatic and terrestrial fauna observations were undertaken in June 2025. The species identified are listed in Table 7.

Table 7: List of Fauna observed during field observations and IUCN Classification.

Common Name	Scientific Name	Type	Notes
Pohnpei Flying Fox (Endangered – IUCN)	<i>Pteropus molossinus</i>	Mammal	Endemic; Keystone species; forest regenerator; frugivorous
Pohnpei Kingfisher (Vulnerable – IUCN)	<i>Todiramphus reichenbachii</i>	Bird	Relatively common, endemic to the island of Pohnpei
Giant mottled river eel (Least Concern – IUCN)	<i>Anguilla marmorata</i>	Fish	Common in Pohnpeian rivers as the largest predator in the aquarian ecosystem; culturally significant as most Pohnpeians consider them part of human clans and are thus sacred and not eaten
Pacific Reef Heron (Least Concern – IUCN)	<i>Egretta sacra</i>	Bird	Found on reef flats, mangroves and shorelines
Island Land Crab (not listed)	<i>Gecarcoidea natalis</i>	Crustacean	Terrestrial; migratory; moisture-dependent
Orbulate Cardinalfish (Least Concern – IUCN)	<i>Sphaeramia orbicularis</i>	Fish	Mangrove-associated; near shore and thrives in anthropogenic influenced areas (e.g. sea walls)
Rabbit Fish (Least Concern – IUCN)	<i>Siganus canaliculatus</i>	Fish	Herbivorous; seagrass-associated; venomous spines; preferred food
Rock flagtail (not listed)	<i>Kuhlia rupestris</i>	Fish	Common in Pohnpeian rivers; generally, not eaten
Pacific Bluetail Skink (not listed)	<i>Emoia caeruleocauda</i>	Reptile	Found throughout the landscape; in gardens and grassy areas; eats various insects – Least Concern IUCN
Pohnpei White eye (Least Concern - IUCN)	<i>Zosterops ponapensis</i>	Bird	Endemic; excellent pollinator and seed disperser; very active and usually seen in pairs - Least Concern IUCN

114. **Conservation Status and Threats:**

Pohnpei Flying Fox (*Pteropus molossinus*)

115. The Pohnpei Flying Fox (*Pteropus molossinus*) is classified as endangered according to the IUCN Red List due to several threats.⁸
116. Whilst important upland forests are protected in the 5,000 ha Pohnpei Watershed Forest Reserve, lowland roosting and foraging forest habitats are threatened on Pohnpei from continued degradation and loss due to shifting, small-holder, and agro-industry agriculture, including for kava (Merlin and Raynor 2005).⁹ Furthermore, logging is occurring in some areas. The past threat of hunting and export for the luxury food markets outside Pohnpei is not expected to renew unless dramatic changes happen within Micronesia (Merlin and Raynor 2005).¹⁰
117. The bat favours tropical dry forests, mangroves, and native fruit trees (Lavery and Flannery, 2023)¹¹. The species has been recorded in areas of native tropical forest and mangroves on Pohnpei (G. Wiles, pers. obs.) and in Cocos forest on both Ant and Pakin Atolls (Buden 1996 a,b).¹²
118. The bats roost in forest canopies with tall trees. Their foraging area includes agricultural areas, particularly those with fruit-bearing trees. They also consume fruits from native plants, with a noted preference for fruits from palm trees in the genus *Clinostigmmand*, the genus *Pandanus* and flowers, including those from the coconut tree and the kapok tree (*Ceiba pentandra*) (Flannery 1995¹³).
119. Unlike some other flying fox species, it is not typically very social. Individuals usually roost singly or in pairs, though colonies as large as 300 individuals have been documented. (Flannery 1995¹⁴).
120. Climate change is a major emerging threat to island flying foxes around the world and *Pteropus molossinus* is no exception. Typhoons, although infrequent in Pohnpei, typhoons have been documented to both kill flying foxes and severely damage forest habitat (Wiles and Brooke 2009)¹⁵.

⁸ Waldien, D.L., Wiles, G., Buden, D.W. & Obispo, B. 2020. *Pteropus molossinus*. The IUCN Red List of Threatened Species 2020: e.T18741A22084572. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T18741A22084572.en>.

⁹ Merlin MD, Raynor W. Kava cultivation, native species conservation, and integrated watershed resource management on Pohnpei Island. *Pac Sci* 59(2): 241-260.

¹⁰ Merlin MD, Raynor W. Kava cultivation, native species conservation, and integrated watershed resource management on Pohnpei Island. *Pac Sci* 59(2): 241-260.

¹¹ Lavery, T.; Flannery, T. (2023). *Mammals of the South-west Pacific*. CRC Press. pp. 177–178. ISBN 9781032254401.

¹² Buden, D. W. 1996. Reptiles, birds, and mammals of Ant Atoll, eastern Caroline Islands. *Micronesia* 29:21-36 and Buden, D. W. 1996. Reptiles, birds, and mammals of Pakin Atoll, eastern Caroline Islands. *Micronesia* 29: 37-48.

¹³ Flannery, T.F. 1995. *Mammals of the South-West Pacific and Moluccan Islands*. Comstock/Cornell, Ithaca, Ny, USA

¹⁴ Flannery, T.F. 1995. *Mammals of the South-West Pacific and Moluccan Islands*. Comstock/Cornell, Ithaca, Ny, USA

¹⁵ Wiles, G.P., Brooke, A.P., 2009. Conservation threats to bats in the tropical Pacific islands and insular Southeast Asia. In: Fleming, T.H., Racey, P.A. (Eds.), *Island Bats: Evolution, Ecology, and Conservation*. University of Chicago Press, Chicago, Illinois, USA, pp. 405–459.

The Pohnpei Kingfisher - *Todiramphus reichenbachii*

121. *T. reichenbachii* is listed as a Vulnerable species (IUCN) and is endemic to Pohnpei. The bird is found in a wide variety of habitats throughout the island of Pohnpei, including the edges of mangroves, lowland forest and also marginal and modified habitats with plenty of timber (Fry and Fry 1999, del Hoyo et al. 2001). The nest is in a burrow excavated in rotten wood, with laying taking place in August (Fry and Fry 1999).¹⁶ Nests are typically carved high in the forest canopy, often in larger termite mounds that have more volume and contiguous surrounding canopy.¹⁷
122. The primary threat is the potential arrival of brown tree-snake *Boiga irregularis* on Pohnpei. This invasive predator lead to the decline and extinction in the wild of *T. cinnamominus* on Guam.
123. Although the species is known to use a range of habitats, it may have historically suffered some negative effects from deforestation, which has been rapid. Overall, there was a reduction of undisturbed upland forest on Pohnpei of over 60% from 1975 to 1995 (Buden 1996, 2000).¹⁸
124. The majority of the island's forests have been converted to various degrees or at least degraded to mixed forest (native species mixed with lowland secondary species), largely attributable to the cultivation of sakau (= kava) *Piper methysticum* as a major cash-crop (B. Raynor in litt. 2012). The fragmentation of such forest by sakau clearings also introduces and encourages the spread of invasive species in isolated areas throughout the forest.¹⁹
125. ESS6 habitat assessment
126. **Natural Habitat:** The instream and marine habitats, though affected by land-based sediment run off, still support a diverse range of habitats (mangroves, seagrass and coral) within the broader context of the embayment out to the coral fringing reef.
127. According to ESS 6²⁰ habitats affected by human activities are typically still considered as Natural Habitats if such activities are still supported. Table 8 describes the habitats against the criteria in the ESS6 Guidance Note.

¹⁶ BirdLife International. 2017. *Todiramphus reichenbachii*. *The IUCN Red List of Threatened Species* 2017:e.T22726585A116969455.<http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T22726585A116969455.en>

¹⁷ Kesler, D.C., and Haig, S.M., 2005, Selection of arboreal termitaria for nesting by cooperatively breeding Micronesian Kingfishers *Todiramphus cinnamominus reichenbachii*: Ibis, v. 147, no. 1, p. 188-196, <https://doi.org/10.1111/j.1474-919x.2004.00387.x>.

¹⁸ Buden, D. W. 1996. Reptiles, birds, and mammals of Ant Atoll, eastern Caroline Islands. Micronesia 29:21-36 and Buden, D. W. 1996. Reptiles, birds, and mammals of Pakin Atoll, eastern Caroline Islands. Micronesia 29: 37-48.

¹⁹ BirdLife International. 2017. *Todiramphus reichenbachii*. *The IUCN Red List of Threatened Species* 2017:e.T22726585A116969455.<http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T22726585A116969455.en>

²⁰ Environmental & Social Framework for IPF Operations - ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

Table 8: Analysis to support the classification of Natural Habitat Values ESS 6 for the Freshwater and Marine habitats

Definition in ESS6 Guidance Note	Natural Habitat Values
Is this habitat officially declared as habitat by the local or FSM government.	No, the work area has not been declared an official habitat by the local or FSM Government
There has been limited impact on the species composition or ecological function of the habitat.	The Pilen Kepin Awak Stream supports high ecological values including the habitat of the Giant Mottled Eel (<i>Anguilla marmorata</i>) known for its mottled pattern and large size (females up to 2 meters) despite any high sediment loads during rainfall. The nearshore mangrove habitat is vigorous and well established. The marine habitat out to the coral fringing reef continues to support seagrass beds and corals.
Form part of a long-term pattern of traditional use, to which native species assemblages have adapted.	Both the nearshore mangroves and the native instream flora and fauna species assemblages including the Giant Mottled Eel (<i>Anguilla marmorata</i>) have adapted to changes in traditional use.
Previous threats are no longer prevalent, and the habitat supports a mature and diverse community of predominantly native species; or have not profoundly affected the habitat's ability to recover its former ecological characteristics.	Dredging and land reclamation activities are no longer being undertaken and native species e.g. mangroves dominate the nearshore embayment. and the Giant Mottled Eel (<i>Anguilla marmorata</i>) The previous land reclamation and associated dredging activities have not profoundly affected the ecological characteristics of the embayment with mangroves dominating the nearshore with seagrass beds and coral established closer the fringing coral reef. Residential housing and other infrastructure has not profoundly affected the ecological values of The Pilen Kepin Awak Stream and the habitat of the Giant Mottled Eel (<i>Anguilla marmorata</i>).

128. **Critical Habitat:** Based upon the documented behavior of the Pohnpei flying fox and the Pohnpei Kingfisher, the vegetation communities in and around the project area provide Critical Habitat for the Pohnpei flying fox and the Pohnpei Kingfisher defined by

ESS6, likely to meet the criteria of ' (a) *habitat of significant importance to Critically Endangered or Endangered species, as listed in the IUCN Red List of threatened species or equivalent national approaches; (b) habitat of significant importance to endemic or restricted-range species;*'. The baseline observations did not conclude whether the habitat was of '*significant importance*' to the Pohnpei Flying Fox and the Pohnpei Kingfisher, so the Critical Habitat classification is precautionary.

d) Conclusions

- Sensitive neighborhood receptors include Awak Elementary School, local residents, and St. Joseph Church.
- The Awak Pilen Kepin Stream and marine embayment are designated as natural habitats.
- Mangroves adjacent to the bridge have a storyline whereby it is considered to be burial site for dwarfs, or small humans who existed in the past, and that this area needed to be considered and respected during all phases of the project. Ongoing consultations with the landholders are being undertaken to understand and respect their needs during the construction phase.
- The stream and marine area are considered Natural Habitat as defined by ESS6.
- The mangrove and garden habitats within the project's area of influence are classified as Critical Habitat on a precautionary basis due to the presence of the endangered Pohnpei Flying Fox (*Pteropus molossinus*) and the Vulnerable Pohnpei Kingfisher (*Todiramphus reichenbachii*). Although baseline observations did not establish whether these habitats are of 'significant importance' as defined under ESS6, the confirmed occurrence of these threatened and restricted-range species warrants a precautionary Critical Habitat designation.

ANTICIPATED IMPACTS AND MITIGATION MEASURES

a) Overview

129. This section provides an assessment of the likely impacts of the road upgrades and Awak Bridge replacement on the physical, biological, and socio-economic receptors and identifies measures to ensure potential environmental and social impacts will be avoided or managed/reduced to acceptable levels. The impact assessment process follows a methodology whereby sensitive receptors are identified, magnitude of impacts established, mitigation is presented, and eventual residual impacts are presented. The risk management measures will be incorporated into the project phases as follows:

- **Pre-construction phase** – the period from the preparation of this ESMP to the time that the ‘notice to proceed’ is issued. This ESMP will be included in technical specifications and bidding documents. The successful contractor shall prepare a CESMP.
- **Construction phase** – the period from the time that the ‘notice to proceed’ is issued to the contractor to when the ‘certificate of completion’ is issued. The contractor will complete the project as per the design and technical specifications and implement the measures included in the approved CESMP, and any conditions on licenses issued by the Pohnpei EPA. This process will be monitored and documented by the PIU with the assistance of the ICT and CIU E&S Team.
- **Operation and maintenance phase** – the period starting when the ‘certificate of completion’ has been issued until the end of the agreed lifetime of the improvements. DTC&I will be responsible for implementing the measures identified in the operation phase of the ESMP.

b) Key Design Elements

130. The detailed design has addressed the following risks to meet WB ESS and stakeholder feedback.

- Raising of the Bridge Surface Level 4.2 ft (1.279 m) above the existing bridge surface to negate impacts of climate change (ESS 1 and 3 – Climate adaptation).
- The adoption of road safety measures in the form of foot paths, crosswalks, solar studs and lighting ensures the safety of pedestrian movements (ESS 4 – Community Health and Safety).
- A road safety assessment was completed, as per ESS 4 – Community Health and Safety and a number of improvements were adopted including:
 - Reduced post speed limit for vehicular movement;
 - Provision of Footpath either one side or both side;
 - Provision of roadway lighting;
 - Provision of cross walk and Raised Speed Table at the location of Awak Elementary School;
 - Traffic signage and markings;
 - Provision of Solar studs along the roadway edge;

- Flood and water quality improvements by increasing the culvert sizes, replacing two culverts, longitudinal drainage channels and outfall points, oil and silt traps on drain outlets (ESS 3 - Resource Efficiency and Pollution Prevention);
- Armour rock layer for slope protection is designed to negate coastal erosion and enhance road safety (ESS 1 and 3, ESS 4 – Community Health and Safety);
- Works will take place in the gazetted 50-foot-wide RoW Road corridor and there is no need for resettlement (ESS 5 - Land Acquisition, Restrictions on Land Use and Involuntary Resettlement).
- A series of detailed traffic management designs have been annotated in the bid documents to separate pedestrians and vehicles during construction (ESS4 Community Health and Safety).

c) Pre-Construction Phase

131. **Preparation and approval of CESMP.** Prior to works commencing at the project site, the contractor will prepare and submit a site specific CESMP to the PIU. The CESMP will detail the construction methodology and program to be undertaken, identify the risks associated with that construction methodology and detail site-specific mitigation measures to avoid or reduce the risks, including occupational health and safety. The PIU and World Bank will review the CESMP and the PIU and World Bank's "no objection" is required before the Contractor can start work.

132. The PRIME grievance redress mechanism will be adapted to the Project in the CESMP to address concerns and resolve complaints and issues raised on any aspect of Project and project implementation.

133. **Sourcing of construction materials.** The location of fill and base course materials has not yet been identified. The Contractor will organise this during mobilisation. Therefore the site-specific risks and mitigation measures cannot be determined in this ESMP. Significant impact on coastal processes, habitats and / or cultural values can occur from the operation of coastal or reef rock quarries. Therefore, the following mitigation measures are required:

The contractor will

- Source material only from licensed local, inter-State or international land-based sources of sand, soil, gravel and rock (i.e., quarries) to be used (i.e. no coastal – lagoon sand and coral reef / rock to be used).
- Supply agreements must comply with the LMP relevant for the risks to significant OSH risks to quarry workers.
- PIU and the Contractor will screen the source of materials [vendor] that the contractor must perform due diligence to ensure the vendor's quarry is registered and operates legally. The Contractor shall confirm Commercial Supplier is permitted and approved /licensed compliance with the Part 3 of the FSM EPA Earthmoving Regulations of 1988 and applicable Pohnpei regulations
- Preparation of a supplementary ESMP or CESMP will be required prior to supply to the Project, and the Project shall not use material sourced from:

134. The Contractor shall provide a record of the asphalt/bitumen batching plant permit for all asphalt/bitumen used on the site.

135. If aggregate material is imported then State regulations will also need to be met. Invasive Pest Species: Implementation of GIIP mitigation measures (vehicle washing, sourcing weed free aggregates, fumigating aggregates etc) will ensure all GoFSM biosecurity measures are implemented minimizing the risk of invasive pest introductions. In addition, the aggregate material imported from offshore will need to meet any State and ESS requirements, which includes impacts managed through the implementation of Codes of Practice (CoP) for quarry and dredging operations and ensuring materials such as aggregate and equipment meet strict biosecurity precautions and clearance for imported materials, as well as adherence to the World Bank Group EHS Guidelines for construction material extraction²¹.
136. In case of quarry material, the FSM States have existing quarry sites, which have been previously used for road maintenance and construction activities. These sites will require further investigation to determine whether they can supply suitable material (both quality and quantity) to meet the needs of both Projects works. The investigation of the quarry sites will be completed before commencement of the construction works.
137. **Alien and invasive species.** During mobilization there is a risk that equipment and materials bring in new and / or invasive species to Pohnpei in the Pacific have developed higher rates of endemism compared to similar sized areas on continents due to geographical isolation. Many endemic species are vulnerable to competition, predation and over-browsing. Furthermore, invasive species can affect crops and livestock on which Pohnpei communities rely on for livelihoods and food security. Bio-security controls for imported gravel, rock and machinery is required to meet the acceptable biosecurity cleanliness standards of the relevant authorities or be refused entry into FSM/Pohnpei. Where materials, equipment and machinery are sourced outside Pohnpei, it is the importer's responsibility to ensure these arrive in Pohnpei free from biosecurity risk material, such as soil, seeds, plant, and animal material. This mitigation will significantly reduce the potential for this project to introduce new or invasive species.
138. Invasive weeds are not present in large numbers along the road corridor. The minor vegetation clearances and the road raising and resealing will not change the presence or distribution of weed species because works are in a very small footprint in a highly modified environment.
139. **Land access and use.** Land access will be reconfirmed by the contractor with support from PIU prior to works starting and at any time where new land may be required due to changes in design or construction methodology.
140. There will be a need for the contractor to establish a laydown or storage area. St. Joseph Church officials have agreed with the PIU to set aside parts of the car park for laydown during construction. The contractor will be required to mitigate any new road hazards as a result of alternative parking arrangements.
141. **Disruption to utilities and services.** There is a requirement for earthworks and other construction activities along the road projects not to cause disruption to existing services. These services drawings were reviewed by the Design team and noted in the drawings and dialogue in the Design Report.
142. Before construction activities, DoFA, DTC&I and the PIU, and the contractors will:
- coordinate with the local authority to confirm the locations of the water supply pipeline

²¹ Source: Section 5.5.1.9 of the ESMF PRIME & SCORE.

- coordinate with local authority regarding potential disruptions to electricity and other services, including telecommunications;
- make provisions to preserve the operation of current facilities

143. **Mobilization of workers and laydown areas.** The mobilization of the contractor and initial establishment of work sites will require the presence of construction workers and subsequent interactions with the local residential (urban and rural) and business communities. While the workforce will be relatively small, they will be in Pohnpei for approximately 24 months. Risks to the community range can include offenses due to cultural insensitivities, transmitting diseases (such as HIV/AIDS), violence, sexual harassment and sexual exploitation and abuse (SEA/SH).

144. Prior to contractor mobilization to the site, the PIU and contractor will establish a communications protocol for the project with relevant elements of the GRM to be reflected in the contractor's CESMP. Measures to minimize disturbance by construction workers and presence of the works site/area include:

- A Code of Conduct is to be signed by all employees to ensure that workers' actions at the work site are appropriate and meet community standards including acceptable behaviour for the reference to Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), alcohol restrictions, respect for Pohnpei customs, land tenure, and community protocols and behavior around women, elders, and vulnerable persons, prohibition on entering private/customary land, and rules for behavior in community-facing areas and undergo training in these areas.
- The contractor will identify a member of their staff to act as liaison officer between the communities and contractor and manage the GRM;

145. A small number of construction sites and storage/laydown areas will be required by the contractor during construction. Where these temporary facilities will be used, the following activities will be followed:

- The Contractor will be responsible for identifying suitable laydown areas, including locations for concrete batching or bitumen plants. The location of the concrete batching plant will be determined by the contractor in consultation with the PIU, the ICT and the Pohnpei EPA. The contractor will obtain landowner approval in accordance with the RF and be approved by the PIU and ICT prior to mobilization.
- Suitably remote from sensitive receptors (noise and dust) and access to a suitable road network for hauling material in and product out. Water and power connectivity are required and sufficient area for agitator truck wash down bays to facilitate washing water recycling. Wash water will be captured, treated, and recycled for the next batch or for cleaning purposes including dust suppression, preventing uncontrolled release of alkaline wastewater to the environment. Storage of hazardous materials is also required. The designated washout area must have a sealed collection basin with associated ground protection.
- A detailed Protocol for management of temporary Land Access and Restoration for the Contractor to follow is shown below.

146. **Temporary Land Access and Restoration Protocol** - Applicable to Contractor Laydown Areas, Storage Yards, Worker Facilities, and All Temporary Use Sites - ESS5 – Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement

Purpose and Scope

This protocol governs the identification, approval, use, and restoration of all temporary land access areas required for construction. All such areas are treated

as potential ESS5 land access until due diligence confirms land status, access terms, user rights, compensation/rental arrangements, and restoration obligations.

The protocol applies to all land outside the Road ROW that the Contractor intends to occupy temporarily.

Pre-Use Requirements (Due Diligence File)

Before any occupation, the Contractor shall prepare a **Temporary Land Access Due Diligence File** containing:

- Land status confirmation (public, private, customary, mixed).
- Identification of landowners, customary right-holders, and current users.
- Consultation records with all relevant parties.
- Documented access terms, including:
 - Duration and boundaries of the area
 - Permitted activities and hours of operation
 - Access arrangements for landowners/customary users
- Compensation or rental basis, if applicable.
- Restoration obligations, including reinstatement standards and waste removal.
- Sign-off requirements (landowner/user + PIU/Supervision Consultant).

No mobilization or occupation may occur until the PIU approves the due-diligence file.

Management During Use

The Contractor shall:

- Occupy only the approved boundaries.
- Maintain cleanliness, security, and safe access for landowners/customary users.
- Prevent nuisance impacts (noise, dust, runoff, traffic).
- Manage stockpiles, fuel, chemicals, and waste in accordance with the CESMP.
- Record and respond to any complaints through the GRM, with immediate notification to the PIU.
- Maintain a site logbook documenting inspections, incidents, and GRM cases.

Restoration and Demobilization

At the end of the temporary use period, the Contractor shall:

- Remove all temporary structures, stockpiles, waste, and contaminated materials.
- Regrade, stabilise, and reinstate surfaces as per the agreed restoration plan.
- Restore drainage, access paths, and vegetation where required.
- Conduct a joint inspection with landowners/users and the PIU.

- Obtain written completion sign-off from landowners/users and the PIU.
- Close out any related GRM cases.

No demobilization payment or final certificate shall be issued until restoration and sign-off are complete.

Monitoring Indicators

- Due-diligence file approved before occupation
- Boundary compliance (weekly supervision checks)
- Number and resolution of GRM cases related to temporary use areas
- Restoration completed and signed off within agreed timeframe
- No outstanding land access disputes at project close

147. **Workplace hazards and traffic management:** Road works are in public spaces and it is easy to expose adults and children to workplace hazards such as traffic, heavy machinery and trip hazards. In order to protect the public from hazards, the contractor will ensure the following, starting in the mobilization phase:

- Adequate signage and security provided at the work sites and prevention of unauthorized people (including children) entering the work sites;
- Provision of adequate protection to the public close to the work site, including notice of commencement of works, installation of safety barriers where required and signage or marking of the work areas;
- The contractor will need to undertake a survey to understand peak times and flows and reflect the findings in the TRSMP as part of the CESMP; and
- Provision of safe access across the works site to people and businesses whose access is temporarily affected during road rehabilitation activities.

148. **GBV, SEA/SH Risks:** Risks to the community from workers can include offenses due to cultural insensitivities, transmitting diseases (such as HIV/AIDS), violence, sexual harassment and sexual exploitation and abuse (SEA/SH).

149. All contracted workers are required to sign a Code of Conduct (CoC) before they start work which outlines acceptable behavior for the workers and their role, including reference to Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) and undergo training. STIs and HIV/AIDS awareness and prevention programs will be delivered through an approved service provider for workers and communities. First community sessions to be delivered prior to commencement of works or presence of workers in the area.

150. **Pohnpei Flying Fox and the Pohnpei Kingfisher Survey.**

151. The endangered Pohnpei Flying Fox (*Pteropus molossinus*) and the Vulnerable endemic Pohnpei Kingfisher (*Todiramphus reichenbachii*) species are declared globally endemic by the IUCN.

152. Suitable roosting, breeding, and foraging areas remain under threat, in particular for the Pohnpei Flying Fox, outside of the project's area of influence.

153. The biodiversity management requirements of ESS6 will be met by maintaining the functionality of critical habitat values and ensuring that project activities do not result in measurable adverse impacts on endangered or vulnerable species.

154. If either species is confirmed, the Contractor will update the CESMP with a set of adaptive management measures based upon the recommendations of the preconstruction study. Ongoing construction-phase monitoring will assess any behavioral changes or potential impacts associated with project activities. Where monitoring indicates emerging risks or measurable impacts, adaptive management measures will be implemented to avoid or minimize any net loss of these species throughout the project duration.
155. Any residual net loss identified through the monitoring program can be offset by establishing a robust baseline of population size, distribution, and behaviour for these species. This baseline will provide the scientific foundation needed to design and implement targeted conservation actions. By generating high-quality ecological data and directing it into evidence-based conservation initiatives, the project can contribute to measurable improvements in the status of these species and support the achievement of a net-gain outcome.
156. The monitoring program is described in Appendix C.
157. **Gabion Design:** Before gabion installation, the Contractor must submit the design and an associated hydrological analysis report to check for bed and bank erosion or movement. Any design changes needed will be made to ensure baseline conditions remain acceptable. The Works Supervising Engineer's approval is required before installation starts.

d) Construction Impacts and Mitigation

158. Prior to commencement, the Contractor is responsible for allocating sufficient human resources, equipment and budget to implement the CESMP. The Contractor's Environmental, Health and Safety Officer (EHSO) will conduct awareness raising, training, implementation support and monitoring of compliance of activities with the approved CESMP. The ICT will undertake inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP. PIU will devise the checklist to be used for the inspections and audits and will consolidate the inspection/audit findings along with summaries of the contractor's monthly reporting. World Bank will undertake review missions which will report on, inter alia, overall implementation of social and environmental safeguard requirements.
159. All workers and subcontractors will be inducted to the site, and this will include awareness and training on the provisions and requirements of the CESMP and how it is to be implemented.
160. Construction impacts may be caused by the following activities:
- Operation of construction plant and vehicles generating dust, noise, and vibration;
 - Earth movements, grubbing and excavations leading to likely erosion and sedimentation;
 - Working in water ways and coastal marine area during the construction of embankments, bridge abutments and culverts and the water diversion works that are required to be undertaken;
 - Construction waste disposal, pollution from hazardous materials and wastewater management;
 - Stockpiling of construction materials such as sand and gravel, leading to loss of materials and water quality impacts;
 - Road formation, reshaping, filling, and sealing leading to loss of materials and

water quality impacts;

- Creation of roadside drains and stormwater drainage, including working in natural waterways and coastal areas;
- Heavy vehicles working in an existing road environment with pedestrians and road users, leading to interactions between pedestrians and vehicles; and
- Concrete batching at the laydown area / Contractor's yard generating noise, dust and stormwater contaminants;
- Local quarrying of soil, sand or gravel generating noise, dust and stormwater contaminants and occupational health and safety hazards;
- Rehabilitation of the embankments, including works in the coastal marine area;
- Activities in waterways to demolish and install bridge structures;
- Transportation of construction materials, causing road safety issues, dust and noise among the community along the haul routes;
- Occupying car parking areas for the diversion works;
- Contractor employing local and overseas workers creating labor and working conditions risks and SEA/SH risks to the community; and
- Construction activities generating occupational health and safety hazards and risks such as working with cement, working in noisy and dusty environments, working with heavy machinery.

161. During construction, a small number of construction sites and storage/laydown areas will be utilized by the contractor. These have the potential to cause nuisance from dust, noise and traffic impacts. Where these temporary facilities are used, the following commitments will be followed:

- Obtain land owner approval in accordance with the RF and signed off by the PIU and ICT prior to mobilization;
- be contained within an adequate security fence;
- not interfere with the welfare of the surrounding communities with noise and dust;
- prevent the release of untreated sanitary waste or grey water;
- workshops and fuel storage areas will drain to an oil and water separator;
- fuel storage areas will not be located within 20 m of a water course; and
- located on a road with sufficient capacity to avoid traffic impacts.
- for equipment cleaning (all sites) – should only occur in the laydown area, in a location where there is ground protection and wash/waste water collection.

i) Pelin Kepin Awak Stream

162. The following aspects are considered to have potential impact on the ecology of Pelin Kepin Awak Stream requiring mitigation.

163. **Soil and erosion – road and drainage works / abutment work for the Bailey bridge - Pelin Kepin Awak Stream.**

164. Sediment will come from open works areas, where base course and associated soil stockpiles will be exposed to rainfall. Sediment runoff from road and drainage works and the stream banks during the preparation and installation of the Bailey bridge abutments is likely.
165. Together with naturally high sediment levels in the stream during rainfall events, additional sediment loads will result in cumulative impacts on the ecological functions of the stream.
166. The very high rainfall frequency and intensity on Pohnpei exacerbates the risk of sediment-laden stormwater runoff. As there is no 'rainy season' this risk is present all year round.
167. Additional sediment loads in the stream lead to an increase in turbidity, which reduces light penetration in the aquatic environment, limiting the photosynthetic activity of phytoplankton, as well as smothering benthic flora and fauna (invertebrates and periphyton).
168. The contractor will be required to implement the ESCP as part of their design work and CESMP. Measures to prevent sediments from moving offsite include:
 - A combination of either small interceptor dikes, pipe slope drains, silt fence, sediment traps, and temporary sediment basins or other controls will be used during road works, the replacement of the two culverts and construction of the Bailey bridge.
 - Earthworks and areas to be exposed should be carefully planned, and disturbances to be minimized to the maximum possible extent.
 - Clean stormwater will be diverted away from disturbed areas.
 - Soil / gravel stockpiles are to be located and contained (e.g. bunding, covered) to prevent any discharge of sediment.
 - To ameliorate soil erosion during works to install the abutment for the Bailey Bridge, geofabric must be progressively installed on a daily basis over exposed soil.
 - Siting of soil stockpiles at a distance of at least 20 m from water courses, open drainage channels, high tide, etc.
 - Care shall be taken during the transportation of gravel, sand and soil material to and from the site to avoid spillage, including not overfilling the tray, covering loads etc.
169. **Soil and erosion – work within the Pelin Kepin Awak Stream - installation and maintenance of coffer dams at the Awak Bridge / removal of excess ingress water during sheet piling / installation of upstream gabions.**
170. Construction activities will be undertaken within the stream including installation of gabions and coffer dams and the removal and treatment of excess ingress water from the cofferdam during bridge construction.
171. Working in and around the stream has the potential to disturb and increase discharge sediment into the stream, causing similar impacts as detailed in above.
172. The placement of gabions may disturb sediments, though it will be short term and localized. Any sediment plumes should quickly dissipate in the fast-flowing stream.
173. Specific mitigation measures are required to minimize sediment movement and maintain downstream water quality and ecological function. These include:

- Installation and maintenance of a coffer dam during bridge construction activities in the stream will be undertaken from the roadway, no heavy machinery will enter the water to carry out construction activities.
- Should machinery require access to the stream for excavations or sheet piling, it will be mounted safely on a barge.
- Excavated soil removed from creek during construction of the bridge will be stockpiled in a laydown and covered by a tarpaulin to prevent soil loss. If the soil is excess to requirements, it will be taken to the landfill for waste cover.
- Dewatering water from dry work areas of the cofferdams, must be treated prior to discharge to the marine environment, for example, by passing water through a lined sedimentation basin with a silt curtain to remove suspended material.
- Turbidity will be monitored upstream and downstream of active work sites through observations. The contractor will maintain and adapt treatment devices to maintain their efficacy.

174. Stream flow changes / vibration.

175. The Project works during bridge construction has the potential to disrupt aquatic ecological function. Underwater vibrations, caused by human activities in construction, can significantly affect aquatic animals by interfering with their ability to navigate, hunt, mate, and communicate. Effects range from behavioral changes and increased stress to hearing loss, physical injury, or death, particularly in fishes, crustaceans, and cephalopods. Flow changes or barriers can affect feeding, migration and other behavior. The impacts are short term. Specific mitigation measures will be required to minimize stream flow changes during bridge construction and maintain ecological function. These include:

- Stream flow and tidal flow will not be impeded at any time during construction. The placement of coffer dam during bridge works will divert stream flow around the work area, providing a safe and dry work environment whilst allowing for the stream flow to continue to discharge into the embayment. Migrating eels will have safe passage to the ocean at all times for spawning and elvers (young eels) will be able to return the stream. This access to the ocean will be available for other species that may migrate to the ocean during their breeding cycle.
- For stream fauna, limiting work to daylight hours (7 am to 5 pm) will provide some respite from vibration and noise. There are areas further upstream in Pelin Kepin Awak Stream that fish and eels may access to lessen impacts of vibration.

176. Spillage management of hazardous waste.

177. Petrochemicals and other hazardous substances will be used and transported during the project construction. These present a risk from spillages and other uncontrolled events, leading to potential pollution on land, air and receiving waters - Pelin Kepin Awak Stream. The contractor will be responsible for ensuring spillage is managed as per the Spill Management Plan.

178. The loss of hazardous wastes to during project works has the potential to disrupt aquatic ecological function in Pelin Kepin Awak Stream. These hazardous wastes may include wet alkaline cement, hydrocarbons and surfactants amongst others.

179. Specific mitigation measures to be undertaken to prevent spills of hazardous waste and cleanup of spills are included below: These include:

- Storage of all hazardous substances and chemicals (including fuel) and refuelling activities are to occur at least 160ft (50 m) away from watercourses

and coast.

- All hazardous substances and chemicals (including fuel) are to be appropriately contained (e.g. in bunded and roofed structures) to prevent contamination of surface water or groundwater.
- Contractors shall conduct daily inspections of machinery with particular attention to the repair of hydraulic and fuel systems to prevent leakage.
- The Contractor shall have fully stocked, relevant spill kits available and staff be trained in their use.
- For concrete works in the stream bed, the following environmental controls will be implemented:
 - **No Direct Discharge:** Concrete, slurry, or wash water is not to be washed into the receiving waters or drains.
 - All work will be carried out in **dry / dewatered** conditions.
 - **Bunded Washout Areas:** The contractor is to establish a designated, bunded washout area away from the receiving waters to contain and treat wash water.
 - Slurry containment with sandbags, booms, or vacuum trucks to capture all concrete slurry from cutting or pumping.
 - Letting waste concrete set and then remove and dispose as an inert solid.
 - Captured and remove contaminated wastewater and dispose of it at a facility approved by the Pohnpei EPA.
 - **Containment Equipment:** Use tarpaulin sheets under concrete pumps and delivery chutes to catch spills; and
 - Avoid large concrete pours when heavy rain is forecast to prevent runoff overflow.
 - **Equipment Cleaning:** Clean tools and chutes in designated areas.
- Collection and disposal of oil- stained wastes and used oil for disposal at the local landfill.
- Restoration of temporary work sites will include removal, treatment, and disposal of any oil-contaminated soils to the local landfill.
- In case of any fuel or chemical spill, Contractors shall immediately contain the spill and contact the PIU immediately to report the incident, and the incident should be reported to the EPA within 24 hours.

ii) Dekehn Awak (embayment)

180. The following aspects are considered to have potential impact on the ecology of Dekehn Awak (embayment) requiring mitigation.

181. **Soil and erosion – road and drainage works / embankment works for coastal protection.**

182. Sediment will come from open works areas, where base course and associated soil stockpiles will be exposed to rainfall. Sediment runoff from road, drainage and embankment works.
183. Together with naturally high sediment levels in the embayment, additional sediment loads during rainfall events, will result in cumulative impacts on the ecological functions of the embayment.
184. The very high rainfall frequency and intensity on Pohnpei exacerbates the risk of sediment-laden runoff. As there is no 'rainy season' this risk is present all year round.
185. Additional sediment loads in the embayment lead to an increase in turbidity, which reduces light penetration in the aquatic environment, inhibits the photosynthetic activity of seagrasses and corals, as well as smothering benthic flora and fauna (invertebrates and periphyton).
186. Any additional sediment assists in the formation of muddy sediment habitat, for mangrove establishment and growth within the embayment.
187. The contractor will implement the E&SCP. Measures to prevent sediments from moving offsite include:
 - A combination of either small interceptor dikes, pipe slope drains, silt fence, sediment traps, and temporary sediment basins or other controls will be used during road and drainage works and the embankment works;
 - Earthworks and areas to be exposed should be carefully planned, and disturbances to be minimized to the maximum possible extent;
 - Clean stormwater will be diverted away from disturbed areas;
 - All embankment work to be carried out from roadside;
 - Silt curtains will be required to prevent the spread of sediment into the bay during installation of sheet piles and sand bags for the embankment work;
 - All work to be carried out in dry conditions behind sheet piles or sand bags no work directly in the water for the embankment;
 - All cement works to be done in dry conditions for the embankment work;
 - Spill management for quick containment and clean-up of wet concrete for the embankment work ;
 - No discharges of stormwater or dewatering water from the embankment work area (all discharges will be treated for sediment removal prior to discharge to ocean side);
 - Soil / gravel stockpiles are to be located and contained (e.g. bunding, covered) to prevent any discharge of sediment;
 - Geofabric must be progressively installed on a daily basis over exposed soil to ameliorate soil erosion during the road and embankment works;
 - Siting of soil stockpiles at a distance of at least 20 m from water courses, open drainage channels, high tide, etc.; and
 - Care shall be taken during the transportation of gravel, sand and soil material to and from the site to avoid spillage, including not overfilling the tray, covering loads etc.
188. **Mangrove clearing / trimming / vibration:**
189. Impacts on the mangrove cultural site are outlined in Section 5 b.

190. Vibration will occur during sheet piling to provide a dry working area. See Section 5 c (i) for impacts on aquatic fauna. It is expected sheet piling will be short term at the embankment. Impact on embayment fauna e.g. crustaceans and fish may be limited as these fauna may be able access other similar habitat found in the embayment.
191. Trimming or removal of the mangroves growing in and at the foot of the embankment may be required. The length of the embankment works is 230 ft, the extent of cleaning on the embankment is ~ 3 ft across this distance is ~ 1000 sq ft of mangroves. According to DukeS, N.C. (1992)²², density of mature trees are between 0.1–1.0 trees/m² for *Rhizophora* fringe forests across the Indo-Pacific. On embankments, reclaimed land, or hydrologically altered areas realistic densities are usually ~ 10 - 40 trees/1000 sq.ft.
192. Removal or trimming of mangroves growing on the existing embankment (the area of mangroves that may be cleared is than < 2 % of the local mangrove habitat of ~ 60,000 sq ft within a 1000-foot (1/5 mile) radius of the road. The contractor will be required to follow good international industry practice for trimming of mangroves (e.g. a guideline provided from the Cayman Islands²³).
193. The mangroves have been trimmed in the past by the local residents. Impacts will be minor and short-term during construction and for up to one year following the end of the work. Mangroves will re-establish at the foot of the embankment. The trimming will be kept to a minimum, ensuring that the mangroves will regrow to their original shape and height once the embankment has been completed.
194. Mangroves are used as habitat for the endangered Pohnpei Flying Fox and foraging by the Pohnpei Kingfisher, so this habitat is classified as critical according to ESS6.
195. **Spillage and management of hazardous waste to the Dekehn Awak**
196. Relevant details of hazardous waste spillage risks and management are detailed in Section 5) c) i).

iii) Estuarine and Marine Aquatic Natural Habitat Conclusions

197. ESS6 requires that, if natural habitats are identified as part of the assessment, the Project “will seek to avoid adverse impacts on them in accordance with the mitigation hierarchy. Where natural habitats have the potential to be adversely affected by the project, the Borrower will not implement any project-related activities unless: (a) There are no technically and financially feasible alternatives; and (b) Appropriate mitigation measures are put in place, in accordance with the mitigation hierarchy, to achieve no net loss and, where feasible, preferably a net gain of biodiversity over the long term”. The impacts are moderate and with the appropriate mitigation they will be avoided or minimised to within background / baseline conditions. There will be no net loss of the baseline natural habitat values as a result of the project.

iv) Waste Management

198. The construction activities and procurement of materials and equipment will generate waste. The contractor will be responsible for ensuring waste is managed as per the Waste Minimization and Management Plan included in the CESMP. All waste that

²² *Mangrove floristics and biogeography*. In: Robertson & Alongi (eds.), Tropical Mangrove Ecosystems, American Geophysical Union

²³ <https://conservation.ky/wp-content/uploads/2021/01/Species-Conservation-Plan-for-Mangroves-FINAL.pdf>.

cannot be reused or recycled will be collected will be disposed of at the licensed Pohnpei EPA Landfill operated by a Department of Transportation and Infrastructure.

199. Waste management measures will include, but not be limited, to the following:

- Construction workers shall have access to sufficient general trash receptacles, with secure lids, to allow for the collection and storage of waste separated to hazardous waste.
- Waste shall be separated into green waste, general, recycling and hazardous waste and reused and recycled as a priority;
- Construction workers will have access to on-site toilet and hand washing facilities.
- Wastewater from toilet facilities shall be collected and disposed of at the licensed wastewater treatment plant at Pohnpei.
- Stockpiling, burying, burning or dumping of solid or liquid wastes is strictly prohibited.
- Separate solid waste into hazardous, non-hazardous, and reusable waste
- Cans, litter, sludge/sediment and other debris will be collected whilst cleaning out of the culverts during construction. This waste is to be collected and disposed of at the licensed land fill; and
- Road base material which has been during the road upgrade works will be kept separate from other waste reused or taken to the Pohnpei landfill where it may be used as cover material.

v) **Air quality**

200. The potential air impacts from road transport of materials, drainage works and embankment construction are dust from exposed soils and base course materials, and vehicle emissions, causing a nuisance to sensitive receptors e.g. local residents, the Awak Elementary School and St. Joseph Church. However, with the rainy environment in Pohnpei, the need for these measures will be sporadic. The contractor will be responsible for ensuring dust is managed as per the Dust and Noise Management Plan.

201. The following measures are to be undertaken by the contractor:

- During dry or drought conditions, spray roads, work areas and other construction-related facilities with water to minimize dust generation;
- provision of cover in storage area of construction materials, stockpiles, and spoils to prevent fine materials from being blown;
- the use of equipment and vehicles that emit dark sooty emissions will be prohibited;
- provision of tight tarpaulin cover on trucks silt, soil and gravels to avoid dust emissions; and
- prohibit the burning of all types of waste generated.

vi) **Concrete batching (Air Quality):**

202. Concrete batching plants generate air emissions, primarily in the form of fugitive dust (particulate matter which can cause respiratory issues, reduce air quality, and affect local amenities). Key emission sources include handling raw materials like sand and cement, storage silo loading, truck mixers, and unsealed road dust. The contractor must manage

emissions to avoid causing a nuisance beyond the boundary of the compound. The following mitigation measures may be undertaken by the contractor to achieve this:

- Cover or spray water or mist on stockpiles, material loading and screening operations, conveyer belts and rock crushers to suppress dust during windy and dry conditions.
- Install covers, fans, fabric filters, dry vacuums and bag houses to enclose and capture dust from dusty processes.
- Observe evidence of dust settlement at the boundary of the compound.

vii) Terrestrial flora and fauna

203. **Invasive weeds** are not present in large numbers along the road corridor. The minor vegetation clearances and the road raising and resealing will not change the presence or distribution of weed species because works are in a very small footprint in a highly modified environment.

204. Tree removal will be minimized and very localized. Compensation arrangements have been made with two landowners for the removal of ornamental trees (two frangipani, 4 noni trees and five croton bushes and 20 ft of croton hedge) and three coconut trees and a number of seedlings so that the temporary Bailey Bridge can be built. Compensation payments are based upon Government policy for individual species.

205. **Pohnpei Flying Fox and Pohnpei Kingfisher Habitat:** The three coconut trees and the 900 sq ft of mangroves that may be removed during the embankment works are favoured by the Pohnpei Flying Fox as a food source. The Pohnpei kingfisher also may roost and feed in the mangroves .

206. As described in Section 5) c) ii), the area of mangrove that might be cleared is than < 2 % of the local mangrove habitat of ~ 60,000 sq ft within a 1000-foot (1/5 mile) of the road.

207. Since only a small number of trees and a relatively minor and short-term area of mangroves will be removed; especially when compared to the extensive mangrove forests nearby and local agroforestry areas filled with fruit trees; removal of this vegetation is expected to have little effect on the behaviour or population of the Pohnpei Flying Fox and the Pohnpei kingfisher. In any case, mitigation is required.

208. As described in Section 5 (c), additional pre-construction and construction-phase surveys will strengthen the understanding of the Pohnpei Flying Fox's and Pohnpei Kingfisher 's population dynamics and behavioral patterns. The resulting data will inform adaptive management and guide future conservation actions to support positive biodiversity outcomes for these two species (Appendix C).

209. As a minimum, the Contractor will be required to avoid and mitigate impacts on mangrove habitat and Pohnpei Flying Fox and Pohnpei Kingfisher individuals as follows:

- Minimize mangrove trimming and tree removal i.e. follow good international industry practice for mangrove trimming, such as: <https://doe.ky/wp-content/uploads/2020/04/Mangrove-Trimming-Guidelines.pdf>
- The contractor will not be permitted to work at night and will not be permitted to leave lights left on at night on the active work sites.
- Workers site inductions will include information about the critical habitat of the Pohnpei Flying Fox and the Pohnpei Kingfisher and the need to protect habitat for the two species. The induction will also emphasize that no hunting or poaching of the flying fox is permitted under any circumstances.

- Community engagement will highlight the importance of the conservation of the Flying Fox and Pohnpei kingfisher and the mangrove habitat. This engagement will enhance the community's understanding of the need to conserve these species during and after the Project.
- Temporary activities such as laydown areas, borrow pits or quarries must be surveyed for the endangered Pohnpei Flying Fox and the vulnerable Pohnpei kingfisher, and their key habitat requirements and the site will not be permitted if the survey identifies potential impacts on flying fox or Pohnpei kingfisher behaviour or population.

210. Temporary noise, dust, and vibration from road works may also impact flying foxes and the Pohnpei kingfisher, potentially causing avoidance at dawn and dusk if their movement between roosts and feeding sites is disrupted. Since roosting areas are in tall forest trees away from the road, continuous daytime noise is less likely to affect their roosting behavior.

211. According to ESS6 the PRIME Project cannot implement any activities that have potential adverse impacts on critical habitat unless all the following conditions are met (Table 9 and Table 10).

Table 9: Condition and response to ESS6 for the Endangered Pohnpei Flying Fox

ESS6 Condition	Project Response
No other viable alternatives within the region exist for development of the project in habitats of lesser biodiversity value.	In this case, there are no other alternatives as the repair work must be completed on the existing embankments to protect the roadway from coastal erosion and the importance of keeping connectivity on the primary ring road on Pohnpei
All due process required under international obligations or national law that is a prerequisite to a country granting approval for project activities in or adjacent to a critical habitat has been complied with.	Approvals will be covered in the Pohnpei EPA Earthmoving permit and the conditions of this ESMP. Works will not commence until the permits are granted.
The potential adverse impacts, or likelihood of such, on the habitat will not lead to measurable net reduction or negative change in those biodiversity values for which the critical habitat was designated.	The biodiversity values for which the critical habitat was designated is the habitat requirements for the endangered Pohnpei Flying Fox. The bat occupies many different habitats for various needs – roosting, breeding, feeding etc. The Pohnpei Flying Fox may use the local mangroves in the embayment for feeding and the tall trees in the forest for roosting. The removal of small number of mangroves during embankment works and coconuts are unlikely to have a measurable effect on the feeding, breeding or roosting behaviour of the Flying Fox. Mitigation measures emphasise collecting more preconstruction data and avoiding and minimising impacts based on good international industry practice and the sensitivity of flying foxes to disruptions. The scale of impact is likely to be very low and the Project has taken a precautionary approach to mitigation.
The project is not anticipated to lead to a net reduction in the population of any Critically Endangered, Endangered, or restricted-range species, over a reasonable time period.	The project is not anticipated to lead to a net reduction in the population of the Pohnpei Flying Fox during this short-term and localized roadworks. As described above, some behaviour change may occur due to works but this

ESS6 Condition	Project Response
	is not anticipated to lead to any effects on breeding success. Baseline conditions will return within 12 months, so any disturbances are temporary. Additional pre-works surveys will determine the presence of the Pohnpei Flying Fox and any roosting colonies and whether there are any other potential risks to population numbers.
The project will not involve significant conversion or significant degradation of critical habitats.	These works may remove a small number of mangroves and coconuts which may be habitat for the flying fox. The project area is surrounded by a large number of mangroves. The works therefore not involve significant conversion or significant degradation of critical habitats that the Pohnpei Flying Fox relies upon.
The project's mitigation strategy will be designed to achieve net gains of those biodiversity values for which the critical habitat was designated.	The assessment concludes that minor avoidance behaviour may be a consequence of the project, but likely no change in the population of flying fox. This assessment will be updated with the additional scientific surveys and assessments prior to works starting. Scientific data will add valuable knowledge about the Pohnpei Flying Fox's population number, location and behaviour, in a country where conservation resources are very limited. The publication of data will inform future conservation efforts and is considered a "net gain" in biodiversity outcomes for this endangered species.
A robust and appropriately designed, long-term biodiversity monitoring and evaluation program aimed at assessing the status of the critical habitat is integrated into the Borrower's management program.	The scale of impact cannot be fully assessed because the original survey was a visual observation of individuals only. A targeted preconstruction study of the presence of the Pohnpei Flying Fox and location of roosting individuals / colonies within the project area of influence is therefore recommended prior to works being undertaken. If no flying foxes are identified, the risk to their potential habitat values is greatly reduced. However, should the Pohnpei Flying Fox be identified, monitoring of populations and their behavior during the construction phase will be required.

ESS6 Condition	Project Response
	These baseline studies will assist to confirm whether there are likely to be adverse impacts or confirm appropriate mitigation strategies to support positive biodiversity outcomes for this endangered species. The monitoring program is described in Appendix C.

Table 10: Condition and response to ESS6 for the Vulnerable Pohnpei Kingfisher

ESS6 Condition	Project Response
No other viable alternatives within the region exist for development of the project in habitats of lesser biodiversity value.	In this case, there are no other alternatives as the repair work must be completed on the existing embankments to protect the roadway from coastal erosion and the importance of keeping connectivity on the primary ring road on Pohnpei
All due process required under international obligations or national law that is a prerequisite to a country granting approval for project activities in or adjacent to a critical habitat has been complied with.	Approvals will be covered in the Pohnpei EPA Earthmoving permit and the conditions of this ESMP. Works will not commence until the permits are granted.
The potential adverse impacts, or likelihood of such, on the habitat will not lead to measurable net reduction or negative change in those biodiversity values for which the critical habitat was designated.	The biodiversity values for which the critical habitat was designated is the habitat requirements for the Pohnpei kingfisher. The kingfisher is found in a fairly wide variety of habitats throughout the island of Pohnpei, including the edges of mangroves, lowland forest and also marginal and modified habitats with plenty of timber. The Pohnpei Kingfisher may use the local mangroves in the embayment for feeding/roosting. The removal of small number of mangroves during embankment works and coconuts are unlikely to have a measurable effect on the feeding, breeding or roosting behaviour of the Kingfisher. Mitigation measures emphasise collecting more baseline data and avoiding and minimising impacts based on good international industry practice and the sensitivity of kingfishers to disruptions. The scale of impact is likely to be very low and the Project has taken a precautionary approach to mitigation.
The project is not anticipated to lead to a net reduction in the population of any Critically Endangered, Endangered, or restricted-range species, over a reasonable time period.	The project is not anticipated to lead to a net reduction in the population of the Pohnpei Kingfisher during this short-term and localized roadworks. As described above, some behaviour change may occur due to works but this is not anticipated to lead to any effects on breeding success. Baseline

ESS6 Condition	Project Response
	conditions will return within 12 months, so any disturbances are temporary. Additional pre-works surveys will determine the presence of the Pohnpei Kingfisher and any roosting colonies and whether there are any other potential risks to population numbers.
The project will not involve significant conversion or significant degradation of critical habitats.	These works may remove a small number of mangroves and coconuts which may be habitat for the kingfisher. The project area is surrounded by a large number of mangroves. The works therefore not involve significant conversion or significant degradation of critical habitats that the Pohnpei kingfisher relies upon.
The project's mitigation strategy will be designed to achieve net gains of those biodiversity values for which the critical habitat was designated.	The assessment concludes that minor avoidance behaviour may be a consequence of the project, but likely no change in the population of the kingfisher. This assessment will be updated with the additional scientific surveys and assessments prior to works starting. Scientific data will add valuable knowledge about the Pohnpei Kingfisher population number, location and behaviour, in a country where conservation resources are very limited. The publication of data will inform future conservation efforts and is considered a "net gain" in biodiversity outcomes for this endangered species.
A robust and appropriately designed, long-term biodiversity monitoring and evaluation program aimed at assessing the status of the critical habitat is integrated into the Borrower's management program.	The scale of impact cannot be fully assessed because the original survey was a visual observation of individuals only. A targeted baseline study of the presence of the Pohnpei Kingfisher and location of feeding/roosting individuals within the project area of influence is therefore recommended prior to works being undertaken. If no kingfishers are identified, the risk to their potential habitat values is greatly reduced. However, should the Pohnpei kingfisher be identified, monitoring of populations and their behaviour during the construction phase will be required. These baseline studies will assist to confirm whether there are likely to be

ESS6 Condition	Project Response
	adverse impacts or confirm appropriate mitigation strategies to support positive biodiversity outcomes for this endangered species. The monitoring program is described in Appendix C.

viii) Socio-economic - Impacts and Mitigation

212. **Impacts on the sensitive receptors churches, schools, etc.)** Road construction may adversely impact sensitive receptors (e.g., schools, churches, shops) through dust, noise, traffic disruptions, and general inconvenience. Given that these institutions experience high pedestrian and vehicular volumes during specific hours, contractors must proactively manage construction activities to minimize disruption. The following considerations are mandatory during the construction phase.

- Use of appropriate construction techniques which results in less disruption to public, especially the sensitive receptors.
- Specific consultation will be undertaken with these communities and stakeholders before and during construction activities to ensure that impacts are minimized, and community safety is ensured, especially when doing works during sensitive times, such as school and church hours.

213. **Complaints due to project-related impacts** relating to road and bridge construction may include a number of possible causes including dust, noise, traffic disruptions, cultural heritage, general inconvenience and number of other possibilities. To manage, record and address these community complaints.

The Contractor will:

- establish the approved project's GRM;
- publicize the existence of the project's GRM through campaigns, websites, billboards, etc.; and
- ensure that the contact details are placed on noticeboards and/or website

214. **Road safety, traffic management and vehicular access to private and public property:** Construction activities and associated temporary or partial road closures may cause traffic congestion and hinder public access associated with Awak Elementary School, St. Joseph Church and local residents. Traffic interactions with school bound pedestrians are most likely between the school hours of drop off in the morning between 7.00 and 8.00, lunchtime at 12.30 and in the afternoon pick up between 2.30 and 3.0 o'clock. Traffic interactions with St Joseph Church patrons will be greatest between Sunday 8am – 12pm, Sunday and Monday, Tuesday, Thursday, Friday 7-8 am and Wednesday 6-7pm. Residents commuting to work will leave home at between 7 and 8 am and return between 5 and 6 pm. The contractor will be responsible for ensuring traffic management and safety is managed as per the Traffic and Road Safety Management plan.

215. These actions detailed below apply to all construction zones, laydown areas, detours, haul routes, and temporary traffic management arrangements throughout the construction period

- .216. The contractor's Traffic Road Safety Management Plan (TRSMP) will maintain continuous, safe, and predictable access to St. Joseph's Church and Awak Elementary School and community facilities, ensure pedestrian safety, with particular attention to schoolchildren and church members, elderly residents, and visitors unfamiliar with the area, provide access through clear frontage protection and driveway continuity, provide timely, accessible, and transparent communication to all affected stakeholders and ensure emergency access is maintained at all times.
217. These measures include Advance Notice whereby the Contractor must provide 72-hour notice for any works affecting driveways for church and school access, 7-day notice for major staging changes or night works, Multilingual notices delivered via flyers, business visits, school/church liaison, and roadside signage. This ensures households, businesses, and institutions can plan around disruptions.
218. Driveway Continuity whereby the Contractor will provide temporary ramps, steel plates, or graded access across trenches, restoration of access before the end of each workday, no unapproved driveway closures and safe turning movements for church members and school drop offs
219. Safe Pedestrian Routing whereby the Contractor will provide continuous, protected pedestrian paths, barriers, cones, reflective tape, and lighting, accessible routes for elders and people with disabilities, traffic marshals at high-risk crossing points.
220. School-Hour Controls whereby the Contractor will not undertake high-risk works during 07:00–08:00 (school drop-off) and - 14:30–1500 (school pick-up) and will provide safe pedestrian corridors, coordination with school administrators and temporary supervised crossings if needed
221. Frontage Protection for St Joseph's Church and Awak Elementary School whereby the Contractor will provide access at all times, temporary signage where visibility is reduced, avoidance of school and church entrance during check-in/check-out
222. The Contractor will provide Church Access with no disruptive works during Sunday services and other times noted, safe pedestrian access and advance notice of any temporary parking or access changes.
223. The Contractor will action blocked access, unsafe pedestrian routes, and school hazards as Priority 1 (Urgent), response times - 30 minutes for Priority 1.
224. The Contractor will provide Monitoring and Compliance as daily checks of driveway access, pedestrian routes, and church and school frontage, weekly reporting to the PIU, and use of a Community Access Checklist by supervision teams
225. In addition, the Contractor will facilitate the safety of these pedestrians and associated traffic, by including :
 - There will be a number of safety measures including one way traffic directed by traffic management personnel or traffic lights in the absence of traffic management personnel.
 - Signage and fencing is to be used at all times to separate pedestrians from construction areas.
 - The local community is to be informed of the upcoming works (including maps, dates and times of operation) at community meetings, and the installation of signage, at least one month prior to commencement and key times through the 12 month construction period (as per SEP).

- Construction activities will be undertaken from 7 am to 5 pm on Monday through Saturday with no construction activities taking place at night. No activities on Sundays or public holidays without prior approval of State government agencies, traditional leaders, community and the Contractor.

226. **Emergency Access Protocol to the Kolonia Memorial Hospital**

227. The Kolonia Hospital is approximately 8 km from the road and bridge works and emergency access to the hospital for emergency ambulances and the public must be prioritized. An Emergency Access Protocol has been documented below and will be implemented by the Contractor after agreement with the PIU before construction can begin.

228. The key elements of the Emergency Access Protocol are:

- **No-Blockage Rule:** The Contractor shall maintain ****uninterrupted access**** for emergency vehicles at all times. No equipment, materials, spoil, or vehicles may obstruct the roadway in a manner that prevents ambulance passage. - Temporary lane closures must always allow an emergency vehicle to pass, including during trenching, concrete works, or bridge activities.
- **Traffic Marshal Responsibilities:** Traffic marshals must be trained and assigned to Immediately clear plant, workers, and traffic when an emergency vehicle is approaching. Maintain radio/phone communication with the site supervisor. Ensure safe pedestrian and vehicle movement during emergency passage. Keep diversion routes free of obstructions.
- **Emergency-Vehicle Priority Procedure:** The Contractor shall implement a formal priority procedure that includes immediate halt of construction activities when an ambulance is detected. Rapid removal of barriers, cones, or temporary obstructions. Direct escort of the emergency vehicle through the work zone by a traffic marshal. Documentation of each emergency-access event in the site log.
- **Pre-Notification to Hospital and Emergency Services:** Before construction begins, the Contractor must provide the hospital and emergency services with the construction schedule. Share contact details for the site supervisor and traffic control lead. Establish a direct communication line for emergency notifications. Notify emergency services of any major staging changes, diversions, or night works.
- The Contractor shall implement a formal priority procedure that includes immediate halt of construction activities when an ambulance is detected. Rapid removal of barriers, cones, or temporary obstructions. Direct escort of the emergency vehicle through the work zone by a traffic marshal. Documentation of each emergency-access event in the site log
- This protocol ensures compliance with ESS1 and ESS4 by protecting life-safety functions and maintaining uninterrupted emergency access throughout construction.

Noise. There are no noise standards in FSM so the World Bank Group EHS noise standards will apply. Clearing roads, bulldozing, jackhammers / demolition, compaction

equipment, excavation of existing pavement materials, and grading will generate noise with local residents and students and staff at the Awak elementary school most likely to be affected. Construction noise will attenuate with distance, and, depending on the type of operation, location, and function of equipment, is considered minimal and temporary. The contractor will be responsible for ensuring noise is managed as per the Dust and Noise Management Plan.

229. The Contractor will undertake the following steps during construction to mitigate noise:

- Ensure noise attenuation is in accordance with the WHO and WB EHS guidelines. Monitoring at sensitive receptors is required and management measures employed if noise attenuation does not meet guidelines.
- Consult and engage with the community to ensure people are fully informed and can make alternative arrangements for work or accommodation during works, in accordance with SEP.
- Strict adherence to work hours as described above.
- Regularly maintain machinery, equipment and vehicles to ensure noise reduction e.g. mufflers, use of air brakes, etc.
- Limit noisy construction activities to daytime or traffic off peak hours. As practicable, buffers will be established between work areas and nearby residences and business premises;
- The contractor will prepare a schedule of operations to be approved by the PIU (and police, if required). The schedule will establish days, including identifying days on which there should be no work, and hours of work for each construction activity and identify the types of equipment to be used;
- Monitor and investigate complaints through GRM,
- Identify any structures within zone of vibration impact and assess condition of structure.

230. **Community health and safety.** The community is at risk from exposure to bridge and road works hazards and worker and community interaction. Vulnerable people, including children and those with mobility issues, are at higher risk. The contractor will ensure people and vehicles are separated from work areas at all times.

231. The contractor will implement relevant elements of the TRSMP and GRM into CHSMP:

- All contracted workers required to sign a Code of Conduct (CoC) which outlines acceptable behavior for the workers and their role, including reference to Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), All new contracted workers engaged during the Construction Phase is required to sign a Code of Conduct which outlines acceptable behavior for the workers and their role, including reference to Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), alcohol restrictions, respect for local customs including respect for Pohnpei customs, land tenure, and community protocols and behavior around women, elders, and vulnerable persons, prohibition on entering private/customary land, and rules for behavior in community-facing areas and undergo training
- Adequate signage and security will be provided at work sites for prevention of unauthorized people (including children) accessing any work site(s) including advanced notice of commencement of works, installation of safety barriers and fences and signage or marking areas where works will be carried out;

- Provision of safe access across the works site(s) to people/institutions whose access is temporarily affected during road rehabilitation activities as part of the contractor implementing the TRSMP that will include traffic control and pedestrian safety measures;
 - Child and/or trafficked labor will be strictly prohibited for any activities associated with the subproject with children to be prohibited from entering the worker's accommodation, works area/construction zone and prohibited from playing on any equipment or machinery associated with the project; and
 - In consultation with PMU, the contractor will clearly fence off 'no go areas' within work site(s) and erect boundary fences to prevent the public from entering during the construction period (or specific construction activities).
 - Construction activities will be undertaken from 7 am to 5 pm on Monday through Saturday with no construction activities taking place on Sundays or public holidays without prior approval of State government agencies, traditional leaders, community and the Contractor.
 - Should a chemical spill occur in the vicinity of the businesses or hotels emergency procedures will be activated and the appropriate safety measures taken to protect community health.
 - Provide adequate safe passageways for the public crossing the construction sites; and advise local community of site health and safety site plans and seek feedback on appropriate mitigation measures via Community Advisory Committee meetings.
 - Any labour-related issues with the community to be addressed through the GRM.
232. **Worker health and safety.** Road works activities include various hazards and risks including working with heavy equipment and machinery, working on roads/in traffic, exposure to noise and exposure to dust/exhaust particulates and hazardous substances, working over water and heat stress. Risks would include accidental contact between workers and heavy equipment (reversing plant, excavator swinging booms, etc), trip hazards resulting in falls into deep excavations or onto steel reinforcing cages, immersion in water, etc and equipment or materials being accidentally dropped onto workers, such from broken crane slings or accidental material release from elevated hoppers.
233. The contractor will be required to comply with the LMP Appendix B- Project OH&S Management and implement relevant measures through the CESMP. The information found in Appendix B contains worker health and safety information relevant to the Project.
234. The contractor will implement relevant elements of the TRSMP and GRM into a CHSMP:
- The Contractor will employ an EHS manager on site for the duration of the works.
 - OHS training shall be provided on an ongoing basis throughout the construction phase, task by task, and records kept of competencies and training.
 - Hazard registers will be kept updated.
 - Workers will be allocated tasks based on their skills and experience.

- All drivers and equipment operators will have the appropriate licenses or ‘tickets’ or evidence of training.
 - Daily tool box meetings will include a run through of ESH hazards and controls.
 - All workers will be given their own PPE that fits and is appropriate for the hazards they are exposed to and will be trained in how to wear / use it. All workers will be required to always wear / use it while working on site. No PPE, no work.
 - The Contractor shall provide potable water supplies, first aid facilities, toilets for all genders and hand-washing facilities at worksites.
 - The Contractor’s OHS procedures shall include the requirement to raise awareness and educate all site staff on the prevention and treatment of communicable diseases including filariasis, dengue, zika, hepatitis, COVID-19 and HIV/AIDS.
 - All new contracted workers engaged during the Construction Phase is required to sign a Code of Conduct to ensure that workers’ actions at the work site are appropriate and meet community standards including acceptable behaviour for the reference to Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), alcohol restrictions, respect for Pohnpeiian customs, land tenure, and community protocols and behavior around women, elders, and vulnerable persons, prohibition on entering private/customary land, and rules for behavior in community-facing areas and undergo training in these areas.
235. Where off-island workers are housed in rented accommodation, the Contractor shall:
- Ensure compliance with IFC/World Bank Worker Accommodation Guidelines.
 - Provide adequate sanitation, privacy, lighting, ventilation, and waste management.
 - Maintain a register of all residents.
 - Conduct monthly inspections using a standard checklist.
 - Document corrective actions within 7 days.
 - Ensure accommodation hosts understand the CoC and reporting channels.
 - Any imported labor related issues to be addressed through the GRM and complaints register
236. The contractor will ensure that there is prohibition on unauthorized entry to private or customary land by the work team. Workers are strictly prohibited from:
- Entering private land, gardens, or shoreline areas without permission
 - Taking photos or videos of private property or individuals
 - Collecting plants, shells, or materials from customary land
 - Violations result in disciplinary action and possible removal from site.

237. The Contractor shall appoint a Worker Welfare Supervisor responsible for daily oversight, conduct weekly checks on worker behaviour, accommodation, and CoC compliance, maintain a log of corrective actions and remove workers from site for serious violations (SEA/SH, violence, theft, trespass).
238. The Contractor shall integrate worker behavior oversight into the project GRM by:
- Providing a confidential reporting channel for community members
 - Investigating allegations within 48 hours
 - Reporting outcomes to the PIU
 - Maintaining an anonymized misconduct register
 - SEA/SH allegations must follow survivor-centred protocols.
239. The TRSMP will ensure that workers are kept safe while working in and near traffic.
240. A Works Method Statement will be required for all works with cement and all works in waterways prior to these works being undertaken.
241. **Land access arrangements:** The contractor is required to compensate for any damage caused by the works and proof that no involuntary effects remain. This will be confirmed by before and after photos of any disturbed areas on the affected landholders' properties. The Supervising Engineer (ICT) and the PIU will ensure these arrangements are undertaken and monitored between the landowners and the Contractor.
242. The contractor is required to compensate for any damages caused by the works, including the five coconut trees and two frangipani trees at replacement cost currently estimated at \$700. The PIU will be responsible for obtaining replacement cost valuations from the Department of Resources and Development or other relevant agency.
243. The PIU and contractor will need to work with the local community leaders to demarcate the site of cultural significance that is adjacent to the works and make arrangements for protection of the site and for the protection measures to be monitored by the local community.

e) Operational Impacts and Mitigation

244. **Operational impacts** will be minimized, where ongoing road maintenance is implemented consistently. The potential environmental and social impacts of the proposed project have been assessed in line with WB's ESS Environmental and Social Standards, including assessment of the possible benefits and impacts with regard to (i) sustainable natural resource management; (ii) pollution prevention and abatement; (iii) health and safety; and (iv) climate change.
- i) Impacts on Physical Environment.
245. **Climate adaptation and flooding.** Hydraulic modelling has ensured flows thoroughly the slightly wider bridge meet climate predictions to reduce flood

- probability. These changes may have beneficial outcomes of the ecology of freshwater fauna. Impacts on coastal processes including mangroves establishment and growth is expected to be minimal as flows remain close to baseline. The installation of upstream gabions after hydraulic analysis should reduce the probability of flooding on adjacent properties with some minor changes to flows downstream.
- 246. The new bridge design will meet future climate scenario is also a benefit to the local community and the broader Pohnpei community by reducing the possibilities of road closures or unsafe road conditions due to flooding.
 - ii) Socio-economic Environment Impacts and Mitigation
- 247. **Road Maintenance:** To maintain the road, Inspect and ensure roadway and drainage system continues to be clear of debris. This will ensure the bridge will continue to operate for the community and business across the island.
- 248. Therefore, the socio-economic benefit of the project is that this potential failure future scenario is now highly unlikely at this location.

5) STAKEHOLDER ENGAGEMENT

a) Stakeholder Engagement Activities and Feedback

249. Following general good practice and the requirements of the PRIME SEP and ESS10, key informant interviews, a perception survey and focus group discussions were undertaken in November 2024 specifically for the development of the design and ESMP, to determine community perception towards the project, elicit information relevant to establishing baseline conditions and to understand potential environmental and social effects.

250. Consultations with stakeholders, government agencies, civil society, and communities, including women's groups, were conducted in Pohnpei. The purpose of consultations at this stage were to:

- Foster partnerships with beneficiary and stakeholder communities;
- Share information on the Awak Bridge Project;
- Communicate with stakeholders that their cooperation (and possible participation) in project activities, including surveys, site investigations, planning, feasibility and potentially future design, construction, monitoring, and maintenance is key to achieving a high-quality strategy that most benefits their concerns; and
- Develop and inform the site options analysis, to help develop the recommendation of an overall Project scope.

251. A Perception Assessment Survey was completed in Pohnpei during November and a Community Meeting held at the Awak Community Centre, U, Pohnpei, on November 14th, 2024. A record of consultations is attached as Appendix A. The outcomes of the Methodology of Perception Assessment in Appendix B.

252. There were 18 attendees, 2 females and 16 males at the community meeting. During discussions with residents, the following aspects were raised:

- Provision of gabion basket river training solution to stabilize the banks approaching Awak Bridge as part of the compensation package with the landholders.
- An explanation of the use of Bailey bridge to allow for temporary bypass while the bridge is being constructed.
- Vice Speaker Obispo highlighted a cultural and ecological concern at the mangroves.
- Time for St. Joseph Church services should be considered 'non-working times' in the contract: Sunday 8am – 12pm, Sunday and Monday, Tuesday, Thursday, Friday 7-8am and Wednesday 6-7pm.

253. Participation was limited due to a major funeral in the family of the King of U (Nanmwarki) but the King, along with the consent of the Mayor of U, had sent a designated community representative, as well as an adjacent landowner representative to attend the meeting. Consequently, there was no opportunity to have a forum with the women.

254. The Vice Speaker for the U Municipal Council assured the consultants that all of the 11 Villages of U were aware of and informed of this engagement and would be monitoring the outcomes through the community emissaries sent, primarily represented by Vice Speaker Obispo and Adjacent Land Owner (ALO) Ramirez. Mr. Obispo closed his introduction by stating that the community of Awak has been aware of this project for the past 4-5 years and looked forward to its implementation.

255. Stakeholders have expressed support for the project as they clearly see the benefit to the country and their community with improved roads.

b) Pre-Construction and Construction Phase Consultation and Grievance Redress

256. Additional consultations will be held with the project stakeholders to inform them of project implementation timing and to help to resolve any complaints and grievances. Information regarding the approved projects and the proposed environmental management measures will be posted at suitable locations within the project site. The consultation approach and stakeholders are detailed Table 11.

257. The contractor will include relevant elements of the PRIME GRM in the CSEMP so that any concerns raised during project implementation can be addressed in a fair and timely manner.

258. A summary of the project documents including the preparation and dissemination of a brochure in English and the local language, explaining the project, works required and anticipated timing of the works, will be prepared and disseminated to stakeholders.

c) Information Disclosure

259. All safeguard documents are subject to public disclosure and therefore will be made available to the public. Following clearance of the ESMP by WB, the document will be posted on government and WB websites as per the Access to Information Policy, SEP and ESS 10.

Table 11: Project Stakeholder Engagement and Communication Plan During Construction

Component Activities	Stakeholder Type	Stakeholders	Stakeholder Engagement Topic/ Scope	Stakeholder Engagement Objectives	Milestones	Engagement Type	Responsibility
Works Construction	Community	Owners of land and / or assets that are temporary acquired/used during construction.	• Specific one-on-one meetings with key relevant community groups, e.g. community leaders and land owners/ occupiers, asset owners • Consult with the local community leaders to demarcate the site of. cultural significance that is adjacent to the works and make arrangements for protection of the site	• Assessment of land and/or asset prior to disturbance (i.e. benchmark). • Acceptance of condition of reinstatement land/or asset after completion of works • Management of nuisances such as noise and dust. • Arrangements for protection of the cultural heritage site	• Prior to preparatory construction activities. • After completion of construction/reinstatement of land/asset disturbed, or temporarily acquired / used	In-person meeting/s	PIU, CIU Environmental and Social Team; Contractor
	Public Utilities	FSMTC,	• Specific one-on-one meetings with	Assessment of utility infrastructure	• • Prior to preparatory construction activities.	Phone;	PIU, CIU

		FSMTCC, State PUC.	key relevant public utility providers with assets impacted by the works	prior to disturbance (i.e. benchmark). • Acceptance of condition of reinstatement utility infrastructure after • completion of works.	• • After completion of construction/reinstatement of land/asset disturbed, or temporarily acquired / used	Email; In person meeting/s	Environmental and Social Team; Contractor
	All	All	• Public notification of works to be advertised via radio and newspaper (if appropriate), and notice board/signage in the vicinity of the Project works.	• Outline scope and design of road works. • Project status and schedule. Outlining grievance mechanism and providing contact details.	• Prior to preparatory construction activities. • Regular updates throughout construction.	newspaper; Radio; notice board/sign. letter. drop/door knocking	PIU, CIU Environmental and Social Team; Contractor
	All	All	• Specific one-on-one meetings with aggrieved parties on the submission of a	• Reach agreement on corrective action	Various (as required).	Phone; Email; Meeting	PIU, CIU Environmental and Social Team;

			complaint/grievance				Contractor
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6) GRIEVANCE REDRESS MECHANISM

260. The process for the grievance mechanism is as follows:

261. The grievance mechanism is a process for managing feedback, complaints and grievances. Any person can get in touch with project personnel through the grievance mechanism to ask questions or provide comments. If any person is not satisfied with, or has a complaint about, an aspect of the Project they have the right to lodge a grievance. The PRIME Project has a grievance mechanism that is detailed in the ESMF and RF.

262. In addition, because two key receptors i.e. the St. Joseph 's Church and Awak Elementary School are likely to be affected by road construction works a site specific GRM has been prepared to assist any complaints resolution with contractor during the construction activities.

263. The list below of the GRM requirements to assist in Resolution of Any Access Disputes during the Construction Phase meets the Contractor's CESMP obligations, aligns with World Bank ESF expectations and complements the boarder actions in the GRM detailed in Table 12.

264. The grievance mechanism process for this project including SEA/SH grievances is part of the PRIME grievance mechanism. The process is set out in Table 12.

265. GRM Requirements for Construction Phase to assist in Resolution of Any Access Disputes

266. **Signage at All Work Fronts:**

267. Contractor shall install and maintain clear, visible, and weather-resistant signage at every active work front.

268. Signage must include:

- Description of the works and expected duration
- Safe pedestrian and vehicle detour routes
- 24/7 GRM contact number and PIU focal point
- Contractor site supervisor name and phone number
- Signs must be in English and the local language, placed before works commence, and updated whenever staging changes.

269. **Contractor Complaint Register:**

270. Contractor shall maintain a site-level Complaint and Incident Register that records all grievances received directly by workers, supervisors, or community members.

- Minimum fields:
- Date/time received
- Complainant details (if provided)
- Nature of complaint
- Immediate action taken
- Follow-up actions and responsible person
- Date of resolution and confirmation with complainant
- Register must be available for PIU inspection at any time and submitted weekly.

271. Urgent Response Time for Blocked Access or Unsafe Diversions

- Complaints related to blocked access, unsafe pedestrian diversions, or access restrictions are classified as Urgent.

272. Contractor must:

- Respond within 30 minutes of notification
- Rectify or make safe within 2 hours
- Notify the PIU once resolved
- If access cannot be restored within 2 hours, temporary safe access must be provided immediately.

273. School/Church Related Complaints

274. Complaints from School/Church regarding loss of access, reduced visibility, unsafe frontage, or construction-related disruption

275. Contractor must:

- Conduct a site visit within 24 hours
- Agree on temporary mitigation
- Document actions
- Persistent issues must be escalated to the PIU Social Specialist.

276. Documentation of Resolution and Restoration

277. For every complaint, the contractor must document:

- Actions taken
- Closure date/time
- Photographic evidence
- Confirmation from the complainant where possible
- All documentation must be included in the monthly GRM summary report to the PIU.

Table 12: Project Grievance Mechanism Process

Step	Feedback, Queries or Grievance Process	Duration
1	Any person can submit a query, feedback, complaint or grievance to any of the following: the PIU State Focal Point, PIU Director, national DTC&I office, Contractor, or Compliant Portal: www.rebrand.ly/FSM-GRS, feedbackWB@gov.fm, complaintsWB@gov.fm. DTC&I: PIU Ph: 3202080 Email: tcj@tcj.gov.fm For SEAH: Pohnpei: Family Health Clinic :320-5777; Bersyns Community Health Centre 691 320-6115 and Pohnpei Women Council	Any time within 1 day of submission.
2a	Every submission received by the Contractor will be screened for relevance to their role and responsibility. Those submissions not directly related to their role and responsibility will be passed on to the PIU State Focal Point for further screening and record keeping. Submissions directly related to their role and responsibility will be actioned as per the process below. The responsible actor (Contractor (2a) or State GRM Focal Point (2b)) will endeavour to resolve the complaint/issue immediately.	Within 1 day of submission
2b	Upon receipt of each submission, the State GRM Focal Point is to screen to assess whether it is related to i) the PRIME Project generally or this sub-project specifically and ii) environmental and social issues. Non-eligible grievances (i.e. those not Project related) are then to be referred to the relevant agency to follow up, if appropriate. Any submissions that are managed directly by the Contractor is retained in the records with no further action.	Within 3 days of submission.
3	The responsible actor (Contractor (2a) or State GRM Focal Point (2b)) will endeavor to resolve the complaint/issue immediately. If satisfactorily resolved, the submission and resultant resolution/corrective action will be logged and reported to the PIU Project Manager and copied to the	Within 2 weeks of grievance lodged

	Centralized Implementation Unit (CIU) (Program Manager and Environmental and Social Team).	
4	Where a complaint or grievance has not been resolved, the PRIME/SCORE Project Manager will refer the grievance to the DTC&I PMU Manager for his/her action/resolution. The PRIME/SCORE Project Manager will log the details of issue and resultant resolution status (copy CIU Program Manager and Environmental and Social Team).	Within 2 weeks of grievance lodged
5	If the matter remains unresolved, or the submitter is not satisfied with the outcome, the DoTC&I PMU Manager refers the matter to the Project Steering Committee (PSC) for a resolution, copying the PIU Project Manager. The PIU Project Manager will log details of issue and resultant resolution status (copy CIU Program Manager and Environmental and Social Team).	Within 1 month of grievance lodged
6	Once the agreed corrective actions are implemented, and the PIU Project Manager notifies the claimant of the result in writing.	Within 1 week of resolution
7	If it remains unresolved or the complainant is dissatisfied with the outcome proposed by the PSC, the affected party may refer the matter to the appropriate legal or judicial authority. A decision of the Court will be final.	Within 3 months of grievance lodged (where possible) or otherwise as agreed between parties during the process.

278. Steps 1 to 5 should be undertaken immediately (i.e., as soon as possible). Where the matter is referred to the PRIME/SCORE Project Manager, a resolution should be sought within two weeks. If unsuccessful and the matter is referred to the Project Steering Committee (PSC), this should occur within a month. The PRIME/SCORE Project Manager shall report back the outcome of the resolution to the affected party within one week total of the corrective action occurring.
279. The State GRM Focal Point will be the grievance focal point and receive, record and report on Project related concerns. If the complaint/grievance relates to a Contractor activity, the Project will ensure the Contractor remedies any damage, pays compensation for damage or loss, etc. Use of community leaders and customary methods of conflict resolution is encouraged and utilized if and when appropriate – on a case-by-case basis.
280. A complaints register will be maintained by both the contractor and the State GRM focal point and will show the details and nature of the complaint, the

- complainant's name, the date and actions taken as a result of the investigation (outlined further below).
281. Each record is to be allocated a unique number, reflecting year and sequence of received complaint (for example 2021-01, 2021-02 etc.). Complaint records (letter, email, record of conversation) should be stored together, electronically or in hard copy. Contractors will report their register details in the monthly report to the PIU.
 282. While every effort should be made to resolve conflicts by mutual agreement of the parties involved, in some cases, arbitration and adjudication on disagreements and conflicts by an external mediator will be required.
 283. Any grievance related to corruption or another criminal offence, with the exception of complaints relating to GBV/SEA/SH (which should follow the GBV/SEA/SH specific GRM outlined below), needs to be managed confidentially through the detailed process in the PRIME/SCORE SEP, summarised as follows.
 284. The aggrieved party/ies take their grievance to the relevant State and/or National Police and notify the PRIME/SCORE Project Manager.
 285. The PRIME/SCORE Project Manager notifies the DTC&I PMU, the Secretary of DTC&I and CIU (Program Officer and Safeguard Team).
 286. If the grievance includes an alleged crime, with exception of GBV/SEA/SH, the PRIME/SCORE Project Manager will notify the state and national legal offices (e.g., police or Department of Justice) and report the incident.
 287. Resolution of these grievances will be the responsibility of the legal systems within each state and/or national agencies as dictated by state and national law. In these cases, the projects grievance mechanism will ensure the above due diligence is enacted and due process is documented with the grievance given a complaint number and recorded. Confidentiality associated with all criminal cases must be compliant and follow State and National laws.

7) ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

a) Introduction

289. The environmental and social management and monitoring plan (ESMMP) contains the components crucial to effective environmental and social risk management of the Project
290. The ESMP includes the following information:
- Implementation arrangements, including institutional roles and responsibilities for the ESMP implementation throughout all phases of the project.
 - Environmental and social risk management matrices include:
 - Potential environmental and social impacts at each stage of the project;
 - Proposed mitigation measures to address each potential impact;
 - Costs associated with implementation of the mitigation measure;
 - The institutional responsibility for implementing proposed mitigation measures
291. The MP was developed to achieve the following objectives:
- To reflect the environmental and social issues and impacts identified during the design phase.
 - To implement and monitor mitigation measures within the construction areas and in the operational phase; and
 - To comply with the laws and regulations of the state and FSM and with World Bank ESS, PRIME instruments, international standards and best practice guidelines.

b) Implementation Arrangement and Responsibilities

- The following section summarizes the organizational responsibilities for the Awak Bridge replacement project.
- Implementation of environmental and social risk management is a joint responsibility between the PIU on behalf of DTC&I, the Works Supervision Consultant (ICT), and the contractor. Table 13 summarizes the organizational responsibilities for the projects.

Table 13: Organizational Environmental and Social Responsibilities

Project implementation organization	Environmental and Social Risk Management Roles and Responsibilities
Department of Transportation, Communication and Infrastructure (DTC&I)	• Responsible for overall project implementation and monitoring at the implementing agency level including inter-ministry coordination. • Responsible for the project's delivery and day-to-day project management activities, through the PIU. • Ensure that the PIU is provided with the necessary resources to effectively carry out its duties and responsibilities • Responsible for ensuring that the contractors do not commence construction activities until requisite approvals have been received from Pohnpei EPA. • After the completion of the projects, Pohnpei State Government will be responsible for operation and ongoing maintenance of all assets.
Project Implementation Unit (PIU) on behalf of DTC&I	• Responsible for overall project management, implementation and monitoring. • Update the ESMP as required to meet the requirements of the Pohnpei EPA or to address new/novel risks throughout the Project • Prepare the applications for necessary permits from Pohnpei EPA. • Ensure the ESMP and any conditions of the necessary permits are integrated into the project's bid and contract documents. • Ensure environmental and social concerns are incorporated into any changes to engineering design. • Participate in and facilitate consultations to advise affected communities of the scope and scheduling of the work. • Review and clear the CESMP of contractors once cleared by World Bank. • Review contractors' monthly reports to ensure compliance with the CESMP and ESMP. • Ensure the contractor observes the GRM requirements. • Implement the GRM and maintain records of complaints/ grievances. • Ensure contractor compliance with required resources for mitigation measures as reflected in the CESMP. • Undertake regular site visits to independently inspect and audit the contractor's compliance with the approved CESMP and ICT monitoring. • Undertake the additional pre-construction consultations, cultural heritage assessment and baseline studies of Pohnpei Flying Fox.

Works Supervision Consultant (ICT)	• Consulting firm to support PIU in overseeing project implementation, including Environmental and Social Specialist to support PIU with reviewing and clearing the CESMP, providing regular on-site supervision during the construction period. • Review monthly environmental monitoring reports for consolidation to the semi-annual monitoring reports for DTC&I/and WB. • Ensure required government permits and clearances are acquired by DTC&I prior to actual construction activities. • Establish a system for monitoring environmental and social risk management of the Project as described in the ESMP. • Review, monitor, and evaluate the effectiveness of implemented mitigation measures and recommend corrective actions whenever necessary. • Ensure grievance redress mechanism is activated prior to the start of construction. • During construction, conduct site visits and coordinate with the project engineers to ensure that required Environmental and Social mitigation measures are implemented at the construction sites, and • Coordinate with the contractors' Environmental and Social and safety officers to ensure that environmental and social risk management awareness trainings for workers are done.
CIU Environmental and Social Specialists	• Provide technical support to the ICT or PIU as and when required, including document review, incident management, compliance management and grievance responses. • Review Contractor's reports and ICT reports to ensure compliance with ESMP and CESMP. • Conduct audits as required by PIU or DOFA.
Contractor	• Prior to construction, prepares and submits the CESMP for review by ICT for approval by DTC&I. • Understand the ESMP requirements and allocate necessary resources for implementation of the CESMP. • Employ an Environmental Health and Safety Officer (EHSO) and OSH Manager to ensure that the contractor complies with requirements concerning environmental, social, health and safety, and labor and working conditions during construction. • Provide PPE for all workers. • Provide training for all workers in accordance with the ESMP and CESMP. • Implement construction activities with the required mitigation measures. • Conduct compliance monitoring as required by CESMP.

	• Act promptly on complaints and grievances concerning the construction activities in accordance with the project's GRM. • Submit monthly progress reports on CESMP implementation to PIU. • Manage incidents as per the ESMP and CESMP, including the reporting requirements. • Respond promptly to all instructions from ICT and / or PIU regarding non-conformances, non-compliances etc. and resolve them within the agreed timeframes.
Pohnpei EPA	• Responsible for issuing necessary permits for construction • Monitors construction progress for compliance with the terms of the issued permits • Monitors implementation of the mitigation measures and the CESMP in general
World Bank	• Review and clear CESMP for compliance against the ESMP and World Bank ESF. • Conducts project review missions to assess project implementation progress of all outputs and compliance with the ESCP, ESMP and CESMP and other PRIME E&S instruments. This may include site visits. • Review monitoring reports from the PIU and CIU.

i) Impact Mitigation, Management, Monitoring and Reporting

293. The Monitoring Plan includes the description of the potential environmental and social impact of project activities during the pre-construction, construction, and operation phases, with mitigation measures and responsibility for implementing the measures. The contractor will respond to the MP and provide detailed and site-specific methodology and risk assessment in their CESMP.
294. Environmental and social monitoring is an integral component of an ESMP to i) prevent uncertainties pertaining to unanticipated impacts; ii) ensure mitigation measures are working; and iii) reassure the public on the progress of the development. Progressive monitoring must accompany various stages of the project activities.
295. The environmental and social monitoring plan is based on the potential impacts, significance of the impacts and mitigation approaches identified during the environmental and social assessment (Table 14). The plan comprises parameters to be monitored, frequency of monitoring, responsible authorities, and cost estimates. The contractor will be required to prepare a detailed environmental and social monitoring plan in the CESMP based on the MP and as set out in the contract documents.
296. Progress reports will be issued by the PIU and ICT consultants to DoFA, DTC&I and WB. These will report on all aspects of the project, including those documented in the contractor's reports and environmental and social monitoring reports prepared by ICT and contractor.
297. The monitoring and reporting required under the project includes:

298. Review of the contractor's monitoring plan as part of their CESMP, based on contract documents and grant approval when requirements are met;
299. Contractor's reports including status of implementation of the approved CESMP (completed checklists) and corrective action requests.
300. PIU and ICT inspection and audit reports reflecting on compliance of the contractor with the approved CESMP;
301. Preparation of quarterly progress reports for submission to DoFA and DTC&I; a
302. Reporting requirements are outlined in Table 15.

ii) Incident Reporting

303. Should an environmental incident, such as a spill of hazardous substances, or a social incident such as serious injury or death occur during the course of site works, the Contractor Site Manager is to immediately notify the PIU State Focal Point, who is then to forward the incident to the PIU Project Manager, CIU and EPA. The Site Manager is to take prompt and immediate action to minimize any impact and where necessary, liaise with all relevant authorities.
304. The Site Manager is to, in liaison with the PIU and CIU, direct an appropriate course of action and shall record the date, time and nature of the incident, full details of the causes and effects, further investigations to be undertaken, person responsible for such investigations, outcomes of the investigation, actions and resolution of the incident (including preventative measures implemented to prevent recurrence). Preventative measures are to be subject to monitoring and review. Incidents will be included in any audit reports during site work. The WB must be informed within 24 hours of a severe injury or a significant environmental incident.
305. Reporting requirements are outlined in Table 15.

48. **Sub Plans for the CESMP:** The list of subplans as required from the PRIME Environmental and Social Commitment Plan required for this ESMP are listed below:

- Erosion and Sediment Control Plan (ESCP)
- Surface Water and Management Plan (SWMP)
- Waste Minimization and Management plan (WMMP)
- Spill Management Plan (SMP)
- Traffic and Road Safety Management Plan (TRSMP)
- Pollution Prevention and Control Plan (PPCP)
- Community Health and Safety Management Plan (CHSMP)
- Chance Find Procedure (CFP)
- Occupational Health and Safety Management Plan (OHSMP)

Justification for the following subplans listed in the PRIME ESCP NOT to be included in CESMP:

- Social Interaction Plan - impacts are not unique or significant and general mitigation measures in the ESMP are sufficient to manage under the CESMP without a specific subplan.
- An Emergency Management and Response Plan is already included in this ESMP
- Subcontractor Management Plan - scale of project is small and the sub-contractors (if any) will all follow the main contractor's CESMP as a condition of their contract.

- Chance of UXO or contamination is low and a CFP and emergency procedures are considered sufficient to manage under the CESMP without the need for a specific subplan.
- No cultural heritage sites or items have been identified in the ESMP.

Table 14: Environmental and Social Management and Monitoring Plans

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
PRE-CONSTRUCTION							
Approval of CESMP	Tender documents and construction contract will require the following: • issuance of this ESMP to bidders; • preparation of detailed Construction Environmental and Social Management Plan (CESMP) prior to construction activities; and • review and clearance of CESMP by the PIU and World Bank prior to site mobilization.	Part of ICT's contract Part of contractors' bid cost	ICT Contractor	DTC&I PIU ICT	CESMP	CESMP submission and clearance prior to commencement of site works.	Minimal cost (part of DTC&I PIU and ICT task)
Aggregate and Asphalt Suppliers & other construction materials Sourcing	• Only material from licensed local, inter-State or international land-based sources of sand, soil, gravel and rock (i.e., quarries) to be used (i.e. no coastal – lagoon sand and coral reef / rock to be used). Should materials be sourced from the existing commercial supplier, the PIU and Contractor will screen the source of materials from the vendor and the contractor must perform due diligence to ensure the vendor's quarry is registered and operates legally. • If aggregate material is imported, then State regulations will also need to be met. Invasive Pest Species: Implementation of GIIP mitigation measures (vehicle washing, sourcing weed free aggregates, fumigating aggregates etc) will ensure all GoFSM biosecurity measures are implemented minimizing the risk of invasive pest introductions. In addition, the aggregate material imported from offshore will need to meet any State and ESS requirements, which includes impacts managed through the implementation of Codes of Practice (CoP) for quarry and dredging operations and ensuring materials such as aggregate and equipment meet strict biosecurity precautions and clearance for imported materials, as well as adherence to the World Bank Group EHS Guidelines for construction material extraction²⁴. • In case of quarry material, the FSM States have existing quarry sites, which have been previously used for road maintenance and construction activities. These sites) will require further investigation to determine whether they can supply suitable material (both quality and quantity) to meet the needs of both Projects works. The investigation of the quarry sites will be completed before commencement of the construction works.	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	Government permits	EPA/KIRMA & other FSM departments issued Permits, licenses, certificates, due diligence reports & if required site specific ESMP.	Aggregate and Asphalt Suppliers
Land Access Arrangements	• The contractor is required to compensate for any damages caused by the works and proof that no involuntary effects remain. This will be confirmed by before and after photos of any disturbed areas on the affected landholders' properties. The Supervising Engineer (ICT) and the PIU will ensure these arrangements are undertaken and monitored between the landowners and the Contractor. • Compensation for the five coconut trees and two frangipani trees at replacement cost currently estimated at \$700. The PIU will be responsible for obtaining replacement cost valuations from the	Temporary land access and compensation to be part of Contractor's budget.	Contractor	DTC&I PIU ICT	• Land Access Agreements • Photos of any disturbed before and after works are undertaken.	• Documentation review and validation with landowners. • Consult with the local community leaders to demarcate the site of cultural significance that is adjacent to the works and make	Minimal cost (part of DTC&I PIU and ICT task)

²⁴ Source: Section 5.5.1.9 of the ESMF PRIME & SCORE.

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
	Department of Resources and Development or other relevant agency. The PIU and contractor will consult with the local community leaders to demarcate the site of cultural significance that is adjacent to the works and make arrangements for protection of the site and for the protection measures to be monitored by the local community.					arrangements for protection of the site	
Pohnpei Flying fox and Pohnpei Kingfisher Preconstruction Surveys	- Pre-construction surveys for the location and population of individuals in the project area. - Temporary activity locations such as laydown areas, borrow pits or quarries are to be surveyed for the endangered Pohnpei flying fox and vulnerable Pohnpei Kingfisher. - The survey results will identify if the desired locations chosen are likely to cause impacts on Flying fox and Pohnpei Kingfisher behaviour or population and deemed not suitable or suitable for works. The Surveys are to be completed by local NGO or university or EPA staff.	\$10,000	DTC&I PIU	PIU Environmental and Social Team	- TOR - Draft deliverables	- Review of draft TOR - Review of Draft deliverables	\$10,000 PIU Environmental and Social Team
Introduction of Alien Species	Construction equipment where possible to be sourced locally. In case that there are equipment and materials to be imported, these including the vessels that import them will be subjected to clearance procedures under the Bio-Security Act and Regulations and may require issuance of phytosanitary certificates from Biosecurity FSM.	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	Phytosanitary certificates from Biosecurity FSM	Verification of certificates	Minimal cost (part of DTC&I PIU and ICT task)
Disruption of utilities and services	The contractor will: - Coordinate with the other utility companies regarding the potential disruptions; - Make provisions to preserve the operation of current facilities; and provide prior notification to affected households and establishments.	Part of contractors' bid cost	DTC&I PIU ICT and Contractor	DTC&I PIU ICT	- Coordination with the other utility companies - Notification of affected households and establishments	- Verification of coordination meetings and notifications - inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	Minimal cost (part of DTC&I PIU and ICT task)
Mobilization of workers and laydown areas	- Prior to contractor mobilization to the site, the PIU and contractor will establish a communications protocol for the project with relevant elements of the GRM to be reflected in the contractor's CESMP. Measures to minimize disturbance by construction workers and presence of the works site/area include: - A Code of Conduct is to be signed by all employees to ensure that workers' actions at the work site are appropriate and meet community standards including acceptable behaviour for the reference to Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), alcohol restrictions, respect for Pohnpei customs, land tenure, and community protocols and behavior around women, elders, and vulnerable persons, prohibition on entering private/customary land, and rules for behavior in community-facing areas and undergo training in these areas. The contractor will identify a member of their staff to act as liaison officer between the communities and contractor and manage the GRM;	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	- Establishment of a Code of Conduct - Communications protocol completed - Assign liaison officer - Induction and training records. - Site inspection.	- Verification of COC - Liaison officer selected - Training Records - Inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP. Monitoring indicators for Temporary Land Access and Restoration Protocol - Due-diligence file approved before occupation - Boundary compliance (weekly supervision checks)	Minimal cost (part of DTC&I PIU and ICT task)

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
	A small number of construction sites and storage/laydown areas will be required by the contractor during construction. Where these temporary facilities will be used, the following activities will be followed: - The Contractor will be responsible for identifying suitable laydown areas, including locations for concrete batching or bitumen plants. The location of the concrete batching plant location will be determined by the contractor in consultation with the PIU, the ICT and the Pohnpei EPA. The contractor will obtain landowner approval in accordance with the RF and be approved by the PIU and prior to mobilization. - Suitably remote from sensitive receptors (noise and dust) and access to a suitable road network for hauling material in and product out. Water and power connectivity are required and sufficient area for agitator truck wash down bays to facilitate washing water recycling. Wash water will be captured, treated, and recycled for the next batch or for cleaning purposes including dust suppression, preventing uncontrolled release of alkaline wastewater to the environment. Storage of hazardous materials is also required. The concrete batching plant must be the location for truck washout, and truck washout area must be a constructed and defined area with strict controls. - Equipment cleaning (all sites) – should only occur in the laydown area, in a location where there is ground protection and wash/wastewater collection. A detailed Protocol for management of temporary Land Access and Restoration for the Contractor to follow is shown below. Temporary Land Access and Restoration Protocol - Applicable to Contractor Laydown Areas, Storage Yards, Worker Facilities, and all Temporary Use Sites Purpose and Scope This protocol governs the identification, approval, use, and restoration of all temporary land access areas required for construction. All such areas are treated as potential ESS5 land access until due diligence confirms land status, access terms, user rights, compensation/rental arrangements, and restoration obligations. The protocol applies to all land outside the Road ROW that the Contractor intends to occupy temporarily. Pre-Use Requirements (Due Diligence File) Before any occupation, the Contractor shall prepare a Temporary Land Access Due Diligence File containing: - Land status confirmation (public, private, customary, mixed). - Identification of landowners, customary right-holders, and current users. - Consultation records with all relevant parties.					- Number and resolution of GRM cases related to temporary use areas - Restoration completed and signed off within agreed timeframe - No outstanding land access disputes at project close	

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
	• Documented access terms, including: • Duration and boundaries of the area • Permitted activities and hours of operation • Access arrangements for landowners/customary users • Compensation or rental basis, if applicable. • Restoration obligations, including reinstatement standards and waste removal. • Sign-off requirements (landowner/user + PIU/Supervision Consultant). No mobilization or occupation may occur until the PIU approves the due-diligence file. Management During Use The Contractor shall: • Occupy only the approved boundaries. • Maintain cleanliness, security, and safe access for landowners/customary users. • Prevent nuisance impacts (noise, dust, runoff, traffic). • Manage stockpiles, fuel, chemicals, and waste in accordance with the CESMP. • Record and respond to any complaints through the GRM, with immediate notification to the PIU. • Maintain a site logbook documenting inspections, incidents, and GRM cases. Restoration and Demobilization At the end of the temporary use period, the Contractor shall: • Remove all temporary structures, stockpiles, waste, and contaminated materials. • Regrade, stabilise, and reinstate surfaces as per the agreed restoration plan. • Restore drainage, access paths, and vegetation where required. • Conduct a joint inspection with landowners/users and the PIU. • Obtain written completion sign-off from landowners/users and the PIU. • Close out any related GRM cases. No demobilization payment or final certificate shall be issued until restoration and sign-off are complete.						

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
Workplace hazards and traffic management	The contractor will ensure: - Adequate signage and security provided at the work sites and prevention of unauthorized people (including children) entering the work sites. - Provision of adequate protection to the public close to the work site, including notice of commencement of works, installation of safety barriers where required and signage or marking of the work areas; - The contractor will need to undertake a survey to understand peak times and flows and reflect the findings in the TRSMP as part of the CESMP. - Provision of safe access across the works site to people and businesses whose access is temporarily affected during road rehabilitation activities.	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	Safety equipment and systems in place. Traffic survey completed.	- Visual inspection of permits - inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	Minimal cost to DTC&I PIU
Gabion design	Hydrological modelling and analysis to design and locate bank protection works in a manner that will not cause erosion or sedimentation impacts downstream.	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	Gabion design and hydrological modelling outputs.	Prior to approving the works.	Minimal cost (part of DTC&I PIU and ICT task)
CONSTRUCTION							
Protecting the Pohnpei Flying Fox and Pohnpei Kingfisher	- Ongoing Pohnpei Flying Fox and Pohnpei Kingfisher populations and behaviour studies during the construction phase to inform mitigation measure by local NGO or university or EPA staff. The contractor will: - Minimize mangrove trimming and tree removal i.e. follow good international industry practice for mangrove trimming, such as: https://doe.ky/wp-content/uploads/2020/04/Mangrove-Trimming-Guidelines.pdf - No work at night and no lights left on at night on the active work sites. - No hunting or poaching of wildlife. Workers site inductions will include information about the critical habitat of the Pohnpei Flying Fox and Pohnpei Kingfisher and the need to protect habitat for the flying fox and the bird. The induction will emphasize no hunting or poaching of the flying fox is to occur. - Community engagement will highlight the importance of the conservation of the flying fox and the Pohnpei kingfisher and the mangrove habitat. This engagement will enhance the community's understanding of the need to conserve these species during and after the Project. - Temporary activities such as laydown areas, borrow pits or quarries must be surveyed for the endangered Pohnpei Flying Fox and Pohnpei Kingfisher and their key habitat requirements and the site will not be permitted if the survey identifies potential impacts on flying fox or kingfisher behaviour or population.	PIU	POIU	DTC&I PIU ICT	- Flying fox populations and behaviour studies including feeding and roosting if required as a result of outputs from the pre-construction study. - Scale of mangrove trimming. - Working hours. - Training content. - Consultation content.	- Population and behaviour studies of the Pohnpei Flying fox and Pohnpei Kingfisher - Daily / weekly site inspections. - Review of records in contractors' monthly reports. - inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	\$30,000 Survey cost during construction funded by PIU

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
	Undertake any additional mitigation actions as a result of the preconstruction survey.						
Impacts on sensitive receptors (churches, schools, etc.)	- Use of appropriate construction techniques which results in less disruption to public, especially the sensitive receptors. - Specific consultation will be undertaken with these communities and stakeholders before and during construction activities to ensure that impacts are minimized, and community safety is ensured, especially when doing works during sensitive times, such as school and church hours.	Part of contractors' bid cost	Contractor	DTC&I PIU ICT		- Verification of coordination meetings and notifications - Verification of GRM records monthly	Minimal cost to DTC&I
Complaints due to project-related impacts	The PIU and the Contractors will: - establish the approved project's GRM; - publicize the existence of the project's GRM through campaigns, websites, billboards, etc.; and - ensure that the contact details are placed on noticeboards and/or website.	Part of contractors' bid cost	DTC&I PIU Contractors	DTC&I PIU ICT	- Consultation meetings - Tender documents GRM activated with responsible focal identified	- Verification of meeting documents, tender documents - After completion of meetings - Once after preparation of tender documents prepared	Minimal cost (part of contractor's task)
Soil erosion and sedimentation control	- The contractor will implement the Sediment and Erosion Control Plan (ESCP) and the Surface Water Management Plan (SWMP) - Installation of small interceptor dikes, pipe slope drains, grass bale barriers, silt fence, sediment traps, and temporary sediment basins - Soil / gravel stockpiles are to be located and contained (e.g. bunding, covered) to prevent any discharge of sediment. - Siting of soil stockpiles at a distance of at least 20 m from water courses, open drainage channels etc. - Care shall be taken during the transportation of material to and from the site to avoid spillage including not over filling the tray, covering loads etc. - Earthworks and areas to be exposed should be carefully planned and disturbances to be minimized to the maximum possible extent. Clean stormwater should be diverted away from disturbed areas. - Clean stormwater should be diverted away from disturbed areas. - Geofabric to be used daily as a cover material while working on repairs to the coastal embankments. - Monitor turbidity or water clarity upstream and downstream of active work sites. - Observe sedimentation downstream of work sites. - All other activities as per Section 5d.- Construction Impacts and Mitigation	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	Disturbed sites Use of appropriate sediment controls Monitoring is appropriate.	- Visual inspection of sites - Proportionate to the risks, the contractor will be required to undertake visual observations and turbidity measurements before, during and after the embankment repair activities. The PIU will also conduct visual observations and turbidity measurements as part of their supervision to corroborate the contractor's data. Any observed or measured changes in the nearshore environment (sediment plumes, sedimentation etc.) should be acted upon - Record baseline turbidity and sample daily if discharging to receiving waters (turbidity tube) https://www.teaching.com.au/product/turbidity-tube-8211-60-5cm?srlid=AfmBOoqKsQI56ok3eAFoEyG6M1nAtAjRhuVw2q_wqQhRys905kyKUR5z - Verification of plans daily during rainy periods	Minimal cost (part of DTC&I PIU and ICT task)

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
						Review of monitoring records at least monthly in the Contractor's report.	
Working in Waterways and Coastal Areas	The contractor will - Consult the Surface Water Management Plan (SWMP) - All work to be carried out in dry conditions behind sheet piles or sandbags. - No work directly in the water. • Stream flow and tidal flow will not be impeded at any time during construction. - Dewatering of work areas (such as coffer dams) to be used during bridge construction for excavations and pouring of concrete slabs, embankment works to minimize ingress water. Egress water to be treated if turbid i.e. above baseline concentrations prior to discharge. - Barges to be considered if access is required whilst working in waterway. - Limiting work to daylight hours (7 am to 5 pm) - Water quality monitoring as noted. - Regular sedimentation observations as noted. - All other activities as per Section 5d.- Construction Impacts and Mitigation	Part of contractor bid cost	Contractor	DTC&I PIU ICT	- Observation of mitigation methods - Observation of turbidity near / downstream of works - Contractors CESMP (ESC&P)	- Visual inspection of sites - Proportionate to the risks, the contractor will be required to undertake visual observations and turbidity measurements before, during and after the embankment repair activities. The PIU will also conduct visual observations and turbidity measurements as part of their supervision to corroborate the contractor's data. Any observed or measured changes in the nearshore environment (sediment plumes, sedimentation etc.) should be acted upon - Record baseline turbidity and sample daily if discharging to receiving waters (turbidity tube/ turbidity meter) https://www.teaching.com.au/product/turbidity-tube-8211-60-5cm?srlid=AfmBOoqKsQI56ok3eAFoEyG6M1nAtAjRhuVw2q_wqQhRys905kyKUR5z - Verification of plans daily during rainy periods - Review of monitoring records at least monthly in the Contractor's report.	Part of Contractor's task. Minimal cost (part of DTC&I PIU and ICT task)
Disposal of excavation spoils and other solid wastes	The Contractor shall implement the WMMP, which covers all aspects of waste generation, storage and disposal. - Construction workers shall have access to sufficient general trash receptacles, with secure lids, to allow for the collection and storage of wastes separate to hazardous waste. - Sort and recycle PET, aluminium and glass containers, and green waste and take to Pohnpei facilities for recycling. - Residual solid wastes shall be collected and disposed of at the Pohnpei EPA-licensed disposal facility and / or recycling facilities. - Construction workers shall have access to on- site toilet and hand washing facilities.	Part of contractor bid cost	Contractor	DTC&I PIU ICT	Contractor's disposal plan	Inspection of disposal site	Minimal cost (part of DTC&I PIU and ICT task)

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
	- Wastewater from toilet facilities shall be collected and disposed of at the licensed wastewater treatment plant at Weno. - Stockpiling, burying, burning or dumping of solid or liquid wastes shall be strictly prohibited. - Separate solid waste into hazardous, non-hazardous, and reusable waste						
Oil and hazardous materials management	- The Contractor implements SMP, WMMP as part of the CESMP, which will include measures for clean-up and handling of hazardous and contaminated materials: - Storage of all hazardous substances and chemicals (including fuel) and refuelling is to occur at least 50 m away from watercourses and be appropriately contained (e.g. in bunded and roofed structures) to prevent contamination of surface water or groundwater. - Contractors shall conduct daily inspections of machinery with particular attention to repair of hydraulic and fuel systems to prevent leakage. - The Contractor shall have fully stocked, relevant spill kits available and staff be trained in their use. - In case of any fuel or chemical spill, Contractors shall immediately contain the spill and contact the PIU immediately to report the incident and should be reported to the EPA within 24 hours - Provision of trainings on proper handling of fuels/hazardous substances, and containing and disposal of spills; - Collection and disposal of oil- stained wastes and used oil through authorized waste handlers and waste facilities; and - Restoration of temporary work sites will include removal, treatment, and proper disposal of oil contaminated soils. - Concrete works in stream bed mitigation measures as per Section 5d. - Construction Impacts and Mitigation	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	Measures required to prevent accidental releases Records of accidental releases Measures for clean-up and handling of contaminated materials Training records of personnel for hazardous materials;	- Visual inspection of sites daily during active work activities - Verification of records - Inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	Minimal cost (part of DTC&I PIU and ICT task)
Air quality due to construction activities	The Contractor shall implement the PPCP as part of the CESMP, along with: - Regular water spraying of roads, work areas and other construction-related facilities to minimize dust generation; ` - Provision of cover in storage area of construction materials, stockpiles, and spoils to prevent fine materials from being blown; - Provision of tight tarpaulin cover on delivery trucks to avoid spills and dust emission; and - Prohibit burning of all types of wastes generated - of all types of wastes generated - Dust monitoring at sensitive receptor during nearby work fronts	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	- Dust generation - Smoke emitting equipment, - Open burning of materials - Contractors CSMP (PPCP)	- Visual inspection of sites daily during work activities. - Dust monitoring at sensitive receptor during nearby work fronts - inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP. - Monitoring to occur in accordance with <i>Section Environmental, Health, and Safety (EHS) Guidelines: General EHS Guidelines:</i>	Minimal cost (part of DTC&I PIU and ICT task)

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
						<i>Construction and Decommissioning.</i> The IFC General EHS Guidelines require projects to follow national legislated standards or, in their absence, the World Health Organization (WHO) Air Quality Guidelines • WHO Global Air Quality Guidelines of 24 hr PM 10 of 45 ug/m³. - Note: The 24-hour mean guideline is defined as the 99th percentile, meaning only 3–4 exceedance days are permitted per year.	
Concrete Batching Plant (Air Quality)	The Contractor shall implement the PPCP as part of the CESMP, along with: • Cover or spray water or mist on stockpiles, material loading and screening operations, conveyer belts and rock crushers to suppress dust during windy and dry conditions. • Install covers, fans, fabric filters, dry vacuums and bag houses to enclose and capture dust from dusty processes. • Observe evidence of dust settlement at the boundary of the compound	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	• Contractors CESMP (PPCP)	• Visual inspection of permits • inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	Minimal cost to DTC&I
Tree removal	• Compensation paid as per government policy for individual species with landowners	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	Compensation records	Prior to tree removal.	Minimal cost (part of DTC&I PIU and ICT task)
Construction noise and vibration	• Measures for management of construction noise and vibration: • Construction vehicles and equipment will be maintained in good working order and regular equipment maintenance will be undertaken; • Construction vehicles and machinery will be fitted with mufflers and other noise abatement equipment as necessary; • Limit noisy construction activities to daytime or traffic off peak hours. As practicable, buffers will be established between work areas and nearby residences and business premises; • The contractor will prepare a schedule of operations to be approved by the PIU (and police, if required). The schedule will establish	Part of contractors' bid cost	Contractor	Contractor DTC&I PIU ICT	• Contractors CESMP (PPCP) • GRM Complaints	• Monitoring to occur in accordance with Section Environmental, Health, and Safety (EHS) Guidelines: General EHS Guidelines: Construction and Decommissioning²⁵: • inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	\$2,500 for equipment Minimal cost (part of DTC&I PIU and ICT task)

²⁵ World Bank Group. (2007). *Environmental, Health, and Safety (EHS) Guidelines: General EHS Guidelines: Construction and Decommissioning*. Washington, D.C.: World Bank Group.

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
	days, including identifying days on days on which there should be no work, and hours of work for each construction activity and identify the types of equipment to be used; - Any complaints regarding noise will be dealt with by the contractor in the first instance through the GRM. - Adapt practices where monitoring identifies breaches to noise limits to ensure the WBG EHS/WHO Guidelines are met.					The World Health Organization focuses on long-term average exposure (L den - day-evening-night) for different sources: Road Traffic Noise: < 53 dB L den (day evening night) and < 45 dB L night.	
Road safety, traffic management and vehicular access to private and public property	- The contractor will be responsible for ensuring traffic management and safety is managed as per the Traffic and Road Safety Management plan. - These actions detailed below apply to all construction zones, laydown areas, detours, haul routes, and temporary traffic management arrangements throughout the construction period - The contractor's Traffic Road Safety Management Plan (TRSMP) will maintain continuous, safe, and predictable access to St. Joseph's Church and Awak Elementary School and community facilities, ensure pedestrian safety, with particular attention to schoolchildren and church members, elderly residents, and visitors unfamiliar with the area, provide access through clear frontage protection and driveway continuity, provide timely, accessible, and transparent communication to all affected stakeholders and ensure emergency access is maintained at all times. - These measures include Advance Notice whereby the Contractor must provide 72-hour notice for any works affecting driveways for church and school access, 7-day notice for major staging changes or night works, Multilingual notices delivered via flyers, business visits, school/church liaison, and roadside signage. This ensures households, businesses, and institutions can plan around disruptions. - Driveway Continuity whereby the Contractor will provide temporary ramps, steel plates, or graded access across trenches, restoration of access before the end of each workday, no unapproved driveway closures and safe turning movements for church members and school drop offs - Safe Pedestrian Routing whereby the Contractor will provide continuous, protected pedestrian paths, barriers, cones, reflective tape, and lighting, accessible routes for elders and people with disabilities, traffic marshals at high-risk crossing points. - School-Hour Controls whereby the Contractor will not undertake high-risk works during 07:00–08:00 (school drop-off) and - 14:30–1500 (school pick-up) and will provide safe pedestrian corridors, coordination with school administrators and temporary supervised crossings if needed - Frontage Protection for St Joseph's Church and Awak Elementary School whereby the Contractor will provide access at all times,	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	- Traffic signs in vicinity of construction sites - Schedule of festivities, processions, parades, etc. - Contractors CHSMP (TRSMP, GRM):	- Verification of Traffic and Road Safety Management Plan - Visual inspection of sites daily	

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
	temporary signage where visibility is reduced, avoidance of school and church entrance during check-in/check-out - The Contractor will provide Church Access with no disruptive works during Sunday services and other times noted, safe pedestrian access and advance notice of any temporary parking or access changes. - The Contractor will action blocked access, unsafe pedestrian routes, and school hazards as Priority 1 (Urgent), response times - 30 minutes for Priority 1. - The Contractor will provide Monitoring and Compliance as daily checks of driveway access, pedestrian routes, and church and school frontage, weekly reporting to the PIU, and use of a Community Access Checklist by supervision teams - In addition the Contractor will facilitate the safety of these pedestrians and associated traffic, by including : - There will be a number of safety measures including one way traffic directed by traffic management personnel or traffic lights in the absence of traffic management personnel. - Signage and fencing is to be used at all times to separate pedestrians from construction areas. - The local community is to be informed of the upcoming works (including maps, dates and times of operation) at community meetings, and the installation of signage, at least one month prior to commencement and key times through the 12-month construction period (as per SEP). - Construction activities will be undertaken from 7 am to 5 pm on Monday through Saturday with no construction activities taking place at night. No activities on Sundays or public holidays without prior approval of State government agencies, traditional leaders, community and the Contractor.						
Community health and safety	- The contractor will implement relevant elements of the TRSMP and GRM into a CHSMP: - A Code of Conduct is to be signed by all employees to ensure that workers' actions at the work site are appropriate and meet community standards including acceptable behaviour for the reference to Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), alcohol restrictions, respect for Pohnpeian customs, land tenure, and community protocols and behaviour around women, elders, and vulnerable persons, prohibition on entering private/customary land, and rules for behaviour in community-facing areas and undergo training in these areas. - Adequate signage and security will be provided at work sites for prevention of unauthorized people (including children) accessing	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	- Construction safety policy - Hazards in the area - Safety control such as signages, lightings, and barriers - Health and safety records (near miss, first aide, lost time accident) - COC sign up	- Verification of construction safety policy and health and safety record - Verification of health and safety record - Visual inspection of sites daily during work activities. - inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	Minimal cost (part of DTC&I PIU and ICT task)

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
	any work site(s) including advanced notice of commencement of works, installation of safety barriers and fences and signage or marking areas where works will be carried out; • Provision of safe access across the works site(s) to people/institutions whose access is temporarily affected during road rehabilitation activities as part of the contractor implementing the TRSMP that will include traffic control and pedestrian safety measures; • Child and/or trafficked labour will be strictly prohibited for any activities associated with the subproject with children to be prohibited from entering the worker's accommodation, works area/construction zone and prohibited from playing on any equipment or machinery associated with the project; and • In consultation with PMU, the contractor will clearly fence off 'no go areas' within work site(s) and erect boundary fences to prevent the public from entering during the construction period (or specific construction activities). • Construction activities will be undertaken from 7 am to 5 pm on Monday through Saturday with no construction activities taking place on Sundays or public holidays without prior approval of State government agencies, traditional leaders, community and the Contractor. • Any imported labour related issues to be addressed through the GRM and complaints register • Should a chemical spill occur in the vicinity of the businesses or hotels emergency procedures will be activated and the appropriate safety measures taken to protect community health. • Provide adequate safe passageways for the public crossing the construction sites; and advise local community of site health and safety site plans and seek feedback on appropriate mitigation measures via Community Advisory Committee meetings.				• Contractors CHSMP (TRSMP, GRM):		
Worker health and safety	The contractor will implement relevant elements of the OHSMP The Contractor will employ an EHS manager on site for the duration of the works. • OHS training shall be provided on an ongoing basis throughout the construction phase, task by task, and records kept of competencies and training. • Hazard registers will be kept updated. • Workers will be allocated tasks based on their skills and experience. • All drivers and equipment operators will have the appropriate licenses or 'tickets' or evidence of training. • Daily tool box meetings will include a run through of ESH hazards and controls.	Part of contractors' cost	Contractor	DTC&I PIU ICT	• HSMP implementation. • First aid station, PPE, emergency response equipment and sanitation facilities • Health and safety records (near miss, first aide, lost time accident). • PPE is worn / used correctly. • Work method statements.	• Verification of health and safety plan • Verification of health and safety record • Visual inspection of sites daily during work activities. • inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	Minimal cost (part of DTC&I PIU and ICT task)

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	• All workers will be given their own PPE that fits and is appropriate for the hazards they are exposed to and will be trained in how to wear / use it. All workers will be required to always wear / use it while working on site. No PPE, no work. • The Contractor shall provide potable water supplies, first aid facilities, toilets for all genders and hand-washing facilities at worksites. • The Contractor's OHS procedures shall include the requirement to raise awareness and educate all site staff on the prevention and treatment of communicable diseases including filariasis, dengue, zika, hepatitis, COVID-19 and HIV/AIDS. • All new contracted workers engaged during the Construction Phase is required to sign a Code of Conduct to ensure that workers' actions at the work site are appropriate and meet community standards including acceptable behaviour for the reference to Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), alcohol restrictions, respect for Pohnpeian customs, land tenure, and community protocols and behaviour around women, elders, and vulnerable persons, prohibition on entering private/customary land, and rules for behaviour in community-facing areas and undergo training in these areas. Where off-island workers are housed in rented accommodation, the Contractor shall: • Ensure compliance with IFC/World Bank Worker Accommodation Guidelines. • Provide adequate sanitation, privacy, lighting, ventilation, and waste management. • Maintain a register of all residents. • Conduct monthly inspections using a standard checklist. • Document corrective actions within 7 days. • Ensure accommodation hosts understand the CoC and reporting channels. • Any imported labor related issues to be addressed through the GRM and complaints register The contractor will ensure that there is prohibition on unauthorized entry to private or customary land by the work team. Workers are strictly prohibited from: • Entering private land, gardens, or shoreline areas without permission • Taking photos or videos of private property or individuals • Collecting plants, shells, or materials from customary land • Violations result in disciplinary action and possible removal from site. The Contractor shall appoint a Worker Welfare Supervisor responsible for daily oversight, conduct weekly checks on worker behaviour,						

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
	accommodation, and CoC compliance, maintain a log of corrective actions and remove workers from site for serious violations (SEA/SH, violence, theft, trespass). The Contractor shall integrate worker behaviour oversight into the project GRM by: • Providing a confidential reporting channel for community members • Investigating allegations within 48 hours • Reporting outcomes to the PIU • Maintaining an anonymized misconduct register • SEA/SH allegations must follow survivor-centred protocols. The TRSMP will ensure that workers are kept safe while working in and near traffic. A Works Method Statement will be required for all works with cement and all works in waterways prior to these works being undertaken.						
Potential damage to cultural heritage	Mitigation measures include: • Review CFP • Implement any mitigation measures identified from pre-construction consultation • Immediate stoppage upon discovery of archaeological and cultural assets. • Inform the local authorities and the FSM National Museum about the presence. • Work not to resume until given approval by the authority.	Part of Contractor's cost	Contractor	DTC&I PIU ICT	▪ Protection and mitigation actions (if any required) ▪ Action and documentation following an event	▪ During regular site visits • After notice of an event. • inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	Minimal cost (part of DTC&I PIU and ICT task)
Improper closure of construction sites after project completion.	• Site restoration and removal of all temporary facilities, excess materials, equipment, plant, and excavated materials on site. • All waste removal shall be to approved locations.	Part of contractors' bid cost	Contractor	DTC&I PIU ICT	Disturbed sites, staging areas, and workers camps.	• Visual inspection of sites • Review and "clear" site remediation through issue of certificate Once when all site work is complete • inspections and audits of the effectiveness of the contractor's implementation of the approved CESMP.	Minimal cost (part of DTC&I PIU and ICT task)
OPERATIONS							
Routine and ongoing maintenance	• Inspect and ensure roadway and drainage system is clear of any debris. • Coordinate with stakeholders on all maintenance work	Part of DTC&I's operational cost	Maintenance contract or Department of Public Works/DTC&I budget	Department of Public Works routine maintenance contractor	• Condition of the roadway, drains, bridge, gabions and embankment	• Routine maintenance records. • Annual inspections or as required by the DTC&I.	Minimal cost to DTC&I
Climate adaptation and flooding	• Routine maintenance works carried out	Part of DTC&I's operational cost	Maintenance contract or Department of Public	Department of Public Works routine	• Condition of the roadway, drains, bridge, gabions and embankment	• Routine maintenance records. • Visual inspections.	Minimal cost to DTC&I

Activity/ Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Mitigation Cost	Implementation	Supervision/ Monitoring	Aspects/ Parameters to be monitored	Means of Monitoring/ Frequency	Monitoring Cost
			Works/DTC &I budget	maintenanc e contractor			

Table 15: Schedule of reporting

Report Type	Frequency of Submission	Responsibility	Submit to:
CESMP	Prior to commencement of works	Contractor	ICT, PIU and CIU, then World Bank
CESMP updates	As required	Contractor	ICT, PIU and CIU, then World Bank
Incident Reporting	As below in Section 10	Contractor (Site Manager)	ICT, PIU, CIU, then to EPA (for environmental incidents) and World Bank. OHS in the FSM is regulated by the Occupational Safety and Health Act 2022.
Complaints and Grievances Reporting	Within 24 hrs of grievance	Contractor (Site Manager).	ICT, PIU and CIU
Audit reports by PIU	Quarterly or as undertaken	PIU Lead	CIU
Complaints and Grievances Reporting	Within 24 hrs of significant or serious grievance	PIU and CIU	World Bank
Weekly Construction Reports	Mondays (for week prior)	Contractor (Site Manager)	ICT

Monthly ESHS report within the Construction Report	First week of month (for month prior)	Contractor	ICT
Monthly Construction Report	Second week of month (for month prior)	Engineer	PIU and CIU, then World Bank
Works Completion Report	After completion of works and reinstatement of site	Contractor	ICT
Works Completion Report	After completion of works and reinstatement of site	Engineer	PIU and CIU, then World Bank
Prepare and submit to the Association regular monitoring reports on the environmental, social, health and safety (ESHS) performance of the Project, including but not limited to: i. The implementation of the ESCP; ii. Status of preparation and implementation of E&S documents identified and required under the ESCP; iii. Stakeholder engagement activities; iv. Contractors ESHS implementation, ESHS incidents; and	Six monthly throughout Project implementation.	PIU Project Manager and CIU Environmental and Social Team.	World Bank

v. Functioning of the grievance mechanisms.			
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iii) Non-Compliance Management

306. Monitoring will identify non-compliance with CESMP and Contract clauses, the ESMP and the earthmoving permits.
307. Should an incident, such as a spill of hazardous substances, an injury or a community complaint occur during the course of site works, the Contractor Site Manager is to immediately notify the ICT who is then to forward the incident to the PRIME/SCORE Project Manager, CIU and EPA. The Site Manager is to take prompt and immediate action to minimize any impact and where necessary, liaise with all relevant authorities.
308. The Site Manager is to, in liaison with the ICT and CIU, direct an appropriate course of action and shall record the date, time and nature of the incident, full details of the causes and effects, further investigations to be undertaken, person responsible for such investigations, outcomes of the investigation, actions and resolution of the incident (including preventative measures implemented to prevent recurrence). Preventative measures are to be subject to monitoring and review. Incidents will be included in any audit reports during site works.
309. Where non-compliances or non-conformances with instruments are identified, the following process applies (Table 16).

Table 16: Non-compliance management

Incident Type	Identified By:	Process
Minor breach, procedural, no harm	Construction ESHS team	Results and corrective actions reported in monitoring forms and weekly reports to ICT / PIU. Corrective actions maintained on register and progress reported weekly until close out.
	ICT or PIU or CIU	Communicated with Contractor for remedy within 1 week. Corrective actions maintained on register and progress reported weekly to management until close out. Results and corrective actions reported in monitoring forms and six monthly reports to World Bank.
Moderate breach or non- compliance. Has led to an incident, or could lead to an incident without corrective action.	Construction ESHS team	Results and corrective actions reported in monitoring forms and weekly reports to ICT / PIU. Corrective actions maintained on register and reported weekly until close out. Close out of corrective action signed off by ICT / PIU.
	ICT, PIU or CIU	Results and corrective actions reported in monitoring forms and weekly reports to ICT / PIU. Corrective actions maintained on register and regularly reported until close out. Close out of corrective action signed off by ICT / PIU. Results and corrective actions reported in progress meetings and missions and documented six monthly reports to World Bank. World Bank assists where appropriate and necessary.

Significant non- compliance or breach leading to substantial or high risk situation. Major incident caused or could be caused by non- compliance.	Construction ESHS team	Immediate notification to ICT and PIU, then World Bank. Corrective action report prepared, documenting root cause analysis, risk analysis, and proposed remedies, actions, stakeholder involvement etc. for clearance by PIU and World Bank. Results and corrective actions reported in progress meetings with ICT and PIU/CIU (at least weekly) and in progress meetings and missions with World Bank.
	Design Engineer or PIU or CIU	Corrective actions maintained on register and regularly reported until close out. Formal reporting in monthly reports to ICT and PIU. Immediate notification to Contractor, ICT, PIU, CIU and World Bank. Corrective action report prepared, documenting root cause analysis, risk analysis, and proposed remedies, actions, stakeholder involvement etc. for agreement with the Contractor and for clearance by PIU and World Bank. Results and corrective actions reported in progress meetings with Contractor (at least weekly) and in progress meetings and missions with World Bank. Corrective actions maintained on register and regularly reported until close out. Close out of corrective action signed off by ICT / PIU. World Bank assists where appropriate and necessary. Formal reporting to World Bank during missions and six monthly progress reports.

310. **Emergency Management and Response Plan.** The objective of emergency response management for the Project is to ensure that Emergency Response procedures are established that can be rapidly implemented in the event of an environmental, health, social, security or natural hazard emergency.
311. Key procedures for preparing for, and responding to, accidental events and natural hazards should include (but not be limited to):
 - Emergency Response Procedures.
 - Incident Reporting Procedure; and
 - Crisis and Emergency Management Standards.
312. Regular environmental risk assessment will be undertaken to review potential environmental emergency situations that may arise. The methodology to be used for the periodic risk assessments will be consistent that outline in ESMP. External stakeholders, such as the local government authorities, may also be involved or notified in relation to emergency response implementation depending upon the severity of an environmental incident.
313. Determination of whether an incident is classified as an Emergency is based on environmental risk assessment. For an incident classified as an emergency, the following procedures will be followed. Any unforeseen environmental incident overlooked during the environmental risk assessment will be treated as an emergency situation until the Contractor management and/or PIU advises otherwise.
314. Emergency response to an environmental incident prioritizes the actions undertaken according to the following sequence:
 - Protection and rescue of human life;
 - Minimization of the area impacted by the incident
 - Protection of the environment, plant and property;
 - Rendering the area safe in which the emergency has occurred;
 - Restoration of all disrupted services; and
 - Decontamination and rehabilitation of the incident scene and surrounding area.
315. Depending upon the severity of an environmental incident, emergency response may also involve using the services of, or notifying, the following groups:
 - Police;
 - Ambulance;
 - DCT&I (and/or State representative authorities;
 - Pohnpei EPA;
 - State and Municipal Government;
 - Community leaders (such as Council of Chiefs); and
 - Others likely to be affected (e.g., local communities, downstream water users etc).

316. The fire risk from the works is considered minimal, however fire may originate from other sources (including both natural and human sources), but threaten the works site. Potential environmental impacts may include breakout of fire into surrounding vegetation, as well as release of significant quantities of air pollutants and contaminated runoff from burnt areas. Management and mitigation measures to minimize the risks associated with fire will generally include:
 - Adoption of mitigation measures including all fuel shall be stored in a bunded container away from machinery and other sources of ignition and fire extinguishers and/or a water pump to be kept on site;
 - Development of detailed firefighting procedures, fire fighter training, emergency drills, first aid/evacuation, and systems for warning Local Government;
 - Provision of induction sessions to Project employees on fire hazard to provide a basic understanding of fire awareness, measures to prevent accidental fires and the importance of reducing the risk of accidental fire for both safety and the protection of adjacent lands;
 - Fire equipment adequate for the level of risk identified for the various facilities, which are regularly maintained and tested to ensure good working order;
 - Adequate water supplies for use in the case of fire will be established in critical areas;
 - Earthing and lightning protection will be installed to structures vulnerable to lightning strike; and
 - Storage and handling of all substances under conditions which minimize the risk of fire or toxic emissions.
317. Flooding and storm events (including Typhoons) have the potential to impact the Project works area (e.g., traffic accident, power interruption).
318. A flood risk may exist for the works areas, and transport routes, given its location and proximity to the coast.
319. Rainfall intensities can also be relatively high in Pohnpei. High rainfall intensities have the potential to create a flood risk, particularly in low-lying areas where transport routes and other infrastructure may be located. Even minor flooding within these low-lying areas may have significant impacts on Project infrastructure and works
320. Based on the works area landform and local flood risks, the Contractor shall give consideration to flow diversion options during project planning and construction phases.
321. Unexploded Ordinance (UXO) are known to exist in FSM as a result of military actions throughout the Pacific during World War II from 1942-1945. While many of the UXO's have been cleared there is a chance some may still remained undiscovered.
322. Given the works to be implemented under the PRIME Project are largely within existing road corridors that had been constructed and maintained since that time (typically 1970s onwards), the chance of workers encountering UXO's as part of this Project is low.
323. However, mechanisms for identifying and reporting UXO's should be included as part of the OHS procedures. In the event that a temporary

road, bridge or causeway alignment is required an assessment for UXO risk should be undertaken, and a UXO clearance team may be required.

324. The Contractor OHS Procedures shall include the requirement to educate all site staff on the prevention and treatment of communicable diseases including filariasis, dengue, zika, hepatitis, HIV/AIDS and Covid-19.
325. The Contractor and all workers (including imported labor) associated with the Project are to comply to FSM National and State Covid-19 health and safety management plans, and international WHO standards, and include Covid-19 provision in the OHS Procedures (including travel restrictions for staff/workers returning home).

iv) Capacity Building and Training:

326. The current ESHS staff in the CIU, PIU, ICT are sufficient for the supervision and monitoring of risk. The proposed ESHS staff for the Contractor are sufficient for the planning, implementation and monitoring of CESMP (refer the implementation table). All staff should be adequately qualified and trained for their roles and responsibilities.
327. The following training is required:
328. **GRM:** CIU will provide a training workshop for all people responsible for GRM implementation, including ICT, PIU, PSC and Contractor. (no additional budget, part of CIU role)
329. **SEA/SH, STI's and HIV and Code of Conduct Awareness:** Contractor will provide to all workers. Details, including budget, shall be provided in the CESMP, including third party supplier details.
330. **Construction-related training:** All relevant ESHS training to implement the CESMP will be provided by the Contractor and detailed in the CESMP along with budget allocation.
331. **Implementation Schedule and Cost Estimates** A provision of \$USD 382,725 has been allocated to support ESMP implementation over 6 month preconstruction and 24-month construction period. This allocation includes the engagement of a Health, Safety and Environment (HSE) Manager and one Environmental and Social (E&S) support staff, who will be responsible for day-to-day ESMP oversight, compliance monitoring, reporting, and coordination with the PIU and regulatory authorities.
332. The remaining budget primarily covers environmental and social monitoring requirements, including:
 - Field-based environmental monitoring, including noise, dust, and turbidity assessments
 - Bat and Pohnpei Kingfisher population and behaviour studies
 - Consumables, field equipment, laboratory analysis, and logistics associated with monitoring activities
333. These monitoring components represent the largest share of the ESMP expenditure, reflecting the frequency of sampling, laboratory testing costs, and the need for ongoing verification of compliance with World Bank ESS requirements and national environmental regulations (Table 17)

Table 17: Estimated ESMP Implementation and monitoring Cost for Construction Contractor

Items	Unit	Unit Cost (USD)	No. of Units	Monitoring Frequency	Total (USD)
ESHS Staffing					
Environmental / Safety Officer/Community Liaison Officer (1) - Local Hire ²⁶	Month	3,000	24	Daily basis	72,000
Senior Environmental, Social Health and Safety Manager (ESHSM) Manager ²⁷	Month	10,000	24	Daily basis	240,000
Biodiversity Monitoring Expert ²⁸ (08 months)	2000/Pre-construction baseline & Quarterly reports	2,000	1	Quarterly basis	18,000
ESMP Cost					
EPA or KIRMA Fee permits		500	1	As per requirements	500
PPE		5,000		As per requirements	5000
On-Site Toilets		10,000		As per requirements	10000
First Aid Equipment	10	1,000			1000
Public consultation (printing, catering, hall hire, information publication etc)		1000	8	One public consultation session a quarter to provide an update on the project	8000
Training					
Capacity Building / Training (Approx. 20 staff)	Monthly – in house				
Third party training	6 monthly	\$1,000	3		3,000
Environmental Monitoring (Construction Phase)					
Ambient Air Quality Monitoring – 1x handheld monitoring PM10	Equipment	2,500	1	Weekly monitoring/ if a complaint is received from the community	2,500

²⁶ The Environmental / Safety Officer/Community Liaison Officer (local) will assist the Senior ESHS Manager and visit the construction site regular on daily basis. Apply the ESHS checklists designed by the Senior ESHS manager as per frequency defined and report to the ESHS manger on daily basis. Train the contractor's labour in the ESHS related aspects. Will carry out any task assigned by the Senior ESHS manager or Project manager.

²⁷ Environmental, Social Health and Safety (ESHSM) Manager will prepare the Contractor's Environmental & Social Management Plant (CESMP) and required subplans in line with the ESMP, SCORE/PRIME ESMF, ESCP, World Bank ESSs, World Bank general EHS guidelines & FSM or State level applicable regulations. Undertake regular daily site inspection visits, prepare the ESHS related monitoring checklists with its frequency, train the local ESHS manager that how to apply the checklist organizes and follows up the ESHS Program under the direction of the Project Manager. Train the Contractor's labor force as per CESMP requirements. Prepare monthly, quarterly, semi-annual CESMP progress reports as per requirement of the ESMP and Client and submit the PIU and CIU for review. Participate in the weekly and monthly CESMP progress review meetings. Ensure compliance to all ESHS related applicable local legislation, contractual & other requirements. The overall responsibility for the development and implementation of the Project ESHS Policies and plans and updating the CESMP including subplans as required. Supervision and monitoring of ESHS personnel including local ESHS officers and supervisors. Provide specialized ESHS input into engineering, construction and contracts, ensuring requirements are properly integrated into project planning, design criteria, construction plans and specifications and contracts. Coordinating and organizing regular meetings with the Project Manager and Construction Manager in order to discuss the site's ESHS issues and requirements. Monitoring construction activities and performance to ensure compliance with the CESMP and subplans and effectiveness of control measures adopted. When required, arrange the ESHS trainings for relevant staff. Oversee subcontractor / Vendor / Parties OHS manager and their performance.

²⁸ The biodiversity monitoring expert will be hired to establish a robust pre-construction biodiversity baseline for the Flying Fox and Pohnpei kingfisher, tailor the baseline with the final design, construction schedule, and work method statements, assess anticipated impacts on biodiversity and devise mitigation measures to be integrated in the Contractor's CESMP. During construction and till completion, on quarterly basis, the biodiversity monitoring expert will assess, track, the CESMP mitigation measures on the on the biodiversity and local ecosystems. The biodiversity expert will prepare biodiversity monitoring report on quarterly basis and will submit to the PIU and CIU for review. If required, the expert will participate in the site visit of PIU, CIU and WB.

Ambient Noise Monitoring – 1x Class 1 sound meter	Equipment	2,500	1	Prior to works commencing (baseline), Daily monitoring during activities/ if a complaint is received from the community	2,500
Surface water quality – 1x turbidity meter, calibration solution for 24 months of operations	Equipment	2,000		Weekly monitoring during construction	2000
Reporting					
Contractor's Environmental & Social Management Plan (CESMP)	Monthly	No cost		Quarterly / Annual reporting required as part of the project	
Sub-Total (in USD)					364,500.00
Add 5 % contingency					18,225.00
Total					382,725.00

334. **Integration of the ESMP with other Project documents and Plans.** Several environmental and social instruments were prepared at the time of funding appraisal for the PRIME Project in order to manage risk across all components and sub-project investments in accordance with FSM country systems and the World Bank ESF. Many documents relate to both the PRIME Project and Strategic Climate-Oriented Road Enhancement Project (SCORE)²⁹:
- (i) PRIME Environmental and Social Commitment Plan (ESCP) - outlines the specific environmental and social measures FSM must implement, detailing actions, timelines, and responsibilities to manage risks like pollution, labor issues, and social impacts, ensuring compliance with the ESF and the relevant ESS. The ESCP forms part of the legal agreement between FSM and the World Bank and must be complied with for the duration of the PRIME Project.
 - (ii) PRIME/SCORE ESMF: is a framework for identifying and managing all environmental and social risks under PRIME and SCORE. The purpose of ESMF is to examine the risks and impacts of a project when the project consists of a program and/or series of works, and the risks cannot be determined until the program or works details have been identified. The ESMF has a screening process for all sub-projects, which guides the scope of the investigations and type of instrument(s) to be prepared (such as ESMP). The ESMF provides general guidance on mitigation and monitoring measures for all sub-projects.
 - (iii) PRIME/SCORE Resettlement Framework (RF): clarifies resettlement principles, organizational arrangements and design criteria to be applied to PRIME and SCORE works or project sub-projects to be prepared during project implementation. The RF prescribes the processes for identifying land requirements, consultation with land owners and occupiers, preparing plans or due diligence assessments, valuations, entitlements, land acquisition and monitoring.
 - (iv) PRIME/SCORE Stakeholder Engagement Plan (SEP): provides stakeholder mapping for the projects and provides a plan for identifying and engaging with stakeholders for each component and sub-project, documenting and addressing feedback, disclosure of documents and a grievance redress mechanism for the projects which must be applied to each sub-project.
 - (v) PRIME/SCORE Labor Management Procedures (LMP) documents the labor and working conditions requirements, including OHS for all workers under PRIME and SCORE, including contractor's workers, in accordance with ESS2. The LMP also contains a worker's grievance mechanism.
 - (vi) PRIME Generic ESMP: is a model or template ESMP for moderate risk sub-projects which do not have unique or site-specific risks. It includes a CESMP template. Many of the mitigation measures can be utilised or adapted for use in site specific ESMP.
335. All subproject investments such as the Awak Bridge Replacement Project must follow the processes, procedures and standards of the aforementioned instruments. The Project was screened under the ESMF and RF and the screening concluded the following:

²⁹<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/453251648600227981>

- (vii) The Project was classified as moderate risk. This means the project impacts are site-specific, few in number, and not complex. Adverse impacts are temporary or reversible with mitigation. Potential negative consequences are well-known and easy to identify. Mitigation measures typically include standard, established procedures rather than complex, specialized designs
- (viii) The Project required a site specific ESMP, proportionate to the environmental and social risks. The Generic ESMP mitigation measures could be applied where relevant.
- (ix) The Project required a Land Access Due Diligence Report (LADDR) to validate the land ownership and approvals for the works to go ahead.
- (x) The Project must implement and comply with the LMP and SEP, proportionate to the risks and issues.

8) CONCLUSIONS

336. The improvements to bridge safety and functionality will bring positive outcomes to the U Awak community and surrounding communities of Pohnpei by enhancing transport efficiency as a result of bridge replacement and road improvements leading to enhanced flood immunity, coastal protection and pedestrian safety.
337. The program of works are supported by the community.
338. Key project activities are the demolition and replacement of Awak bridge and repair of the coastal embankment, upgrades of the road and road drainage and replacement of two culverts. A Bailey bridge will be installed to divert traffic whilst the bridge replacement program is being undertaken. An upstream gabion in Pilen Kepin Awak stream is also being considered pending a hydraulic analysis.
339. Sediment runoff control and hazardous waste management during road and Bailey bridge construction is required to maintain the ecological function of Pilen Kepin Awak stream. Management of vibration and sediment control of ingress water during the construction, then operation of the coffer dam during bridge construction are also key environmental and social management activities.
340. Though there has been extensive modification of the natural environment around the proposed project site, the Pilen Kepin Awak stream which passes under the bridge near the coastline is classified as natural habitat according to ESS6.
341. There will be no net loss in the Pilen Kepin Awak stream as result of the project activities. During construction, embayment flows are retained and stream health is preserved. No upstream works take place as part of the Project, except for the installation of gabions to fortify stream banks, reducing likelihood of erosion and sediment load in the stream. This will promote revegetation among the banks, improving biodiversity within the riparian zone. Sediment and erosion mitigation measures will be in place during the project, providing loss of containment controls.
342. Works on the coastal embankment repair will continue after consultation with the community on maintaining the cultural significance of the site. With these inputs from the community, a detailed mitigation plan will be prepared. The specific mitigation measures will be included in the CESMP by the contractor. If necessary, additional or alternative design may be required to avoid or mitigate cultural heritage impacts.
343. Traffic management details have been detailed by the design engineer and will be implemented by the contractor during the project works. The TRSMP will focus on the requirements for safety during all hours for the congregation of St Joseph Church, the Awak elementary school and local residents as well as protecting the workers from road accidents.
344. Critical habitat for the endangered Pohnpei Flying Fox and the Pohnpei Kingfisher includes fruit trees, and mangroves for feeding for the bird. The project's impact on these habitats is expected to be minimal, as large areas of mangroves surrounding the site providing suitable habitat.
345. This assessment will be updated with the additional surveys and assessments prior to works starting. The pre-works survey will add valuable scientific knowledge about the Pohnpei Flying Fox's and the Phonpiei kingfisher behavior, which in turn will inform future conservation efforts and will be a net gain in biodiversity outcome for this critically endangered species.

346. With these findings, this ESMP is considered appropriate to meet the environmental and social safeguard requirements of WB and Pohnpei state, in respect to the management of the Awak Bridge replacement and road embankment upgrades and future operations.

Appendix A: Record of Consultations

Stakeholder Consultations

Public Consultation in Awak, U, Pohnpei

A Community Stakeholder Consultation took place on November 14, 2024, in the Community Center near the Awak Catholic St. Joseph church, in Awak, U, from 3:00 pm to 6:00 pm. Flyers were posted in both English and the local language, as shown in Figure 9-1 below.

Figure 9-1: Awak Bridge Community Consultation Flyer



Project en Piris me Pato Awak, Pohnpei

Mehn kair oahng Wein U oh Pohnpei Unsek

November 14, 2024, Tehnpas Sarawi en Awak, Kiloak 9:30 lel 12:30 pm

Oahpis en World Bank patohwan sawaski tehte de money oahng Prioritized Road Investment and Management Enhancement de PRIME project nan Pohnpei pwehn kamwahwiahla Piris me pato Awak ni tehnpas sarawi. Project we pahn pil pidada iren kahpwal akan me irail akahn mekin weidedo pohn piris wet pweren patohdo de ketdo nan wein Nett de pil kolonia oh pil pahn kosoia mwomwen kamwahulahn piris wet.

Semen kei pahn patohdohsang likin Pohnpei ni November 8-15, 2024 oh pil pahn patehng irail sohn doahdoahk kei me pato Pohnpei oh ehu ieng tohn kouson de wein U ahpw mehleh irail akan me karanih piris pwukat Awak oh Saladak. Sahi wet pahn pwarek piris pwukat oh irail akan me karanih wasa pwukat pweren kaunopada keimwseklahr koasaongdi oh wiepen piris pwukat.



Sang ni tuhpene wet, se men peki sapwelmamwail iren kaweid oh kapwunod kan de pil kaweid kan me pahn kak sowese kamwahualala piris riau pwukat pwehn kak en werei oh mwahuieng sapwetail wet.

Se lukei komwi oahng tuhpene wet.

Rahn: November 14, 2024, sang kiloak 9 menseng lel kiloak 12 elep ni souwas.

Wasa: Tehnpas Sarawih en Awak-catholic church- imwen keiru de sinakoke

Iren kalelapak de keinemwe komw kak eker:

Delepwohn, nempe 320-8742/3991 de pil email: umunicipalgovernment@gmail.com

Participation was somewhat limited due to a major funeral in the family of the King of U (*Nanmwarki*), but the King, along with the consent of the Mayor of U, had sent a designated community representative, as well as an Adjacent Landowner representative to attend the meeting, (see Figure 9-2 below).

Figure 9-2: Awak Bridge Community Consultation Attendance Sheet (redacted).

FSM PRIME Road Infrastructure Investment Project - SSESMP					
Meeting Venue: Awak Community Center, U, Pohnpei					
Date: 11/14/24 Time: 3:00 – 5:00 pm					
No.	Name	Designation (government, community leader, NGO, business owner, etc.)	Gender	Phone/email	Signature
1			M		
2			M		
3			M		
4			M		
5			M		
6			F		
7			M		
8			M		
9			M		
10			M		
11			M		
12			M		
13			M		
14			M		
15			F		

Community Meeting and Stakeholder Perception Survey
Awak Community Center, U, Pohnpei

MEETING MINUTES

Meeting Note Taker:	Olivier Wortel, National Environmental and Social Consultant, PCS
Date/Time:	November 14, 2024, 3:15 pm to 6:15pm

Welcoming and Overview

National Environmental and Social Consultant Wortel opened the meeting at 3:15 pm, Pohnpei time, and welcomed the participants and thanked them for their time. Wortel briefly explained the purpose of the meeting: to gain community feedback and input to the impending Awak Bridge improvement project, including any concerns and issues that exist. At the prompting of Mr. Bejay Obispo, Vice Speaker for the U Municipal Council, Mr. Wortel invited Mr. Obispo to give an opening prayer to bless the meeting and the food.

Obispo then delivered a prayer in the local language, and the meeting was formally started.

Introductions

Wortel started by introducing himself as the lead National Environmental and Social Consultant on the project, representing Palikir Consulting Services (PCS), and that the team present were well-versed in social and environmental commitments and that such sociological and ecological factors needed to be more fully integrated into the final project design for the Awak Bridge. Wortel then asked the International Consultants sitting at the presentation table to introduce themselves.

Dr. David Lees introduced himself as the International Environmental Expert (IESE) for this consultancy, noting that he was also a certified Civil Engineer, and is able to provide a relatively holistic view of the various project elements. Lees stated that he has worked in over 55 different countries on World Bank and other development partner funded projects.

Ms. Rosemary Faletoese introduced herself as the International Social Expert (ISSE) for this consultancy and stated that it was very important to receive the thoughts and feelings of the community on the project, and that the team was there to elicit those in an open manner.

Mr. Rico Rico introduced himself as the Project Officer for the World Bank PRIME project and also introduced his two recently hired Project Assistants, Mr. Triston Gallen, and Ms. Shalie Mar Torres, all of whom work out of the DTC&I Project Management Unit (PMU).

Rico stated that they were there to support the consulting team. Rico asked Mr. Wortel if there was any local PCS staff present to assist with any translation needs, and Mr. Wortel responded that unfortunately, the designated local staff was unexpectedly called away prior to the Awak meeting for a funeral in his community and thus could not be present.

Mr. Shiva Dhakal introduced himself as the Social Expert (SSE) for the FSM national government Central Implementation Unit (CIU), and that he would be observing the proceedings to ensure that appropriate social mechanisms would be observed throughout the process of the project.

██████████ introduced himself as a highly interested ALO to the project, and expressed a desire to voice some concerns about the final project design, as well as some trepidation of climate resiliency implications for increased precipitation events and the effect it would have on his home and surrounding property.

Mr. Macyver Obispo introduced himself as an employee of U Municipal Government and said he was there on behalf of the local government to observe and report.

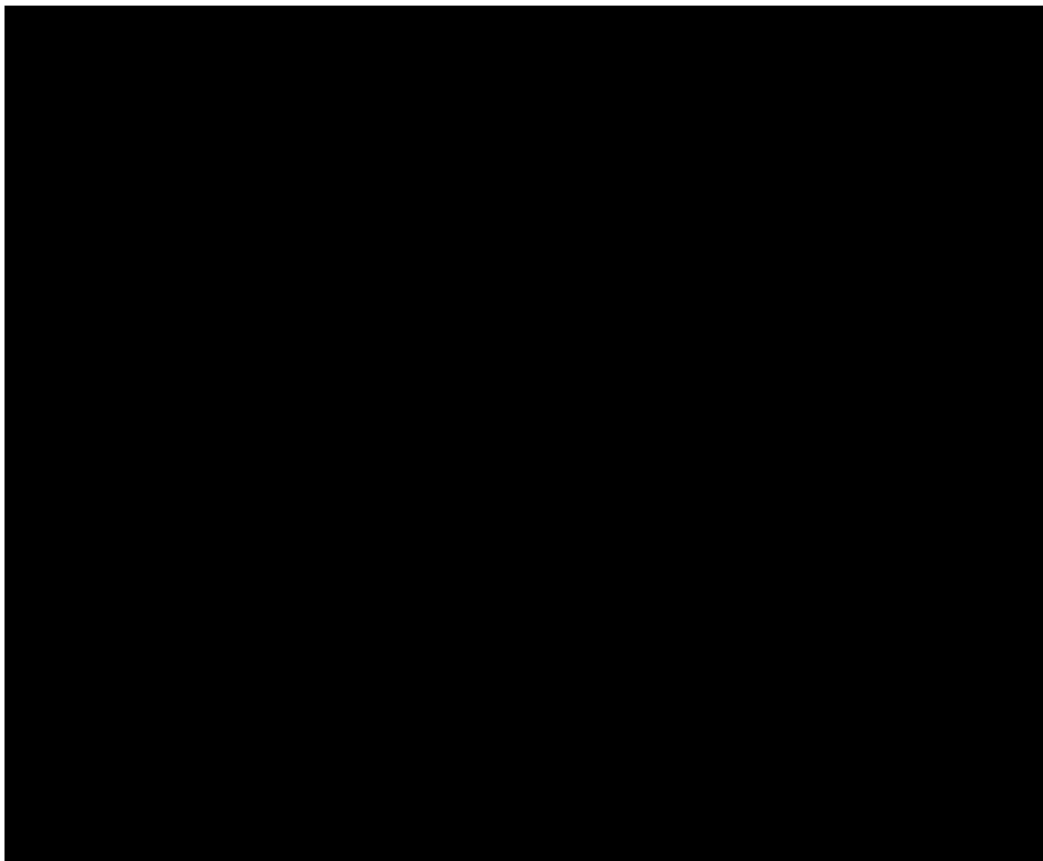


Figure 11-4: Designated community representative Bejay Obispo (left), and ██████████

Vice Speaker Obispo thanked the National and International consultants present for their time, as well as the various state and national government personnel in attendance. Obispo started by apologizing for the relatively lower than expected turnout for the event due to the fact that the Paramount Chiefs' – the Nanmwarki of U – oldest sister had passed

away the day prior, and that the entire 11 Villages of U were present at that very important cultural event.

Obispo assured the consultants that all of the 11 Villages of U were well aware of and informed of this engagement and would be monitoring the outcomes through the community emissaries sent, primarily represented by Vice Speaker Obispo and [REDACTED] [REDACTED] [REDACTED] closed his introduction by stating that the community of Awak has been aware of this project for the past 4-5 years and looked forward to its implementation.

Awak Perception Survey Presentation

Dr. Lees thanked the community members for their time and for allowing the consulting team to provide their inputs to the subject at hand. Dr. Lees provided general background and context of the project first, and highlighted the fact that the sociological and ecological receptors of the project were of paramount importance, before launching his presentation, which was themed on the Environmental and Social (ESS) lens for all aspects of the Awak Bridge design and construction phases.

Dr. Lees noted that for design, all Environmental and Social aspects are considered in weight, height, width and so forth to ensure that water flows are maintained or improved in this area of the island, which sits in a large basin surrounded by steep mountains, and where flooding is likely to occur.

Dr. Lees then discussed the construction of the bridge and explained to the community group that the old bridge would be removed, while at the same time a temporary portable bridge – or Bailey Bridge – would be placed on the landward side of the project site, so that what is ultimately left with the community does not do any environmental damage and improves the social aspects of the community. Dr. Lees again reiterated the stipulation that any construction works must not affect the hydrological regime, and must instead seek to assist and improve it. Likewise, any temporary removal of social or ecological infrastructures must ultimately also be replaced and improved.

Dr. Lees then stated that the output of this consultation would be the drafting and submission of an Environmental and Social Management Plan (ESMP), a document which would become part and parcel of the final designs, the tender documents, and part of the contractor's agreement, the Environmental and Social elements of which would be binding. Dr. Lees made a point of saying that the ESMP is a public document and that everyone would be provided a means to access it if they so wanted.

Dr. Lees then discussed the portion of the presentation on grievance redress and highlighted the existence and importance of the project Grievance Redress Mechanism (GRM). Dr. Less stated that the project contractors and supervisors should welcome complaints, and that there should never be any reason why anyone at any time should not be able to file a complaint, with no fear of retribution. Dr. Lees highlighted further that the culturally appropriate means and system of redress to a complaint should be identified and implemented.

Ms. Rosemary Faletoese added that the GRM is an important tool and mechanism for any infrastructure project, particularly in a community as close-knit as U, and that this is a means by which any issues or complaints, including those from women and girls, should be expressed in the culturally appropriate manner. Ms. Faletoese added that the primary purpose of ESS is to ensure that no harm is done, either to the people or to the ecosystems on which they depend.

Dr. Lees closed the presentation with some of the safeguard's aspects to be considered during the construction phase of the project. These included an estimate of approximately 6 months from start to finish, and the importance of building trust between contractors and the community in various ways in order to facilitate this. He said that it would be inappropriate for contractors to work at nights or on Sundays, and that if this were needed, that the contractor should seek permission from the local chiefs to do so first, what he referred to as, "apologizing beforehand".

In addition, Dr. Lees noted that it is most often a requirement for contractors to have a minimum of 30% of their workforce hired from the community itself. Dr. Lees indicated this not only builds a strong relationship between the contractor and the community, but also spreads direct economic benefits into the community from the project actions. Dr. Lees stated that the project would require monthly Corrective Action Reporting (CAR) that addresses any ESS shortfalls or omissions.

Lastly, both Dr. Lees Ms. Faletoese stated that this engagement was a final check in with the community to understand any issues, concerns or ideas so that they may be incorporated into the final project design and such would inform the ESS project implementation and construction aspects for the community.

There was a round of light, appreciative applause from all present. There were several discussion points after the presentation:

- Vice Speaker Obispo thanked Dr. Lees and stated that a bridge with a wider span is what the community wanted, so as to improve water flow from the watershed into the river and the estuary beyond. Obispo stated that this project had started with discussions in the community five years ago, and that "99 to 100 %" of the people in Awak were aware of it. One other primary concern from Obispo was the question of when the project would finally start, as the community are eager to participate in project activities and an improved, safer bridge.
- Vice Speaker Obispo continued with a cultural and ecological concern at the project site: the fact that across the road from the Awak Community Center there exist a small set of dwarf mangrove forest, which is a known burial site for dwarfs, or small humans who existed in the past, and that this needed to be considered and respected during all phases of the project.

Finally, Vice Speaker Obispo asked if there would be additional community consultations for the project, stating that this would be important as the project mobilization neared, and said that any community

consultation should be announced one week in advance, not more or less, of the proposed meeting.

As a closing comment, Vice Speaker Obispo stated that it would be important to provide an opportunity for local community members to play a role in project supervision and oversight, particularly for Environmental and Social matters.

- [REDACTED] stated his main concern of climate impacts increasing the water flows due to increased precipitation, as well as increased extreme precipitation events, stating that May/April and December are generally the two times of year that there are higher risks to the community for this, specifically for his and surrounding ALO homes.

There were no further questions or comments.

Survey Introduction and Facilitation

Ms. Faletese introduced the project perception survey, explained its purpose, and asked for some of the PCS support staff to hand them out for the community members present. Ms. Faletese stated that the respondents were free to answer any questions they were comfortable to answer, and that if there were any that they found unnecessary or unusual, they could choose not to answer.

The facilitation team then assisted the completion and collection of the surveys.

Closing Remarks

NSS Wortel closed by thanking his Environmental and Social team and other staff who supported coordination and logistics of this stakeholder meeting, including the outreach and public awareness activities, and especially the community members present, despite the difficult circumstances in the community at this time, with the funeral taking place, and asked Vice Speaker Obispo to send the teams condolences as appropriate to the *Nanmwarki* of U for the unexpected and tragic loss of his older sister. Wortel asked all of the participants to help themselves to the packed boxes of food and closed the community meeting.

END.

Annex II – Post-Community Consultation Site Visit with Adjacent Land Owners

After the consultation was completed on November 2024, the Environmental and Social Team, led by Olivier Wortel, and supported closely by Dr. David Lees and Ms. Rosemary Faletoese, took the opportunity to meet with two of the community leaders. [REDACTED] also happened to be one of the immediate Adjacent Land Owners to the project site, and thus his inputs and knowledge of the river – which runs on two sides next to his home and property – would be critical to listen to, discuss and take in. [REDACTED] explained that he has lived on this piece of property at the head of the intertidal zone where the river meets the bay his entire life, and that increasingly, extreme weather events – super high tides and mass precipitation as two clear examples – were of paramount concern.

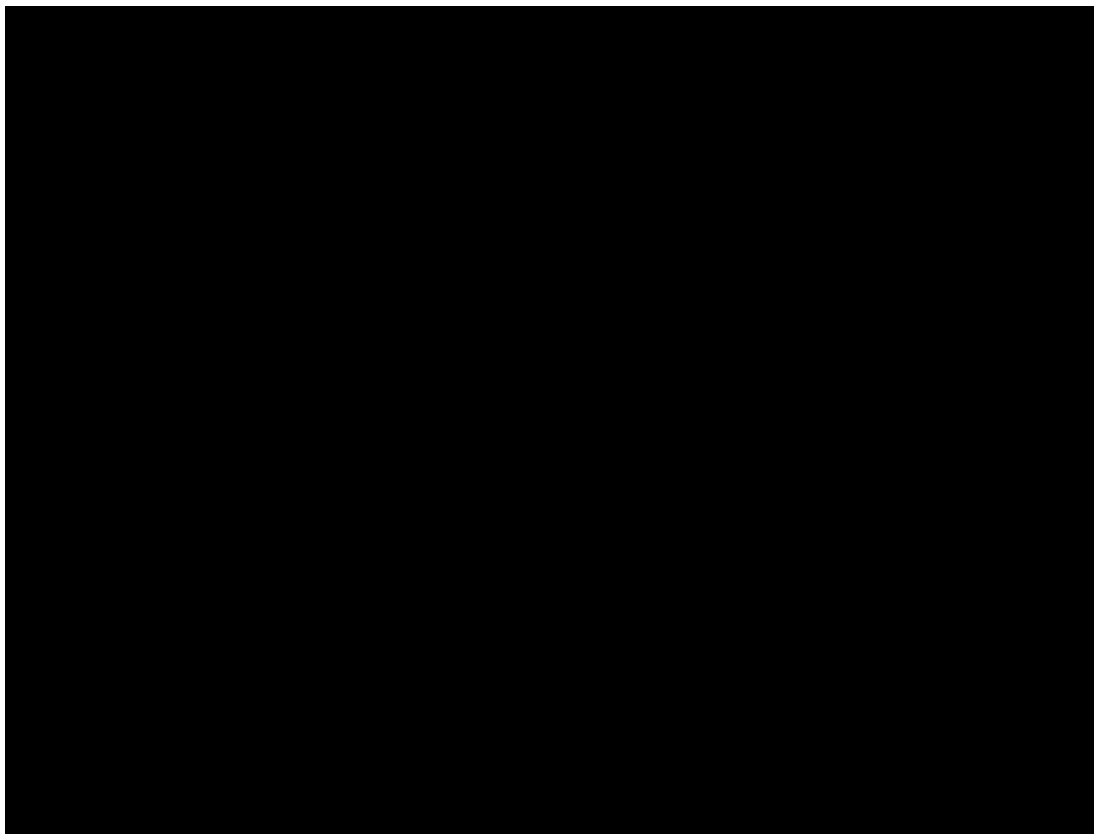


Figure 11-5: Site Visit with Adjacent Land Owner and Community Representative

[REDACTED] led the team to upper part of his family compound, behind his home, where the river runs parallel to the home in the back, approximately 6 meters away, and then showed the team where it quickly turns toward the Awak bridge and into the bay, along the southern side of his property, about 5 meters from his main house. It was clear that the river had the potential to cause significant damage and erosion with continued extreme precipitation events. [REDACTED] had three major requests:

1. That a secure retaining wall be built along the river at the east end of his home and property behind the main dwelling, and continue along the southern side of the home where the river runs to the sea;
2. That the Awak Bridge span be lengthened by at least 10 ft toward the south so that the river could run straight from his home into the bay, with the reasoning that this would protect any new bridge infrastructure from heavy water flows, as well as reduce the potential for erosion of land of his extended family and neighbors nearer to the bridge (██████ himself lives about 30-40 meters upstream of the bridge); and,
3. That both sides of the river be built up with a higher, more secure retaining wall – e.g., Gabion baskets – so that both the main community St. Joseph church on the north side, and homes on the south side of the river would be protected from flooding and erosion.

██████ reiterated what the broader community has communicated – that the bridge improvement project was decades in need and that the community very much looked forward to it – and that if these elements could be considered, the project would be very much welcomed. He hoped to see it come to fruition soon.

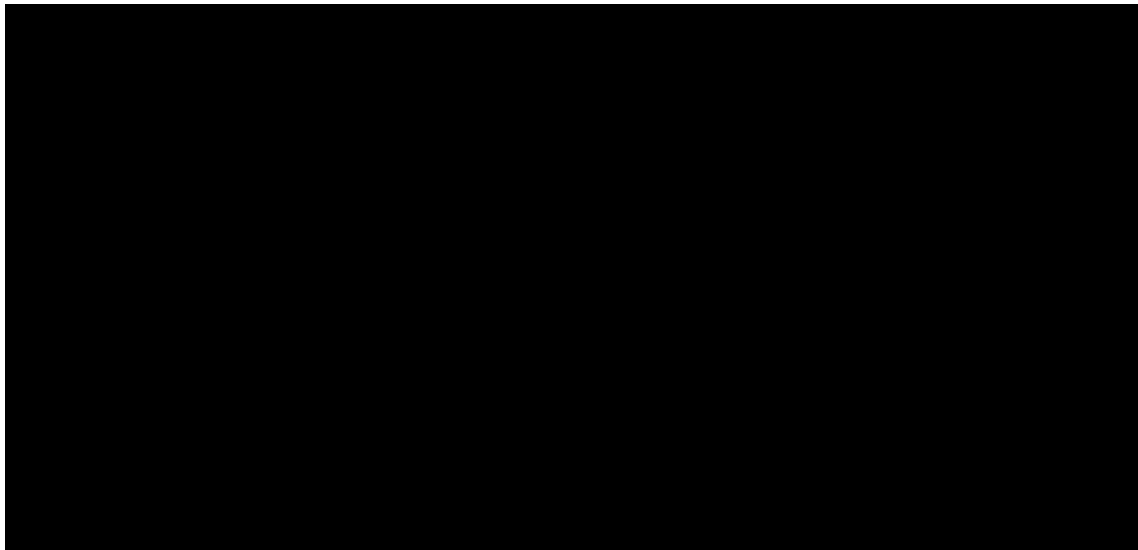


Figure 11-6: Review of areas prone to flooding during high precipitation events

As the consulting team departed the post-community consultation site visit with the ALOs, Mr. Obispo led the group to their car and left them with one final request, as he thanked them for their time and attention to the community needs and those of the ALOs: that both he himself, and other community members be hired to support project oversight and construction activities.

The team thanked [REDACTED] for their hospitality and time and stated that in regard to Environmental and Social commitments, it is always appropriate to have local community members involved in project implementation.

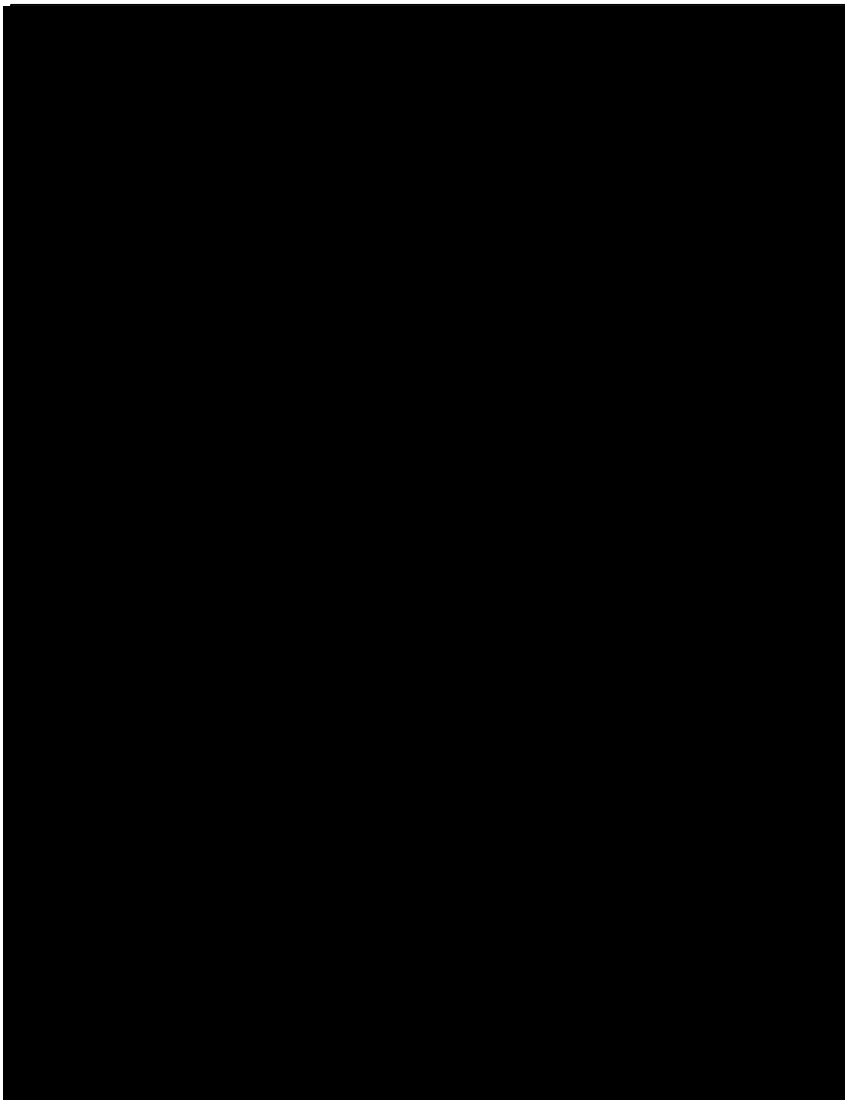
Annex III – ALO Agreements for Temporary Land Use

Several ALOs agreed for the temporary placement of a Bailey bridge – Awak

After the public consultation, meetings were set up with several key Adjacent Landowners (ALOs) in order to sign off on the placement of a Bailey bridge at the Awak St. Joseph Church parking lot extending over the Awak River to the other side. This activity was undertaken by PCS staff, the FSM PMU and a U Municipal Government representative. Ultimately, all of these stakeholders revealed no major issues with the project and signed off on the ROW documents for this section of road without issue or grievance. In total, there were three Statements of Permission for Temporary Land use signed to enable the project to proceed (Figure 11-7):

1. [REDACTED]
2. [REDACTED]
3. Awak Catholic St. Joseph church

Figure 11-7: Signed ROWs for project Temporary Land Use





GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA
Department of Transportation, Communications & Infrastructure
P.O. Box PS-2, Pohnpei, FM 96941
Tel.: (691) 320-2865 Fax: (691) 320-5853

Statement on Permit for Temporary Land Use

I, the undersigned herein under,

Name

ID Card/Drivers Lic. :

Address :

As the legitimate owner of the land by virtue of a valid Proof of Entitlement Number 131-A-01(4,712 sqm/ 50,719.55sqft) Date 8th July 1983 hereby declare that I allow my land to be used by the Department of Transport, Communications and Infrastructure, FSM National Government (DTCI) to be utilized for construction work of the Awak Bridge replacement for 2 years for the benefit of the general public.

Location of the land	: West of stream flowing between this property and the Church
Land size to be lent	: 2000 sqft
Remaining land size	: 48,719.55 sqft
Existing land use	: Residential
Land Ownership status	: Owned

This statement is duly made without any pressure from anyone.

Place, date this mutual agreement is signed

Party giving the permit

Party receiving the permit on behalf of National Government

Signature of the Land owner

Signature of Officer of DTCI

Shankarah Lesscy

Signature of Witnesses

Name 1

signature

Name 2

signature

Attachment: Sitemap of land to be donated and photo.

Remarks: Original copy of this letter will be kept by the land donor as part of the proposal.



GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA
Department of Transportation, Communications & Infrastructure
P.O. Box PS-2, Pohnpei, FM 96941
Tel.: (691) 320-2865 Fax: (691) 320-5853

Statement on Permit for Temporary Land Use

I, the undersigned herein under:
Name

: *ROSTAN APOR*

ID Card/Drivers Lic. :

Address :

As the legitimate owner of the land by virtue of a valid Proof of Entitlement Number II2-A-05 Date 8th July 1983 hereby declare that I allow my land to be used by the Department of Transport, Communications and Infrastructure, FSM National Government (DTCI) to be utilized for construction work of the Awak Bridge replacement for 2 years for the benefit of the general public.

Location of the land	: West of stream flowing between this property and the Church
Land size to be lent	: 2000 sqft
Remaining land size	: 48,719.55 sqft
Existing land use	: Residential
Land Ownership status	: Owned

This statement is duly made without any pressure from anyone.

Place, date this mutual agreement is signed

Party giving the permit

Party receiving the permit on behalf of National Government

Signature of the Land owner

[Signature]

Signature of Officer of DTCI

[Signature]
Shankarah Lessey

Signature of Witnesses

[Signature] *BEJAY OTSIA*

Name 1 signature

Name 2 signature

Attachment: Sitemap of land to be donated and photo.

Remarks: Original copy of this letter will be kept by the land donor as part of the proposal.

Annex IV – Confirmation of Temporary Land Use

On 4 June 2025, PCS and the FSM PMU, represented by members of the Supervision Engineering Team and PIU, respectively, met with the designated U Municipal Government and Community representative – Mr. Bejay Obispo – to confirm that the ALOs (including the Awak Catholic St. Joseph church) remained supportive of the project's need for temporary land use in order to place a Bailey bridge on adjacent lands to the existing bridge, as per the previous agreements (see Figure 11-8 below). Mr. Obispo confirmed that all ALOs were still 100% supportive of the temporary use of land and that the previous signed documents remained in effect. Mr. Obispo also provide permission on behalf of the community and the ALOs for PCS and PMU to undertake any other site investigations, either in the riparian space above the bridge or in the marine space below the bridge (Mr. Wortel would subsequently undertake a rapid marine survey below the bridge in and around Awak Bay from 6-7 June 25).

Figure 11-8: PCS and PMU meeting with U Government and Community representative to confirm continued ALO support for temporary land use.



Expected benefits of the upgrade - The life expectancy of the new road is expected to be at least 20 years. - The double-lane-two-way of the road, similar to the three-lane road, will provide quality-of-life improvements. - Existing utility services include water will also be relocated to a dedicated utility corridor as part of the civil works. - Any significant environmental and/or cultural sites will be mapped and avoided in the upgrade process. The map is in the file. - Further consultations will occur throughout the process, especially with known affected persons and to those who may be affected. 	Additional benefits to be included - Guardrails will be adjusted at culvert structure locations and at locations governed by site conditions to improve safety. - A pedestrian walking off along the roadway – required to ensure safer movement of pedestrians. - Existing culverts proposed to be reconstructed with bigger culverts and as additional 5 new culverts – the reconstruction of the natural existing drains and outfalls towards the ocean will mean there is minimal impact on existing properties. - Improved longitudinal cross drainage drains on both sides of the road will capture storm water and diffuse catchments from the hills and land. This will facilitate discharge through natural channels and the outfall to the ocean. Ongoing regular maintenance will be required for these drains.	Construction Local workers will take approximately 6 months and there will be some interruptions for contractors while this is underway. However, this will be minimized as much as possible, for example: - Some nuisance effects will be experienced by nearby residents and businesses during construction, including dust, traffic delays, vibrations and noise. - Water disruption to traffic during construction. This will be managed by a temporary detour. - Pou Bay is a large source of water with fishing interaction between the bay and the open sea. It is important to maintain the water quality by avoiding/minimizing any unplanned discharges from the construction areas. - These will be controlled through the Environmental and Social Management Plan (ESMP), implemented by the contractor and supervised by the consultants, to ensure such effects are kept to an acceptable level.
Safeguards - Implementing these works will follow both international and national best practices. - Negative impact to local people of the project – be environmental and social impacts – will be minimized. - The design and construction of the road from the airport to the Pou Bay bridge will affect the patterns of affected communities with preventative and mitigation measures built into project activities. - Environmental concerns will be mitigated through the Environmental and Social Management Plan (ESMP).	ESMP - Environmental and Social Management Plan (ESMP) is part of the conditions imposed on the contractors. - It is part of the tender document and so is contractually binding. - It requires the contractor to give preference to hiring local people. These can be female who are offered the same pay as men for the same job. - It contains a Grievance Redress Mechanism. Contractor must put up a large sign and give name and mobile phone number of contractor representative to be contacted for complaints.	

Appendix B: Perception Assessment Methodology for Social Survey

The project Stakeholder Engagement Plan (SEP) was used following approach:

- Household surveys
- Focus Group Discussions (FGDs)
- Key Informant Interviews (KIs); and
- Community Consultations (CCs)

Other informal and formal means of engagement that are acceptable through the traditional, political and cultural lens of state and local governments and non-government institutions.

The Survey Team, which included national and international consultants, and government representatives, carried out a focus group discussion and social survey for the Perception Assessment over two and a half weeks.

A social research methodology was utilized to derive information relevant to the social baseline and potential social impacts and benefits of the project. This involved gathering both quantitative and qualitative information through one focus group in Pohnpei followed by a survey of 9 local stakeholders.

(i) Data sources

A combination of primary and secondary data was used to develop this present baseline.

Secondary Information – This included:

- (i) the 2010 FSM Population and Housing Census; 2013 Household Income and Expenditure Survey and Poverty Profile of FSM
- (ii) Other relevant public domain information.

Primary information – For this project, the community consultation involved two activities: Methodology of Perception Assessment in Pohnpei in November 2024 and a Community Meeting was held at the Awak Community Centre, U, Pohnpei, at November 14th, 2024.

(ii) Survey

The survey was translated and presented in Pohnpei dialect where necessary for the ease of the participants attending and responding. Content included:

- (i) **Information provision** – presentation materials were used to describe key aspects of the proposed project.
- (ii) **Questionnaire** – A number of specific questions with responses formed the basis of the survey. These questions applied an ordinal scale to responses whereby there was a limited number of responses available. Other questions

enabled open ended questioning to draw out succinct yet valuable nuances pertinent to the social and economic characteristics of Pohnpei.

- (iii) **Local ownership:** The consultations encouraged survey respondents and their community with an initial sense of ownership of the proposed road upgrade project – considering their concerns and inputs, such as sidewalk location, signage, safety etc.
- (iv) **Privacy** – all respondents were informed that they did not have to answer any question that they were not comfortable with and that the survey or focus groups were not collecting personal details.

a) Survey

Select KIs were carried out including representatives of a women's group. The Governor of Pohnpei was provided with a current overview of the proposed Awak bridge replacement. The survey was translated and presented in Pohnpei dialect where necessary for the ease of the participants attending and responding. Content included:

- **Information provision** – presentation materials (see flyer and basic PowerPoint and questionnaire in Annex A) were used to describe key aspects of the proposed project.
- **Questionnaire** – A number of specific questions with responses formed the basis of the survey. These questions applied an ordinal scale to responses whereby there was a limited number of responses available. Other questions were open to draw out succinct yet valuable nuances pertinent to the social and economic characteristics of Pohnpei.
- **Local ownership:** The consultations encouraged survey respondents and their community with an initial sense of ownership of the proposed Awak bridge replacement – considering their concerns and inputs, including pedestrian sidewalk, signage, safety etc.
- **Privacy** – all respondents were informed that they did not have to answer any question that they were not comfortable with and that the survey or focus groups were not collecting personal details.

b) Sample size

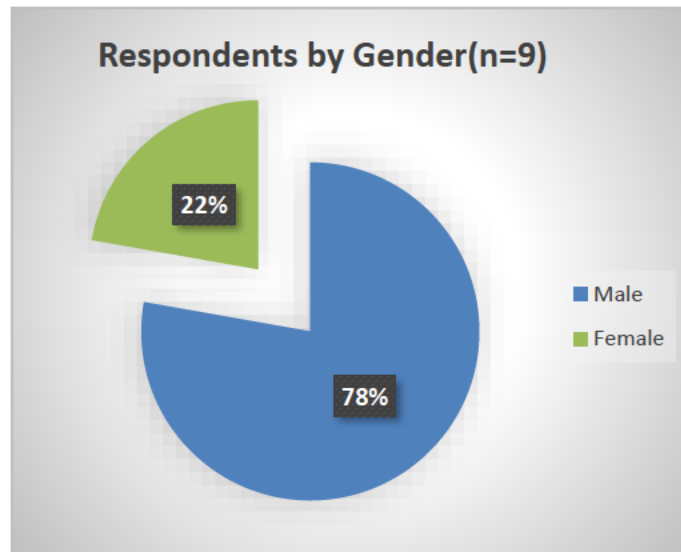
A total of 9 local respondents were surveyed. Participants were included based on both convenience sampling and purposeful sampling. This included those respondents who lived near or along the proposed bridge replacement and who were available at the time of the survey (Figure 1).

Please note: Sadly, during the visit to Pohnpei, the sister of the chief of the U, Awak community passed away. In many places this would have halted the consultations until this was over as a matter of respect. However, the community was already aware of the planned consultation event and, while the majority of the community attended the funeral, the chief suggested the consultation went ahead with two key community

leaders in attendance. These two leaders are also directly affected by the Awak Bridge replacement. A further 7 questionnaires were filled in by other affected persons after the funeral, and these have been added to this discussion. Because of the small number of respondents, this information is regarded as stakeholder engagement information rather than social baseline.

The focus group format was a short presentation followed by a survey filled by the respondents regarding their daily lives and challenges in terms of the current situation of the bridges, project expectations and any potential concerns.

Figure 1: Respondents by Gender



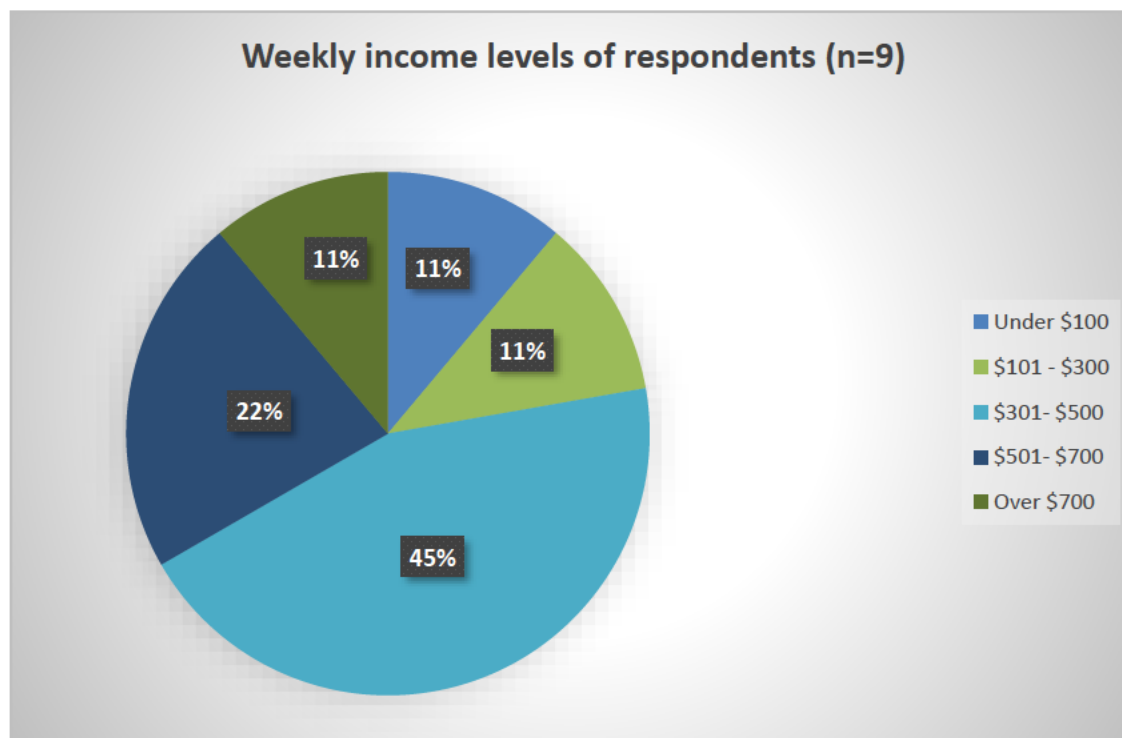
A total of 7 men and 2 women were surveyed in Pohnpei. These respondents were aged between 18 to over 65 years and lived close to and will be affected by the Awak bridge replacement.

Head of households were recorded as 8 males and 1 female among the respondents.

The number of respondent household members varied significantly between 5 to 10 persons.

c) Incomes and Poverty

Respondent weekly income ranged between less than \$100 for one respondent (5%) through to 54% earning over \$700 a week. The highest level of respondents (4 or 45%) earned between \$300 and \$500 a week (Figure 2).

Figure 2: Weekly Income

Respondents worked in different roles. As indicated the public sector employment is the dominant employer in Pohnpei for men and women.

d) Implementation related opportunities

Local procurement opportunities – 67% of respondents indicated that local youth would be interested in laborer roles during implementation.

e) Climatic Events

Most of the respondents (78%) noted that the Awak bridge is in poor condition, can flood and get blocked by debris and trees during severe weather events. Furthermore, dependent on the severity of the event and the damage done, the bridge can be blocked for various periods with minor damage for shorter periods and more extensive damage for longer periods.

Only 33% of respondents indicated that there is a village disaster management plan.

The most common means to be alerted about a pending climatic emergency is through radio, mobile phones, television or internet. While the community is reliant on technology for event warnings, three respondents indicated that they also used traditional methods to alert them to issues.

f) Transport

Some key results pertaining to transport are:

A number of buses use the bridge to transport children to school. Children either travel on buses, in cars or walk to school.

Some respondents (44%) indicated that they help to maintain the bridges at least sometimes, such as filling in potholes. The same respondents indicated they were happy to continue to help maintain the replacement bridge in terms of:

- Clearing gutters and culverts
- Mowing edges
- Keeping rubbish from roadside.

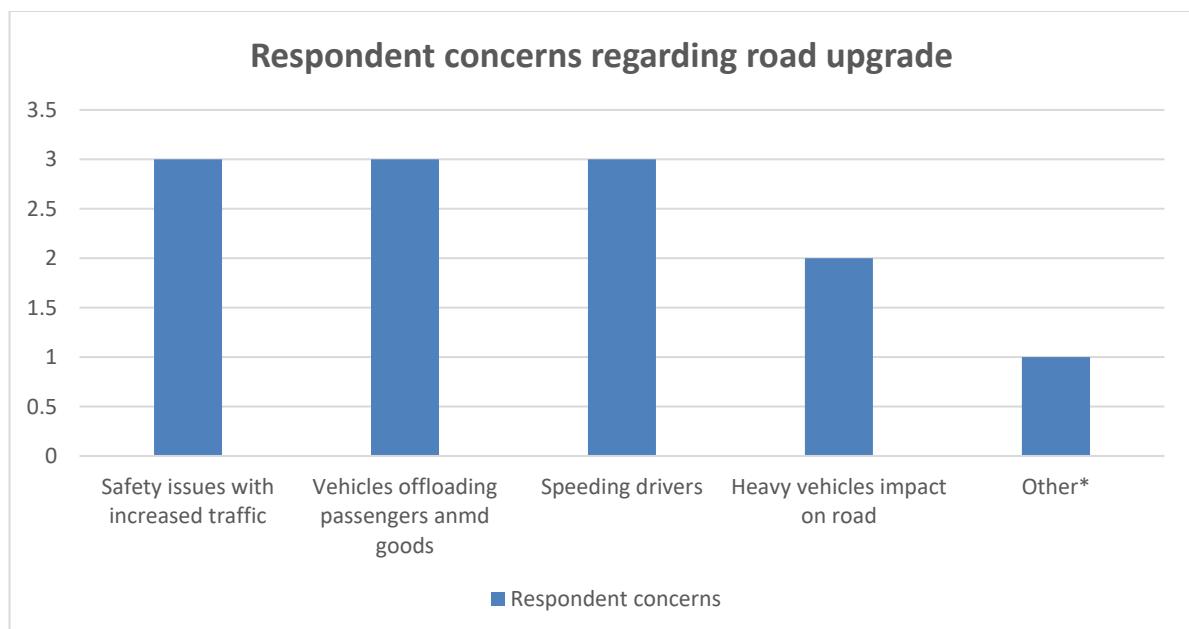
While respondents considered that the bridge replacement will increase traffic (89%) it will also be more beneficial for travelling (89% respondents). However, there were also a number of concerns voiced.

g) Upgrade concerns

The Awak bridge is situated on government land and respondents (44.4%) indicated they were aware of this. However, impacts from the upgrade must not compromise homes through such issues as flooding and accessibility. The international consultant team walked with the local owner to his home to consider possible impacts of the Project.

A number of concerns were also voiced by respondents. Safety particularly of children was noted to be the prime concern once the bridges are updated. The driving of heavy vehicles over the replacement bridge is a concern given it can damage the upgraded pavement. This is highlighted in figure 3.

Figure 3: Respondents concerns regarding the road upgrade



*Other' includes safe passage for disabled to use in wheelchairs.

h) Upgraded related benefits

Respondents indicated a number of perceived benefits from the bridge's replacement, which included the following:

- Increased safety and comfort to drive on especially in terms of access during an emergency, such as climatic event or medical issue
- Decreased travel time
- Less wear and tear on cars; and
- Are able to take children to school on time.

i) Implementation related concerns

During the upgrade process a number of specific concerns were identified:

- Safety concerns with the machinery and trucks coming in which was the top concern among respondents (78%).
- Time constraints in travel (33%)

Appendix C: Determination of “Net Gain” Program for the Endangered Pohnpei Flying Fox and the Vulnerable Pohnpei Kingfisher Bird

Background

Works at the Awak Bridge and roadworks site will include repairs to the existing rock embankment along the road corridor and possible removal or trimming of mangroves.

The endangered Pohnpei Flying Fox and Vulnerable Pohnpei Kingfisher bird, have both been observed in the Awak area and utilize mangroves for feeding/roosting for the bird.

The scale of impact cannot be fully assessed because the original survey was a visual observation of individuals only. A targeted preconstruction survey study of the presence of the Pohnpei Flying Fox and location of individuals / colonies within the project area of influence is therefore recommended prior to works being undertaken. A similar study for the Pohnpei Kingfisher bird will be undertaken to establish their roosting/feeding habitat.

If no flying foxes or the Pohnpei Kingfisher bird are identified, the risk to their potential habitat values is greatly reduced. However, should the Pohnpei Mangrove or Pohnpei Flying Fox be identified, monitoring of populations and their behaviour during the construction phase will be required.

These preconstruction survey studies will assist to confirm whether there are likely to be adverse impacts or confirm appropriate mitigation strategies to meet the ESS6 requirement of “net gain”.

Additional surveys before and during construction will improve our understanding of the Pohnpei Kingfisher bird and Pohnpei Flying Fox's population and behaviour, guiding future conservation efforts to support positive biodiversity outcomes for this endangered species.

The effects of a 24-month construction program on the feeding behaviour of the Flying Fox and the Pohnpei Kingfisher are uncertain and may influence population numbers. Accordingly, it cannot be definitively stated that the impact will be negligible; a minor adverse effect remains possible, consistent with the precautionary principle. To determine the level of works/disturbances on the Flying Fox and Pohnpei Kingfisher bird population, data and analysis on the number and location of sightings of the Flying fox and Kingfisher over a 24-month period will be collected.

ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources require the borrower to consider the development of an offset as part of the mitigation strategy, stakeholders and qualified experts with demonstrated knowledge in offset design and implementation will be involved.

The Borrower will demonstrate the long-term technical and financial feasibility of undertaking the offset. When offsets are proposed for **residual adverse impacts on critical habitat**, the Borrower will engage one or more independent internationally recognized experts to advise as to whether the proposed offset is feasible and whether, in their professional opinion, it can be reasonably expected to result in a sustainable net gain of biodiversity values for which the critical habitat was designated.

The project's mitigation strategy will be designed:

- to **achieve net gains** of those biodiversity values for which the critical habitat was designated; and
- whereby a **robust and appropriately designed, long-term biodiversity monitoring and evaluation program aimed at assessing the status of the critical habitat** is integrated into the Borrower's management program.

Net Gain (Direct and Indirect Offsets) at Awak: A "net gain" for critical habitat, can be achieved by direct or direct offsets. To be conservative, it is assumed "net gain" applies because of potential small-scale impacts at Awak.

"Net gain" can also be achieved when indirect offset gains are utilized.

International Best Practice: In some jurisdictions e.g. the EPBC Act (199) In Australia indirect offsets can also be used to deliver "net gain".

Indirect offsets

- Indirect offsets are also known as other compensatory measures. These measures are activities that do not directly offset the impacts on the protected matter like direct offsets but are designed to deliver benefits for the impacted protected matter through other means. This might include funding for research to support better decision making and management.
- Other compensatory measures often include research and education programs identified as priority actions in recovery plans, threat abatement plans, conservation or listing advice, approved management plans or other relevant documents.
- For an indirect offset to be considered suitable, there must be a clear linkage to the benefit that the new research can provide for the protected matter.

To meet these criteria for "net gain", the outputs will from suitable research or education program provide an overall benefit to the protected matter i.e. each endangered Flying Fox population (Pohnpei, Yap, Pohnpei and Kosrae) by

- Undertaking a program in a scientific manner and within a reasonable time frame
- explaining how the research can and will be used to benefit the protected matter
- be undertaken by a suitably qualified individual or organization
- apply the best and most up-to-date research standards available for the protected matter.

To provide adequate data for conservation efforts aimed at achieving "net gain," studies will focus on key indicators or a subset of these such as status/abundance, feeding, exploitation levels, range connectivity, and resilience to habitat degradation for Flying Fox population and feeding habitat of the Pohnpei Kingfisher bird.

Community awareness programs aimed at the conservation of flying foxes and the Pohnpei Kingfisher can also be undertaken in communities where Flying Fox and Pohnpei Kingfisher populations are found.

These programs will be further developed after discussions with the PIU and scientific experts to confirm an approach delivering "net gain".

Proposed Study

- The steps to establish whether “net gain” is required at Awak.

Step 1. Collect sufficient data to confirm presence and location of feeding habitat and conclude sensitivity to the proposed work program and any new/additional mitigation required.

- a. Methodology - bat and bird specialist (local or international, with support from local NGO or university or EPA staff) uses scientific methodology for locating feeding habitats and identifying flight paths around the site.
- b. Report - survey methodology, results, conclusions on potential impacts.
- c. Publication of the study in an appropriate/reputable scientific / environmental management journal.

Step 2. If 'no/negligible impact' is confirmed, works can go ahead with the existing mitigation measures in place. Para 24 is not relevant to the Project. (no additional cost)

Step 3. If impact assessment is concluded at *minor or moderate adverse* impact, then the project will need to achieve net gain and adopt additional mitigation measures. Offsets are not proposed because net gain can be achieved through other means.

Net gain may include publishing the scientific data collected in Step 1 to build the body of scientific knowledge on the species, longitudinal studies (6 - 12-month period) and publication to increase the body of knowledge, support for NGO or EPA advocacy, community awareness raising.

Survey Example - Fruit Bat Monitoring

- An example of a survey program to identify and examine trends in the abundance of Mariana fruit bats (Guam and the Northern Mariana Islands) fruit bats is shown below.

Fruit Bat Monitoring

Overview

Objectives

- Identify and examine trends in the abundance of fruit bats

Personnel Requirements and Training

Observers conducting surveys must have the necessary skills to identify the endangered fruit bats and conduct counts at colony sites.

- The field crew of two people must have a basic knowledge of the natural history and identification of fruit bats. The team leader must be familiar with and can identify fruit bats by sight, has prior experience carrying out all three survey techniques, and has extensive knowledge of suitable fruit bat roosting and foraging habitat. The team leader must be knowledgeable of data collection methods, data management, and field reporting.
- Sufficient prior experience is defined as having conducted a minimum of 4 bat surveys of each survey technique (landscape counts for solitary bats, direct colony counts and dispersal colony counts) under the direct supervision of an experienced observer. At each of these counts, bats must have been observed.
- Training will consist of conducting 4 counts of each survey technique under the direct supervision of an experienced observer.

Methods

Frequency and timing

- To determine presence or absence of solitary fruit bats, at least five pre-dawn landscape counts are conducted within a one month period.
- Colony counts are conducted monthly at a minimum.

Observers per site

The physical characteristics of each study site (accessibility, size, and location of area) and the number of bats occupying the site determines the number of observers required to conduct a bat survey. The following guidelines are for the minimum number of observers required.

- Surveys are conducted as early as possible in the morning; hikers should start for the observation point when there is sufficient light to see. Cloudy days are also used for colony counts.

- Landscape counts for solitary bats are conducted by one or more observers. The size of the area being surveyed will dictate the number of observers required to adequately monitor.

Field Methods

Three survey techniques are utilized to assess fruit bat activity and abundance: solitary counts, colony exit counts, and colony direct counts (National Park 2009, Utzurrum *et al.* 2003). Solitary fruit bat counts are conducted to determine the presence or absence of fruit bats at a particular location (e.g. the proposed project site), as well as to evaluate flight paths, habitat use, and possibly reveal the location of a colony.

Equipment

- Binoculars
- Spotting scope and tripod
- Fruit bat data sheet
- Pencil
- Clipboard
- Cell phone
- Camera

Weather

Upon arriving at a site and before beginning the survey, observers will estimate and record percent cloud cover, precipitation, and wind speed on the Fruit Bat Count Data Form (Appendix N).

- Cloud cover is the estimated percentage of sky obstructed by clouds and recorded in 25% intervals.
- Precipitation will be recorded on a numeric scale (0 – 4) increasing with level/amount of precipitation (Table 1).
- Wind speed is estimated and recorded using the Beaufort Scale (Table 2).
- Visibility is estimated as the distance (< 50 m, <100 m < 500m, ≥ 500 m) that an object can be viewed unimpeded by weather conditions (i.e. fog).

Table 1. Codes and descriptions of precipitation.

Code	Description
0	No precipitation
1	Mist or fog
2	Light drizzle
3	Light rain
4	Heavy rain

Table 2. Codes and descriptions for wind (Beaufort scale).

Code	Speed (kph)	Description
0	< 2	Calm: smoke rises vertically
1	2 - 5	Light air: smoke drifts
2	6 – 11	Slight breeze: wind felt on face, leaves rustle
3	12 – 20	Gentle breeze: leaves and small twigs in constant motion
4	21 – 32	Moderate breeze: small branches sway, loose paper rises
5	33 – 40	Fresh breeze: small trees sway, thin branches sway
6	41 - 50	Strong breeze: large branches in motion

Data sheets

- Site or colony name
- Date (mm/dd/yyyy): Write in the month (2 digits), day (2 digits) and year (4 digits). Example: 07/21/2008.
- Tree species used for roosting: Record the tree species that is being used as a roost by the fruit bat colony, if trees can be identified (assumes training in species identification is acquired by observers prior to collection of this information)
- Lunar phase: Write in the current moon phase (New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, and Waning Crescent). If the moon is not visible, check the US Navy website (http://aa.usno.navy.mil/data/docs/RS_OneDay.php) before going into the field. This website also provides information on sun and moon rise and set times.

Landscape counts for solitary bats

- The area should be observed from one or more vantage points with a clear and unobstructed view. Observers should be close enough to clearly see birds and animals without binoculars.
- Surveys are conducted over two-hour periods pre-dawn and dusk. Observers should be in place pre-dawn to take advantage of bat movements in low light. Surveys begin when there is sufficient pre-dawn light to see and continue for approximately 2 hours after full light. Dusk surveys should be conducted from the same location, starting 2 hours before sunset and continue until it is too dark to accurately see. The area should be scanned for movement of flying animals without binoculars
- Where possible, stations should be situated so the observer is looking up (e.g. toward a hill or ridgeline) and the survey area comprises a large amount of sky to facilitate silhouetting and better observation of fruit bats.
- When an animal in flight is seen, use binoculars to identify if bat or bird. If a bat, follow it until it flies from sight or roosts in the forest.
- Note the location of bats observed on a sketch map of the area viewed. Each bat should be noted on the map showing where first seen, flight direction, and where it was lost from sight. Mark the

location for each time a bat roosts, flies into or out of the area. If several bats are using the area, it may be difficult to determine the number of bats present. Each bat must be judged whether a new individual or if it has been seen earlier. If a bat flies into a tree to roost and a bat leaves from the same location assume it is the same bat. If a bat flies out from a very different part of a large tree, it may be a different individual. When it is not obvious whether the individuals are different, assume it is the same animal to avoid multiple counts of the same individual.

Colony direct count (All sites)

- Direct counts of roosting bats are made from a station that affords a clear view of the roosting bats. The observation point should be enough distance that the presence of people does not disturb the bats.
- Two observers are required for each count, viewing the same area and be positioned next to each other. Observers count simultaneously but independently of each other.
- As you approach a roost site, be aware of the potential disturbance that may be created by loud noises (e.g., snapping branches or rolling rocks) and sudden movements. Remain relatively quiet and well hidden so as not to startle the bat colony into flight or otherwise agitate them.
- Once observers arrive at a roosting colony, locate the station or stations using the UTM coordinates that should have been previously downloaded onto the GPS unit.
- Once settled in at a station, the observers spend about five minutes before the count looking to the left and right of the perceived colony to assess if there is bat movement in other trees (e.g., wing-flapping behavior). Bats in other trees may not be obvious at first. Identify the spatial extent of the colony with other observers prior to counting, and perform counts within these established boundaries.
- Each observer should have a Fruit Bat Colony Count Data Form (Appendix S7.b), and should fill in survey and weather information at the top of the form in the appropriate fields
- The observers should agree in advance to use the same counting method (i.e. from left to right). At least two counts should be conducted at each station by each observer (e.g., left to right, right to left). Observers will not share with the results with each other until all counts have been conducted and recorded. Repeat counts at additional locations if possible. If possible, more than one count station should be used to see the area from different vantage points.
- Results are recorded on the Fruit Bat Colony Count Data Form. Any observations about the count should be written in the “Notes” section corresponding to the station number.
- A spotting scope is used to examine the forest as it gives better accuracy than binoculars. Bats will move back into dense leaves

as heat increases. Where the observation site is at a distance from the colony, heat haze can make using a scope or binoculars impossible, early morning count times are best.

Colony dispersal count

Dispersal counts are used when bats can be silhouetted against the sky or the observation point is very close to the colony.

- Dispersal (exit or emergence) counts should be conducted the same day as a direct count. The site for dispersal counts may be the same as for direct counts or different. Counts generally starts late in the afternoon and continues for about two hours until nightfall, or until observers can no longer see individual bats clearly.
- Observers station themselves at an observation point in clear view of the colony or flight path. A landscape feature should be used as a marker that delineates a bat leaving the area; bats are counted as they pass the marker. Animals that circle back should be noted so they are not counted twice.
- Dispersal counts depend on having a good view of the route taken by bats leaving the roost area as bats may leave in one direction or in several directions. A site evaluation is conducted prior to surveys to determine the possible flight paths used and number of observers required for the survey. Bats may not leave until dusk or after dark where there is active hunting and thermal imaging should be used to supplement dispersal count data.

Data management and Analysis

- All field data will be entered and maintained in a GIS database.
- The Pati Point colony graph will be updated after every field survey. Field data and the colony graph will be available to USFWS and GDAWR after each survey.
- An annual report summarizing the findings will be prepared.

Data sheets

- Site or colony name
- Date (mm/dd/yyyy): Write in the month (2 digits), day (2 digits) and year (4 digits). Example: 07/21/2008.
- Tree species used for roosting: Record the tree species that is being used as a roost by the fruit bat colony, if trees can be identified (assumes training in species identification is acquired by observers prior to collection of this information)
- Lunar phase: Write in the current moon phase (New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, and Waning Crescent). If the moon is not visible, check the US Navy website (http://aa.usno.navy.mil/data/docs/RS_OneDay.php) before going

into the field. This website also provides information on sun and moon rise and set times.

Fruit Bat Count Data Sheet

Page# __ of __

Colony or landscape site _____

Date _____ Observer(s) _____

Tree Species Used for Roosting _____

Lunar Phase _____ Cloud Cover (%) ____ Wind Speed ____ Precipitation Code _____

Temperature (□ F) _____ Start Time _____ End Time _____ Field QA ☐

(initials)

Station #	Roost Count #1			Roost Count #2		
	Observer #			Observer #		
	1	2	3	1	2	3
1						
2						
3						
4						
5						
6						

Station #	Notes
1	
2	
3	
4	
5	
6	

¹ The station number (1-6) refers to a point near the colony where observers perform counts. Up to three observers may perform counts at a roost station, and each person records their count number in the spaces provided. Up to six roost counts may be performed at any one station.

Dispersal Count

<i>Colony</i> _____	<i>Date</i> _____	<i>Observer(s)</i> _____
<i>Temperature (° F)</i> _	<i>Start Time</i> _____	<i>End</i>

Entire Colony Count ¹	Observer #1	Observer #2	Observer #3	Total
Partial Colony Count ²				

Notes

¹ The entire colony dispersing from a roost is counted by each observer.
Record separate counts but do not average.

² A portion of the colony is counted by each observer. Two observers divide the sky and ground into equal sections. At the end of the count, the numbers derived by each

Appendix D: Pohnpei Awak Bridge Replacement Land Access Due Diligence Report

Background

The Prioritized Road Investment and Management Enhancements (PRIME) Project was approved in [month/year]. The Project will provide funds for technical assistance and institutional strengthening to improve the management of the road network in relation to potential climate change impacts for the FSM. In addition, the Project will fund the feasibility, design and construction of physical works on priority road assets to improve resilience to climate-related hazards or events. The Project is financed by the World Bank and the implementing agency is the FSM Department of Transportation, Communication & Infrastructure (DTCI).

The PRIME Project environment and social (E&S) risks are managed in accordance with the World Bank Environment and Social Framework (ESF) and relevant FSM and Pohnpei State laws and regulations. Instruments prepared for the project to guide E&S risk management include the Environment and Social Management Framework (ESMF), Resettlement Framework (RF), Labor Management Procedure (LMP) and the Stakeholder Engagement Plan (SE).

This Land Access Due Diligence Report (LADDR) presents the finding of the due diligence with respect to land access impacts of the Awak Bridge improvement works in Pohnpei State in accordance with the requirements of the Project ESMF and RF to demonstrate that involuntary resettlement impact will be avoided.

Purpose of the LADDR

ESF Environment and Social Standard 5 on Land Acquisition, Restrictions on Land Use and Involuntary Resettlement provides guidance on assessment of impact and mitigating impacts on affected persons when land is acquired for project purposes. In the event of involuntary land acquisition and restricted access caused by projects, a Resettlement Plan is to be prepared to mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons to at least restore their livelihoods and living standards to pre-displacement levels.

For PRIME, where screening and due diligence concludes that works will not involve land acquisition or produce involuntary resettlement impacts, a LADDR is to be prepared upon completion of the engineering design. The PRIME RF states that the LADDR will include the following: (i) a description of the works site; (ii) a description of proposed works; (iii) findings of the field visit and observations on the works site; (iv) process and outcome of consultations with stakeholders; (v) plans for monitoring and ongoing consultations with local community; and (vi) confirmation that there are no involuntary resettlement impacts and that neither a Voluntary Land Donation Report, or Resettlement Plan is required. The LADDR is to be included with the feasibility report to be submitted to the WB.

An Environmental and Social Management Plan (ESMP) has been prepared for the works in accordance with the ESMF. Conclusions and any recommendations from the LADDR will be reflected in the ESMP. The ESMP will be included in the Request for Proposals for the works tenders. A Contractors ESMP (CESMP) will

need to be prepared by the Contractor based on the requirements of the ESMP and planned works in relation to actual site conditions.

Site Description

The works comprise improving the 1,150 feet (350 m) of road in Pohnpei that crosses over the main bridge as one enters Awak on the Northern Coastline. This area is predominantly used by residential homes with a small roadside store, a school and a large community church. There are very few commercial buildings along this road.

The road is largely in good condition with robust drainage. The current vehicle speeds are maximum of 15 miles per hour (Figure 1).

Figure 1: Location Map



Figure 1: Road and bridges location map

The roadway has a bridge structure that requires replacement. Figure 2 shows the existing road and bridge -

Figure 2: Existing road and bridge

 Underneath Awak Bridge	 Seaward side of approach road
 Landward side of approach road	 Landward side of approach road



Landward side of approach road

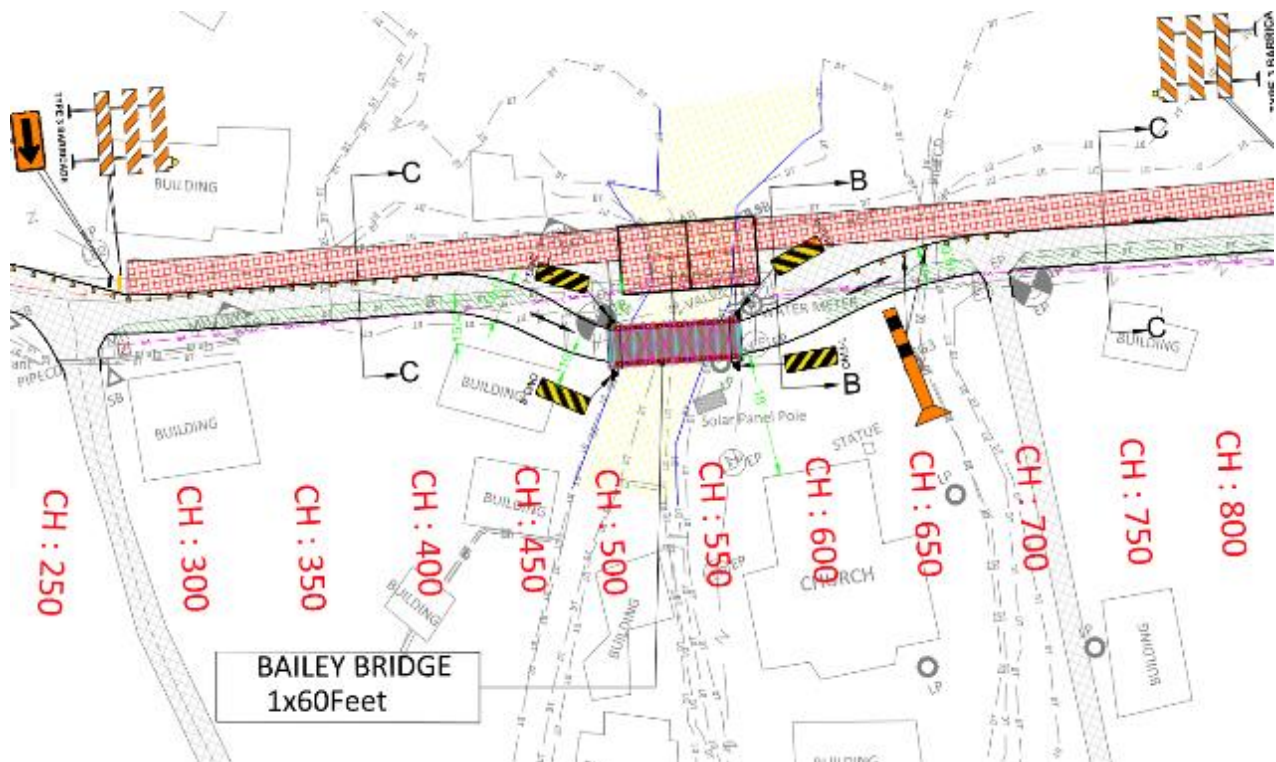


Approach road



Approach road

Figure 4: Diversion Plan

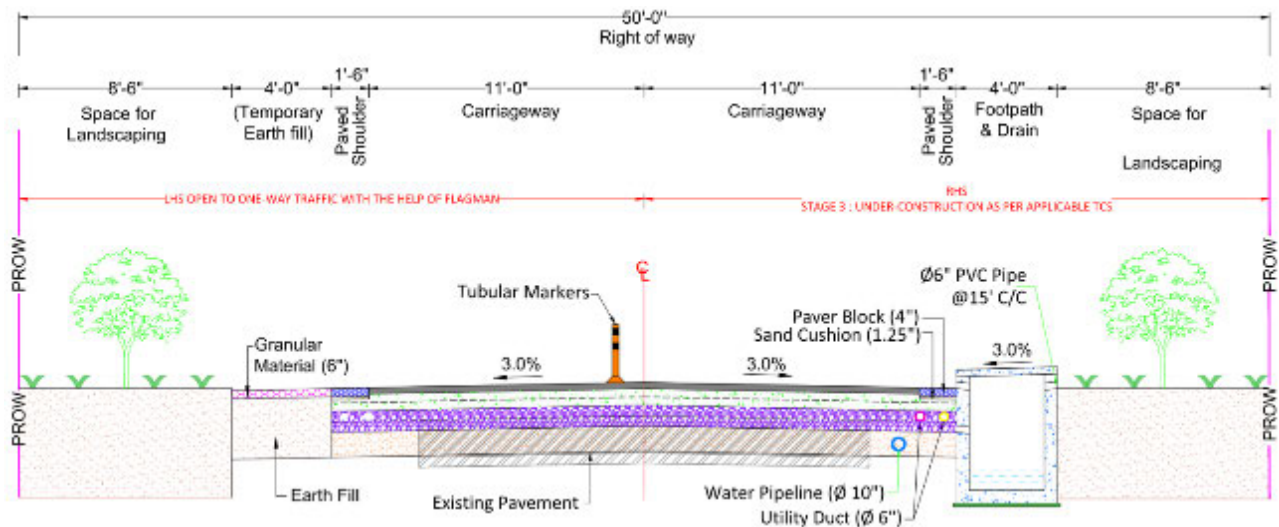


The overall length of road works is 1,150 feet (350 metres) which will follow the existing alignment and be an upgrade of the existing roadway and drainage. The existing bridge is to be demolished and rebuilt. The main impact is during construction when the contractor will be required to divert the traffic over the Bailey bridge. A small area of overspill of earthworks is identified on the MLIM to the Northwest of the new bridge construction which will need to be dealt with symptomatically by the contractor when implementing the project.

To erect the Bailey bridge, the contractor requires land to the south of the existing bridge that falls on private land. At the consultation, the owner of this land took the consultant to the site and indicated that the two trees needing to be removed were ornamental in nature. Further, the landowner was very supportive of the project and where the Bailey Bridge requires use of land on either side of the 50 foot ROW, the owner, as well as the church leadership, will be happy to agree this, and the exact position of this, directly with the contractor as part of the contractors obligations under temporary works. Please see minutes of the consultation in the appendix to this report and the ESMP.

Within the ROW, the designs have incorporated pedestrian walkways, paved and gravel shoulders as well as upgraded, robust drainage canals where required. The design provides pedestrian access along the whole road corridor and to also deal with sea water level rise. It is not possible to raise the existing road by any substantial amount as this would in turn cut off the adjacent road users and impact both their access and the drainage of their properties. Thus, minor road and bridge level increases have been designed into the final product and the toe line of this raised level checked against the existing property assets (Figure 4).

Figure 4: Typical cross section of road



The actual footprint of the road being constructed remains at a maximum width of 33 feet (10 m). There is no requirement for easements across properties to discharge water as the existing two culverts (ch0+375 & ch0+650) are remaining in their current position but being upgraded to new structures without any change to the capacity or outflows. The access points for all adjacent land users will be maintained or improved with any temporary construction impacts dealt with through the CESMP.

Land Use Due Diligence Findings

Visual inspection of the road area and the bridge against the engineering designs as well as consultations were conducted by the E&S consultant in April 2024 and November 2024. The assessment and findings are presented below.

Design features and land use with respect to existing ROW

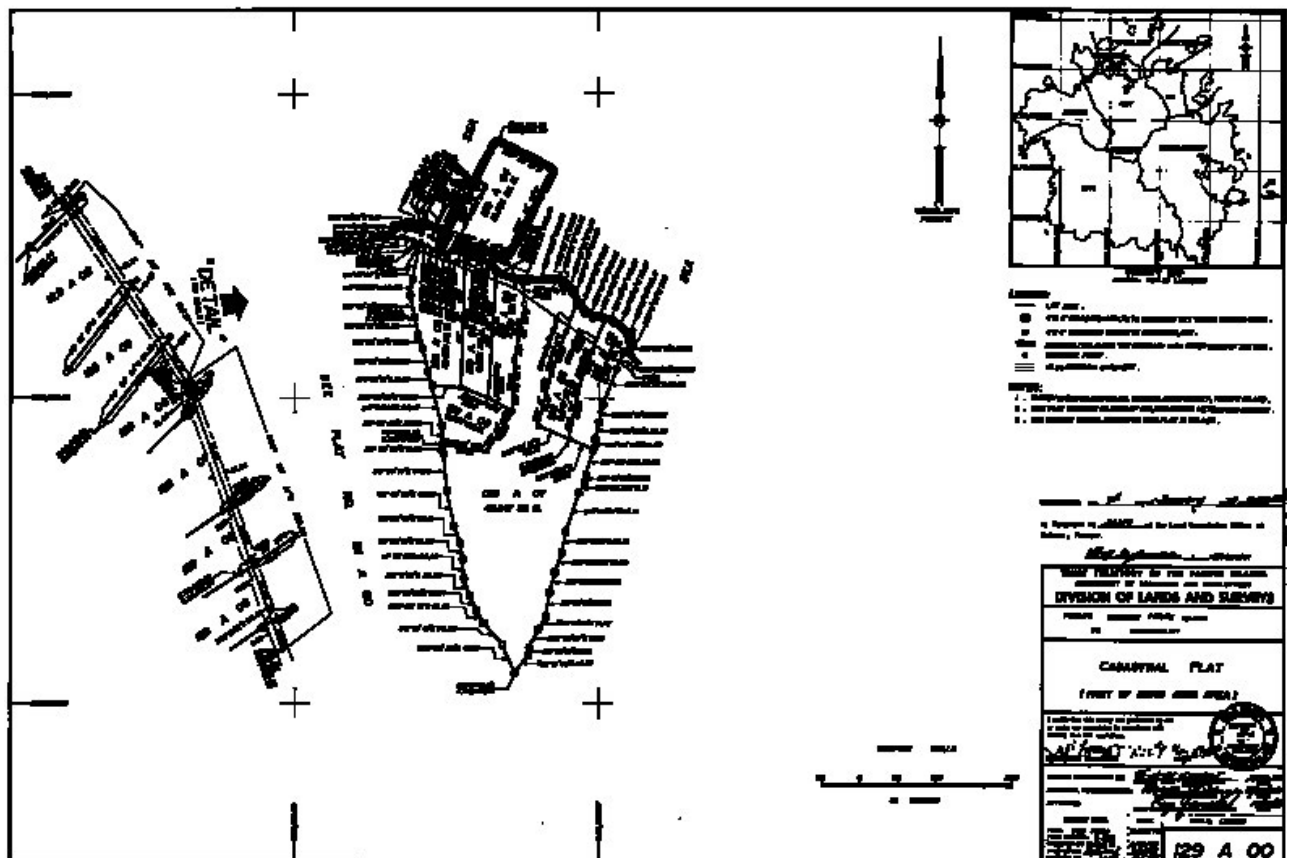
The field data was collected over a 10-day period. The climatic conditions were the same for each day. All data was acquired using GNSS equipment. Soffit levels were measured in at several positions and extensive cutting of vegetation was required. Culverts and openings were measured in, and images taken where required. Data collected was referenced to the concreted control points fixed at the start of the topographic survey.

All data was processed using a combination of Topcon Tools software for the GNSS data and Model Maker software for drawing and Digital Terrain Modelling. The data was checked every set-up against fixed control at the start and end of every day as well as at the start and end of every set-up done. This gave a direct check on the height quality and position accuracy of all data. The design engineer provided a conceptual design for the full roadway that followed the existing centreline of the road. The concept design relied heavily on the existing centre line of the road which is in the middle of the registered ROW (width of 50-foot ROW). With the registered Right of Way servitude being 50 feet wide centred around the existing road carriageway, the overall design does not impact on properties.

The registered ROW drawings (refer cadastral plat 129-A-00 below) indicate a ROW easement that traverses the centre of the existing roadway and is 50 foot wide. These

were verified on site by means of locating the published control points used for the land registration process of the original ROW done in 1979 on the USGS 1970 Triangulated system and the lands registry correction to UTM 56, using the registered point BM1008 as reference. Point SS1 was found and checked and agreed well with BM1008 in both distance and direction. The coordinates from Plat 129-A-00 were located. The full topographic survey was done on this same system of control. A Merged Land Impact Model is presented in Annex A. The current ROW or roadway is not being widened as part of the designs or otherwise vary significantly from the existing road footprint except for the provision of a service road to enhance access for a residential property (Figure 5).

Figure 5: Plat 129-A-00



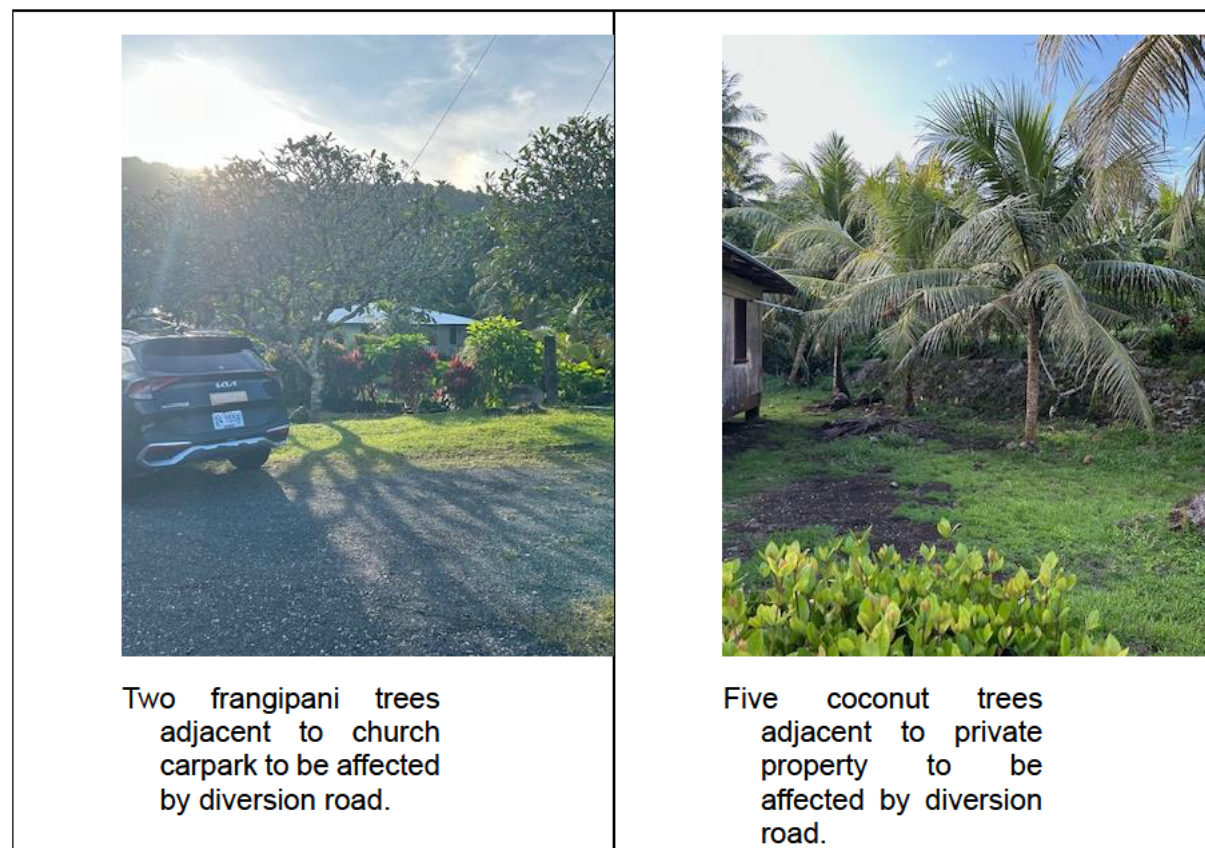
Assessment of impacts caused by design features and proposed works

There will be no impacts on property caused by permanent works. The engineers design drawings earthworks toe line, that demarcates the extremities of the road construction earthworks, was overlaid onto the topographic survey. These were designed on the topographic survey based on the established control points. Using the designed extremity of works, together with the reconstructed ROW drawing, it was ascertained that there is no permanent road construction impacting on private land assets or any assets.

However, the temporary works for the diversion road and bailey bridge will cause the loss of five coconut trees and two mature frangipani trees (Figure 6). It was confirmed during consultations that the trees were not used for income generating purposes. The trees will require compensation at replacement cost. (Please refer to images below.) This requirement for compensation by the contractor will be included in the ESMP. Compensation is estimated at \$700. The PIU will need to obtain current replacement

cost values from the Department of Resources and Development or relevant government agency prior to the preparation of the CESMP.

Figure 6: Flora impacted by the Bailey Bridge



The impacts of raising the height on the approach road with respect to land users' access to the road was assessed. The Church property is around 1'6" lower than the proposed finished road level (FRL). The increased FRL is mitigated by enabling church property access with some grading work from road to the church car park. There is increased FRL of around 4'6" at a private property before Awak Bridge. A short service slip road is included in the design (also within the ROW) on the landward side of the approach road as a solution to maintain access to the residential property.

There is a site of cultural significance to the local community in the adjacent to the proposed works that must be avoided and protected. According to local folklore, there is a burial site of a dwarf people on the seaward side of the works in the mangrove areas. A community leader identified the sites on a map (see Appendix C). The PIU and contractor will need to work with the local community leaders to demark the site that is adjacent to the works and make arrangements for protection of the site and for the protection measures to be monitored by the local community. This will be included in the ESMP and required to be covered in the CESMP.

Visual Assessment and Consultations

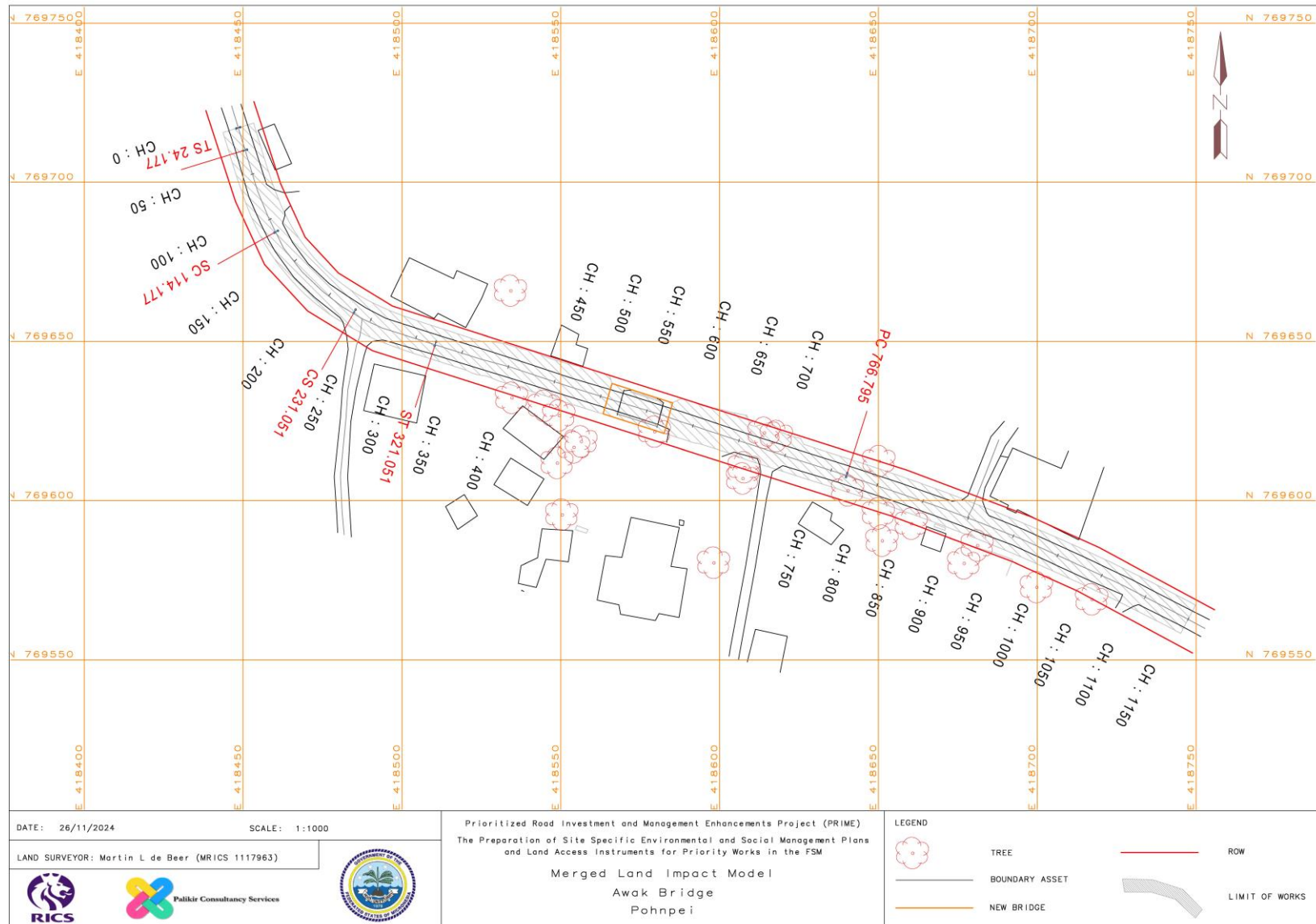
Visual inspection of the road area and the bridge were conducted by the E&S consultants in April 2024 and November 2024. Consultations with local community were undertaken by the engineering consultant in July 2022 as part of preparation of the preliminary design and well as by the E&S consultants conducting due diligence to prepare the LADDR on 4 November 2024. In addition to these, a robust series of consultations were undertaken as part of the preparation of the ESMP and can be found in the Appendices. Of the 15 Attendees at the general consultation held at the church/site, 12 of these were from the community, the only two members of the community who will be required to assist with the temporary placement of the Bailey Bridge during construction were both accompanied to site for further discussion. The community was provided information about the design and anticipated impacts during construction and were able to ask questions and provide feedback to improve the design. The predominant outcome from all consultations, both formal and informal, was strong community support of the project implementation. As for easements and ROW, these are effectively covered as annexed to the LADDR, with all persons consulted agreeing with this approach. Landowners were made aware all that provided feedback agreed with the current ROW and this was supported by the key government entities and representatives during the engagements.

Refer to Annex B.

Conclusions and Actions Required in the ESMP

1. The registered ROW has been confirmed for the works area. There will be no realignment nor additional land requirements. The due diligence verified that there will be no loss of land or income generating assets for the permanent works. However, there will be a loss of five coconut trees and two frangipani trees on the alignment identified for the diversion road which will require compensation by the contractor. This requirement is reflected in the ESMP.
2. Neither a Voluntary Land Donation Report, nor Resettlement Action Plan required
3. The ESMP needs to stipulate that the contractor is required to compensate for any damages caused by the works, including the five coconut trees and two frangipani trees at replacement cost currently estimated at \$700. The PIU will be responsible for obtaining replacement cost valuations from the Department of Resources and Development or other relevant agency.
4. The PIU and contractor will need to work with the local community leaders to demarcate the site of cultural significance that is adjacent to the works and make arrangements for protection of the site and for the protection measures to be monitored by the local community.

Annex A: Merged Land Impact Model



Annex B: Consultations

Public Consultations during preparation engineering design

1.1 ENGAGEMENT WITH STAKEHOLDERS AND PROJECT AFFECTED PEOPLE (PAPS)

DoTC&I and Consultant since inception of the project were very particular to ensure engagement of Stakeholders and population who would be end users of the improvement in each of the project islands. Every project site Joint field visits of DoTC&I officials with Consultant team was initiated upon post meeting and detailed discussion with stakeholders and residents around the project area. The stakeholders group involved various representatives of government agencies, public representatives and settlers in the vicinity of the project.

1.1.1 Inception Stage of the Project

A joint Site visit was carried out by DoTC&I officials and Consultant key professionals at Awak Bridge project site in Pohnpei on 8th July 2022, followed by meeting with various stakeholders responsible for asset management of the structure and also representatives of Utility agency. It involved representatives of respective agencies who briefed about the infrastructure, and also responded with details sought by the consultant representatives.



Figure 1.6: Stakeholder Meeting with Joint Inspection along with PIU Officials and Consultant Representatives

Details discussed with various stakeholders is summarized in below Table,

Stakeholder Agency	Discussion and Details
Department of Transportation, Communications & Infrastructure (DOTC&I) & Pohnpei Transportation Authority (PTA) &	• Extension of AWAK Bridge was done by PTA in early 1980"s. • PTA & T&I is responsible for maintaining Roads & Bridges. • Funds for Maintenance works are made available based on requirement upon request with budget either from FSM National Govt. or Pohnpei State Govt.

Stakeholder Agency	Discussion and Details	
<i>Pohnpei State Government Office of Transportation and Infrastructure (T&I)</i>	• The available Easement for circumferential Road in Pohnpei and Bridge location is around 50 feet with 25 feet on either side from the center line of the bridge. • Agency representatives confirmed non availability of as built drawings for the Bridge. • It was notified that in the approaches to Bridges and circumferential road the pavement thickness in general is , ➤ 4 inches of Asphalt Concrete. ➤ 12 inches Based Course ➤ 12 inches Sub-Base Course ➤ 6 to 12 Inches of Subgrade ➤ Followed by Natural Earth Fill	
<i>Pohnpei Utilities Corporation (PUC)</i> <i>&</i> <i>FSM telecommunication corporation (FSM-TC)</i>		
	<i>Figure 1.7: Utilities along Awak Bridge.</i>	<i>Figure 1.8: Electric Pole and Water Line on Approaches.</i>
	• Two pipes around 4 inches diameter along the Bridge and along approach to bridge on RHS (approaching from Kolonia) are being utilized for Telephone Cables, Internet Fiber optics and TC Cable Line by FSM-TC • Water pipe line laid in 1990s is of around 10 inches diameter steel pipe running along Bridge and also along approaches on RHS (approaching from Kolonia). • Both Authorities mentioned that utilities along approaches are around 3 feet away from main carriageway and also around 3 feet deep below the ground level. • Concerned Authorities assured that they will work out a Budget for diversion during construction of the bridge, the pipe shall be temporarily relocated to the other site near the bridge and after the construction of the bridge, it shall be restored based on provisions provided in new bridge.	

Stakeholder Agency	Discussion and Details
	- It was mentioned that the relocation for the Water pipe will take at least four (4) weeks as such early intimation with budgetary approval would help concerned authority to have it timely relocated to facilitate construction of Bridge structure. - Maintenance of utilities along the Bridge structure or approaches is limited to repairs required which is not very frequent.

The outcome of the detailed discussed paved way to achieve the goal of Participatory Design approach as Final Inception Report for the project and Concept Design Option Analysis report for the project island was achieved based on outcome of these discussions.

1.1.2 Concept Design and Option Analysis Stage

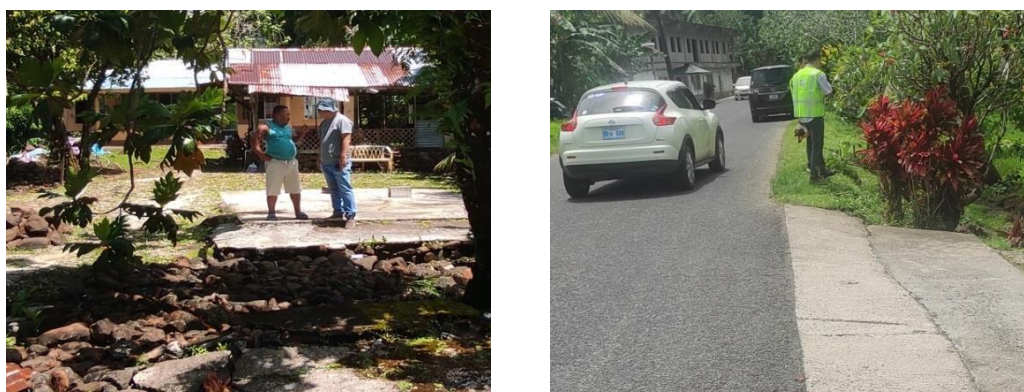


Figure 1.9: Engagement with PAPs to discuss Concept Design and Option Report.

The Office of Transportation and Infrastructure, Pohnpei State recommended Option to be taken up for preliminary design out of various options presented in Concept Design Option Report. As such there was no specific meetings with the Stakeholders again to discuss various options formulated and as per the recommendation letter from Honorable Secretary, Department of Transportation, Communications and Infrastructure (DoTC&I) vide letter dated 8th May 2023, finalized the preliminary design report.

Consultant team visited FSM between 29th March 2023 to 13th May 2023 and during field visit spoke to some PAPs along the bridge, which included owner of residential building along upstream end of Awak Bridge and few residents near Awak Elementary School.

During such discussion following was highlighted,

- 1) Resident having house at the upstream of the bridge indicated past flooding due to heavy rain at high tide time and insufficient waterway which lead to flooding of their property. Few residents in close proximity to the bridge had to be evacuated from their house till flood water receded.
 - It was appraised that the waterway for existing Bridge is improved as per Hydrological requirement and as per future increase due to climate change.

- 2) Residents near Awak Elementary school raised concerned with regards accessibility to existing Church besides Awak Bridge and residential property for increased FRL proposed for AWAK Bridge.

- ☐ It was appraised that access to these properties were ensured in the improvement proposal with Driveway design to ensure to maintain access post implementation of the improvement proposal.

- 3) Residents wanted to know accessibility during construction as the project road connecting bridge is the only connectivity for residents to Kolonia and other region.

- ☐ It was appraised that traffic diversion has been planned to ensure mobility of goods and people during construction period. Residents may face slight delay when passing through construction zone; however such inconvenience will be for brief period during construction.

Preliminary Design Report is now prepared in accordance to discussion and outcome with concerned PAPs & Stakeholders along the project.

Public Consultations during preparation of land access due diligence

Stakeholder Consultations

Stakeholder Consultation took place on November 14, 2024, in the Community Centre, Awak from 3:00 pm to 5:00 pm. Flyers were posted.



The Awak Bridge Pohnpei Project

Announcement of a Stakeholder Consultation - **UPDATE**

November 14, 2024, U Church Community Center in Awak, 3:00 pm to 5:00 pm.

DUE TO TROPICAL STORM MANI-YI IN GUAM ON NOVEMBER 13, 2024, AND ALL UNITED FLIGHTS BEING DELAYED, ALONG WITH THE PRIME ESMP SOCIAL AND SAFEGUARD EXPERT FACILITATORS, THE PROPOSED STAKEHOLDER MEETING ORIGINALLY SCHEDULED FOR 9AM TO 12PM ON THURSDAY, NOVEMBER 14, IS NOW MOVED TO 3PM TO 5PM ON THE SAME DAY. WE THANK YOU FOR YOUR UNDERSTANDING.

You are invited to attend the Public Meeting
Date: November 14, 2024, 3:00 Pm to 5:00 pm.
Venue: Community Center in Awak, behind the Catholic Church
Any questions and comments are welcome and can be addressed to:
U Mayor's Office, Phone: 320 – 8742/3991 Email: umunicipalgovernment@gmail.com



Project en Piris me Pato Awak, Pohnpei

Mehn kair oahng Wein U oh Pohnpei Unsek

November 14, 2024, Tehnpas Sarawi en Awak, Kiloak 9:30 Iel 12:30 pm

Oahpis en World Bank patohwan sawaski tehte de money oahng Prioritized Road Investment and Management Enhancement de PRIME project nan Pohnpei pwehn kamwahualhla Piris me pato Awak ni tehnpas sarawi. Project we pahn pil pidada iren kahpwal akan me irail akahn mekin weidedo pohn piris wet pveren patohdo de ketdo nan wein Nett de pil kolonia oh pil pahn kosola mwomwen kamwahulahn piris wet.

Semen kei pahn patohdohsang likin Pohnpei ni November 8-15, 2024 oh pil pahn patehng irail sohn doahdoahk kei me pato Pohnpei oh ehu ieng tohn kouson de wein U ahpy mehlel irail akan me karanih piris pwukat Awak oh Saladak. Sahi wet pahn pwarek piris pwukat oh irail akan me karanih wasa pwukat pveren kaunopada keimwseklahr koasaongdi oh wiepen piris pwukat.



Sang ni tuhpene wet, se men peki sapwelmamwai iren kaweid oh kapwunod kan de pil kaweid kan me pahn kak sowese kamwahualhla piris riau pwukat pwehn kak en werei oh mwahulieng sapwetail wet.

Se lukei komwi oahng tuhpene wet.

Rahn: November 14, 2024, sang kiloak 9 menseng lel kiloak 12 elep ni souwas.

Wasa: Tehnpas Sarawih en Awak-catholic church- imwen keiru de sinakoke

Iren kalelapak de keinemwe komw kak eker:

Delepwohn, nempe 320-8742/3991 de pil email: umunicipalgovernment@gmail.com

Figure 1: Awak Bridge Community Consultation Flyer

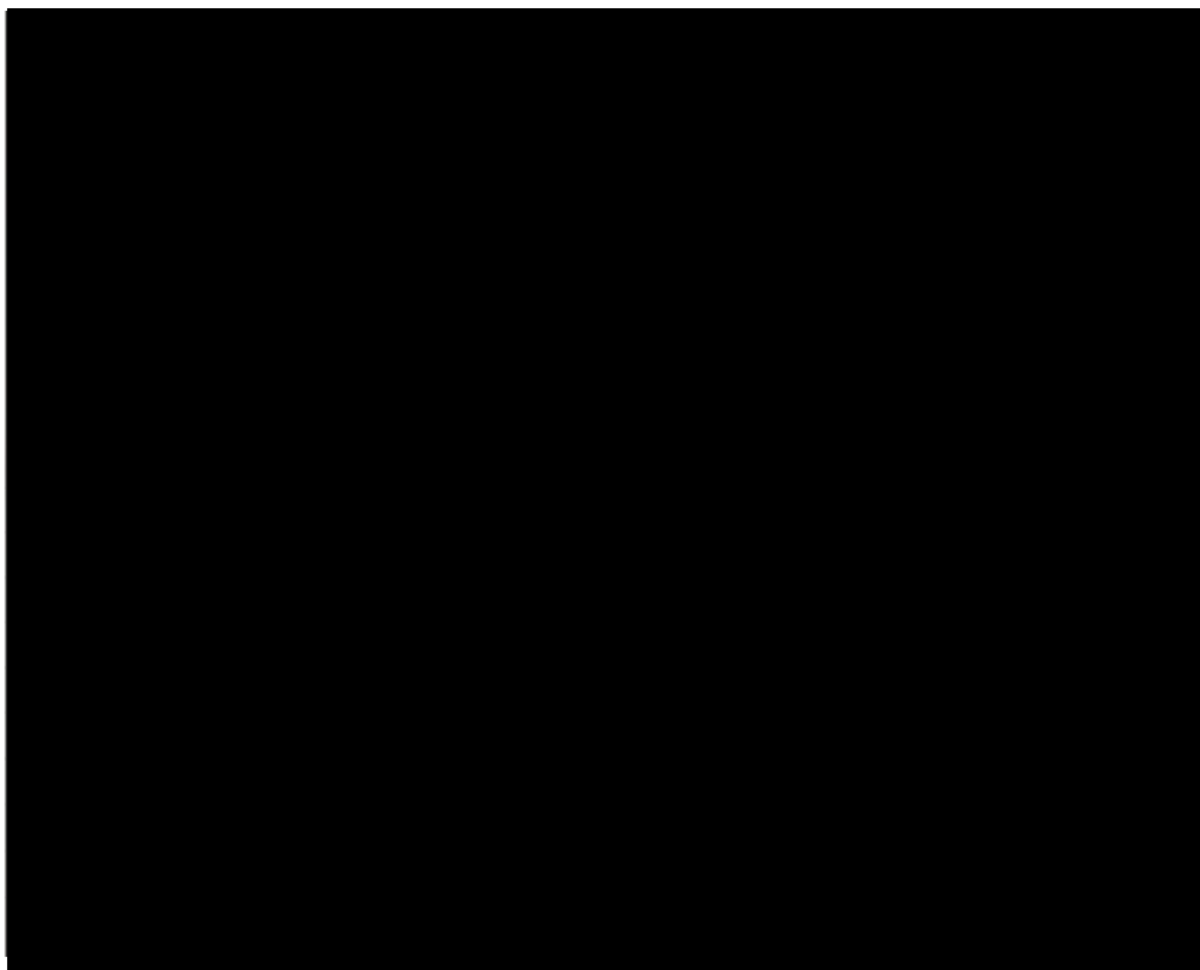


Figure 2: Awak Bridge Community Consultation Attendance Sheet

Community Meeting and Stakeholder Perception Survey

Awak Community Center, U, Pohnpei

MEETING MINUTES

Meeting Note
Taker:

Olivier Wortel, National
Environmental and Social
Consultant, PCS

Date/Time:

November 14, 2024, 3:15 pm to
6:15pm

Welcoming and Overview

National Environmental and Social Consultant Wortel opened the meeting at 3:15 pm, Pohnpei time, and welcomed the participants and thanked them for their time. Wortel briefly explained the purpose of the meeting: to gain community feedback and input to the impending Awak Bridge improvement project, including any concerns and issues that exist. At the prompting of Mr. Bejay Obispo, Vice Speaker for the U Municipal Council, Mr. Wortel invited Mr. Obispo to give an opening prayer to bless the meeting and the food.

Obispo then delivered a prayer in the local language, and the meeting was formally started.

Introductions

Wortel started by introducing himself as the lead National Environmental and Social Consultant on the project, representing Palikir Consulting Services (PCS), and that the team present were well-versed in social and environmental and that such sociological and ecological factors needed to be more fully integrated into the final project design for the Awak Bridge. Wortel then asked the International Consultants sitting at the presentation table to introduce themselves.

Dr. David Lees introduced himself as the International Environmental Expert (IESE) for this consultancy, noting that he was also a certified Civil Engineer, and is able to provide a relatively holistic view of the various project elements. Lees stated that he has worked in over 55 different countries on World Bank and other development partner funded projects.

Ms. Rosemary Faletoese introduced herself as the International Social Expert (ISSE) for this consultancy and stated that it was very important to receive the thoughts and feelings of the community on the project, and that the team was there to elicit those in an open manner.

Mr. Rico Rico introduced himself as the Project Officer for the World Bank PRIME project and also introduced his two recently hired Project Assistants, Mr. Triston Gallen, and Ms. Shalie Mar Torres, all of whom work out of the DTC&I Project Management Unit (PMU). Rico stated that they were there to support the consulting team. Rico asked Mr. Wortel if there was any local PCS staff present to assist with any translation needs, and Mr. Wortel responded that unfortunately, the designated local staff was unexpectedly called away prior to the Awak meeting for a funeral in his community and thus could not be present.

Mr. Shiva Dhakal introduced himself as the Social Expert (SSE) for the FSM national government Central Implementation Unit (CIU), and that he would be observing the proceedings to ensure that appropriate social mechanisms would be observed throughout the process of the project.

██████████ introduced himself as a highly interested adjacent land owner (ALO) to the project, and expressed a desire to voice

some concerns about the final project design, as well as some trepidation of climate resiliency implications for increased precipitation events and the effect it would have on his home and surrounding property.

Mr. Macyver Obispo introduced himself as an employee of U Municipal Government and said he was there on behalf of the local government to observe and report.

Vice Speaker Obispo thanked the National and International consultants present for their time, as well as the various state and national government personnel in attendance. Obispo started by apologizing for the relatively lower than expected turnout for the event due to the fact that the Paramount Chiefs' – the *Nanmwarki* of U – oldest sister had passed away the day prior, and that the entire 11 Villages of U were present at that very important cultural event. Obispo assured the consultants that all of the 11 Villages of U were well aware of and informed of this engagement, and would be monitoring the outcomes through the community emissaries sent, primarily represented by Vice Speaker Obispo and ALO [REDACTED] [REDACTED] closed his introduction by stating that the community of Awak has been aware of this project for the past 4-5 years and looked forward to its implementation.

Awak Perception Survey Presentation

Dr. Lees thanked the community members for their time and for allowing the consulting team to provide their inputs to the subject at hand. Dr. Lees provided general background and context of the project first, and highlighted the fact that the sociological and ecological receptors of the project were of paramount importance, before launching his presentation, which was themed on the Environmental and Social (ESS) lens for all aspects of the Awak Bridge design and construction phases.

Dr. Lees noted that for design, all Environmental and Social aspects are considered in weight, height, width and so forth to ensure that water flows are maintained or improved in this area of the island, which sits in a large basin surrounded by steep mountains, and where flooding is likely to occur. Dr. Lees then discussed the construction of the bridge and explained to the community group that the old bridge would be removed, while at the same time a temporary portable bridge – or Bailey Bridge – would be placed on the landward side of the project site, so that what is ultimately left with the community does not do any environmental damage and improves the social aspects of the community. Dr. Lees again reiterated the stipulation that any construction works must not affect the hydrological regime, and must instead seek to assist and improve it. Likewise, any temporary removal of social or ecological infrastructures must ultimately also be replaced and improved.

Dr. Lees then stated that the output of this consultation would be the drafting and submission of an Environmental and Social Management Plan (ESMP), a document which would become part and parcel of the final designs, the tender documents, and part of the contractor's agreement, the Environmental and Social elements of which would be binding. Dr. Lees made a point of saying that the ESMP is a public document and that everyone would be provided a means to access it if they so wanted.

Dr. Lees then discussed the portion of the presentation on grievance redress, and highlighted the existence and importance of the project Grievance Redress Mechanism (GRM). Dr. Lees stated that the project contractors and supervisors should welcome complaints, and that there should never be any reason why anyone at anytime should not be able to file a complaint, with no fear of retribution. Dr. Lees highlighted further that the culturally appropriate means and system of redress to a complaint should be identified and implemented.

Ms. Rosemary Faletoese added that the GRM is an important tool and mechanism for any infrastructure project, particularly in a community as close-knit as U, and that this is a means by which any issues or complaints, including those from women and girls, should be expressed in the culturally appropriate manner. Ms. Faletoese added that the primary purpose of ESS is to ensure that no harm is done, either to the people or to the ecosystems on which they depend.

Dr. Lees closed the presentation with some of the Environmental and Social aspects to be considered during the construction phase of the

project. These included an estimate of approximately 6 months from start to finish, and the importance of building trust between contractors and the community in various ways in order to facilitate this. He said that it would be inappropriate for contractors to work at nights or on Sundays, and that if this were needed, that the contractor should seek permission from the local chiefs to do so first, what he referred to as, “apologizing beforehand”. In addition, Dr. Lees noted that it is most often a requirement for contractors to have a minimum of 30% of their workforce hired from the community itself. Dr. Lees indicated this not only builds a strong relationship between the contractor and the community, but also spreads direct economic benefits into the community from the project actions. Dr. Lees stated that the project would require monthly Corrective Action Reporting (CAR) that addresses any ESS shortfalls or omissions.

Lastly, both Dr. Lees Ms. Faletoes stated that this engagement was a final check in with the community to understand any issues, concerns or ideas so that they may be incorporated into the final project design and such would inform the ESS project implementation and construction aspects for the community.

There was a round of light, appreciative applause from all present.

There were several discussion points after the presentation:

- Vice Speaker Obispo thanked Dr. Lees and stated that a bridge with a wider span is what the community wanted, so as to improve water flow from the watershed into the river and the estuary beyond. Obispo stated that this project had started with discussions in the community five years ago, and that “99 to 100 %” of the people in Awak were aware of it. One other primary concern from Obispo was the question of when the project would finally start, as the community are eager to participate in project activities and an improved, safer bridge.

Vice Speaker Obispo continued with a cultural and ecological concern at the project site: the fact that across the road from the Awak Community Center there exist a small set of dwarf mangrove forest, which is a known burial site for dwarfs, or small humans who existed in the past, and that this needed to be considered and respected during all phases of the project.

Finally, Vice Speaker Obispo asked if there would be additional community consultations for the project, stating that this would be important as the project mobilization neared, and said that any community consultation should be announced one week in advance, not more or less, of the proposed meeting.

As a closing comment, Vice Speaker Obispo stated that it would be important to provide an opportunity for local community members to play a role in project supervision and oversight, particularly for Environmental and Social matters.

- ALO ██████ stated his main concern of climate impacts increasing the water flows due to increased precipitation, as well as increased extreme precipitation events, stating that May/April and December are generally the two times of year that there

are higher risks to the community for this, specifically for his and surrounding ALO homes.

There were no further questions or comments.

Survey Introduction and Facilitation

Ms. Faletoese introduced the project perception survey, explained its purpose, and asked for some of the PCS support staff to hand them out for the community members present. Ms. Faletoese stated that the respondents were free to answer any questions they were comfortable to answer, and that if there were any that they found unnecessary or unusual, they could choose not to answer.

The facilitation team then assisted the completion and collection of the surveys.

Closing Remarks

NSS Wortel closed by thanking his Environmental and Social team and other staff who supported coordination and logistics of this stakeholder meeting, including the outreach and public awareness activities, and especially the community members present, despite the difficult circumstances in the community at this time, with the funeral taking place, and asked Vice Speaker Obispo to send the teams condolences as appropriate to the *Nanmwarki* of U for the unexpected and tragic loss of his older sister. Wortel asked all of the participants to help themselves to the packed boxes of food and closed the community meeting.

End.

Post-Community Consultation Site Visit with ALO Peter Rodriguez - Awak Bridge, Pohnpei

After the consultation was completed, the Environmental and Social Team, led by Olivier Wortel, and supported closely by Dr. David Lees and Ms. Rosemary Faletoese, took the opportunity to meet with two of the community leaders, Mr. Bejay Obispo, and [REDACTED]. [REDACTED] also happened to be one of the immediate Adjacent Land Owners to the project site, and thus his inputs and knowledge of the river – which runs on two sides next to his home and property – would be critical to listen to, discuss and take in. Ramirez explained that he has lived on this piece of property at the head of the intertidal zone where the river meets the bay his entire life, and that increasingly, extreme weather events – super high tides and mass precipitation as two clear examples – were of paramount concern.

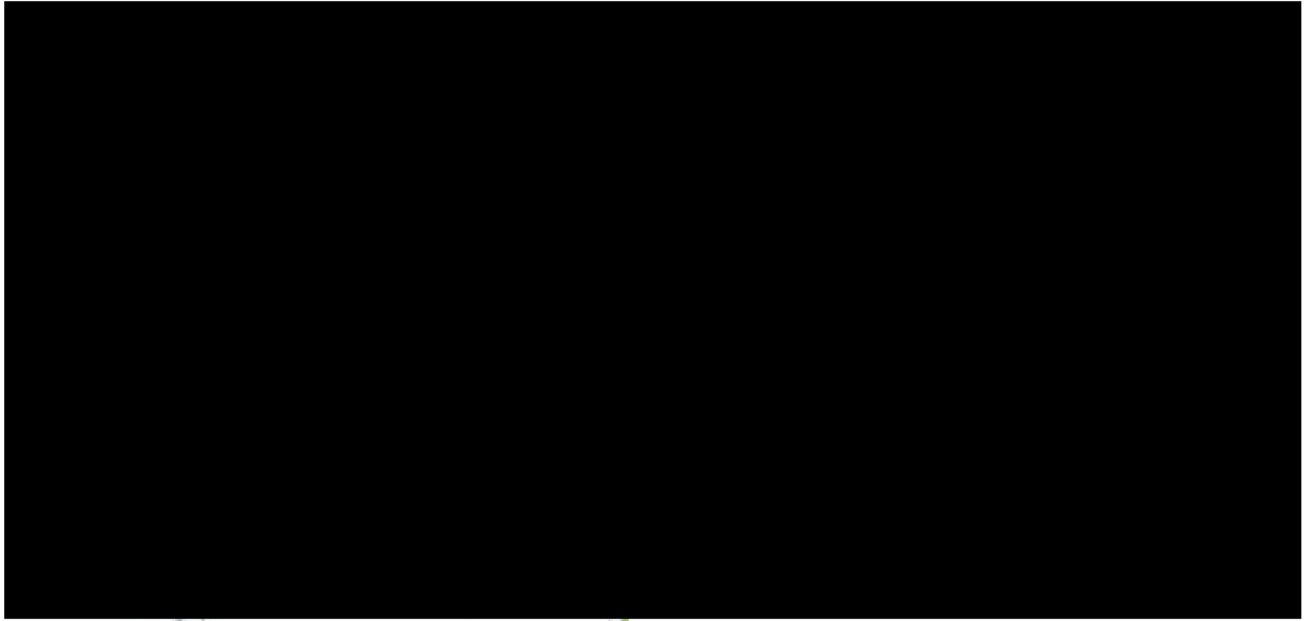
██████ led the team to upper part of his family compound, behind his home, where the river runs parallel to the home in the back, approximately 6 meters away, and then showed the team where it quickly turns toward the Awak bridge and into the bay, along the southern side of his property, about 5 meters from his main house. It was clear that the river had the potential to cause significant damage and erosion with continued extreme precipitation events. Ramirez had three major requests:

1. That a secure retaining wall be built along the river at the east end of his home and property behind the main dwelling, and continue along the southern side of the home where the river runs to the sea;
2. That the Awak Bridge span be lengthened by at least 10 meters toward the south so that the river could run straight from his home into the bay, with the reasoning that this would protect any new bridge infrastructure from heavy water flows, as well as reduce the potential for erosion of land of his extended family and neighbors nearer to the bridge (Ramirez himself lives about 30-40 meters upstream of the bridge); and,
3. That both sides of the river be built up with a higher, more secure retaining wall – e.g., Gabion baskets – so that both the main community church on the north side, and homes on the south side of the river would be protected from flooding and erosion.

██████ reiterated what the broader community has communicated – that the bridge improvement project was decades in need and that the community very much looked forward to it – and that if these elements could be considered, the project would be very much welcomed. He hoped to see it come to fruition soon.

As the consulting team departed the post-community consultation site visit with the ALOs, Mr. Obispo led the group to their car and left them with one final request, as he thanked them for their time and attention to the community needs and those of the ALOs: that both he himself, and other community members be hired to support project oversight and construction activities.

The team thanked ██████ and Mr. Obispo for their hospitality and time and stated that in regard to Environmental and Social commitments, it is always appropriate to have local community members involved in project implementation.





Annex I – Consultation Project Design Issues Matrix

Site: Awak Bridge, Pohnpei					
Project Design Issues					
		Problem Description	Solution Description		Design Action
				Relevant Output document	
1	Public Consultation, Land Owner	Climate Change effects on surrounding land of the bridge and its stability with increased precipitation	Provision of 150-foot Gabion basket river training solution to stabilize the banks approaching the Awak Bridge	ESMP	Porous earth retaining solution along the bank to maintain stability in increased stormwater events

2	Public Consultation, Land Owner	How would access be maintained while demolition is taking place	Provision for Bailey Bridge solutions to allow for temporary bypass while the bridge is being constructed	ESMP	Provision for these Works made in Drawing details
3	Public Consultation, Land Owner	Development to avoid Dwarf Mangrove Forest	Work is specified outside of the Construction Buffer Zone (Area of Influence)	ESMP Appendix C	Provision for these Works made in Drawing details
4	Public Consultation, Church	Church Operations during construction being disrupted, current operations : •Sunday 8am – 12pm	Time for Church service will be considered non-working times in the Contract	ESMP	Provision under Instructions to Bidders with Working Hours set from Monday to Saturday 8am – 5pm

		•Monday, Tuesday, Thursday, Friday 7-8am •Wednesday 6- 7pm			
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Appendix C: Culturally Significant Site - Dwarf Burial Ground Next to Awak Bridge

The Honorable Carlson D. Apis
Secretary, FSM DoTC&I
FSM National Government
Subject: Dwarf Burial Ground Next to Awak Bridge

Dear Secretary Apis,

On behalf of Awak Community, I am writing to let your office know that there is a site considered in local folklore to be a dwarf burial ground located next to the Awak Bridge project site. The folklore site has local significance, but is not protected under state or national legislation.



The community encourages the bridge and road works to proceed while minimizing impact on the dwarf burial folklore site marked on the above image.

Please do not hesitate to contact me for any clarification at bejay@mypuc.fm.

Sincerely Yours,

Bejay Obispo
Community Representative
Awak, Pohnpei

Appendix D: Statement on permit for Temporary Land use



GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA
Department of Transportation, Communications & Infrastructure
P.O. Box PS-2, Pohnpei, FM 96941
Tel.: (691) 320-2865 Fax: (691) 320-5853

Statement on Permit for Temporary Land Use

I, the undersigned herein under,

Name

ID Card/Drivers Lic. :

Address :

As the legitimate owner of the land and by virtue of a valid Proof of Entitlement Number 131-A-01(4,712 sqm/ 50,719.55sqft) Date 8th July 1983 hereby declare that I allow my land to be used by the Department of Transport, Communications and Infrastructure, FSM National Government (DTCI) to be utilized for construction work of the Awak Bridge replacement for 2 years for the benefit of the general public.

Location of the land	: West of stream flowing between this property and the Church
Land size to be lent	: 2000 sqft
Remaining land size	: 48,719.55 sqft
Existing land use	: Residential
Land Ownership status	: Owned

This statement is duly made without any pressure from anyone.

Place, date this mutual agreement is signed

Party giving the permit

Party receiving the permit on behalf of National Government

Signature of the Land owner

Signature of Officer of DTCI

Signature of Witnesses

Name 1

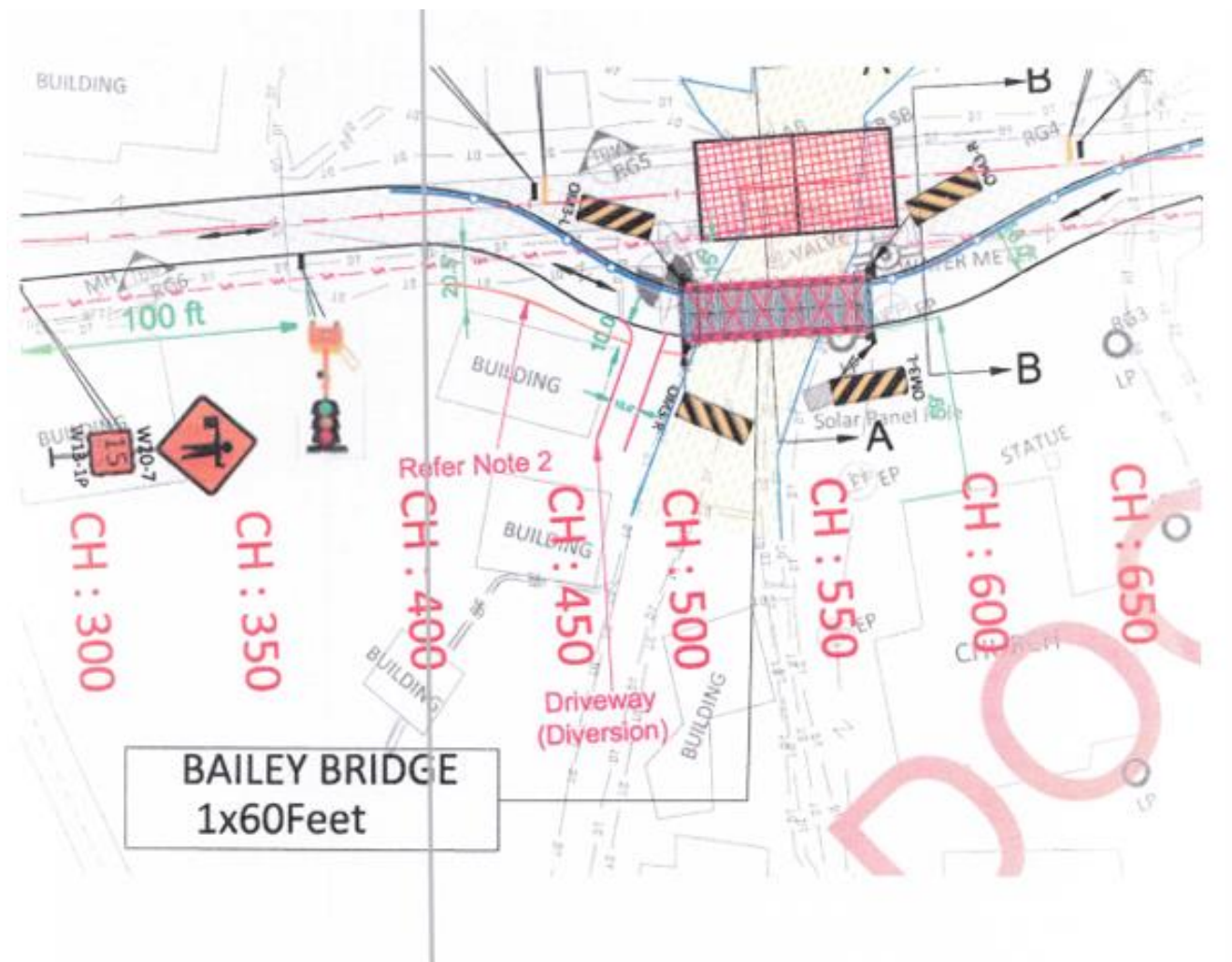
signature

Name 2

signature

Attachment: Sitemap of land to be donated and photo.

Remarks: Original copy of this letter will be kept by the land donor as part of the proposal.





**GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA**

Department of Transportation, Communications & Infrastructure

P.O. Box PS-2, Pohnpei, FM 96941

Tel.: (691) 320-2865 Fax: (691) 320-5853

Obstacle Identification





**GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA**

Department of Transportation, Communications & Infrastructure

P.O. Box PS-2, Pohnpei, FM 96941

Tel: (691) 320-2865 Fax: (691) 320-5853

Eastern Zone (Church) - 4 Trees, shrubs + Utility Pole





**GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA**
Department of Transportation, Communications & Infrastructure
P.O. Box PS-2, Pohnpei, FM 96941
Tel: (691) 320-2865 Fax: (691) 320-5853



X 2 White Frangipani Trees (Medium) with Medium Croton Shrubs (20 feet)

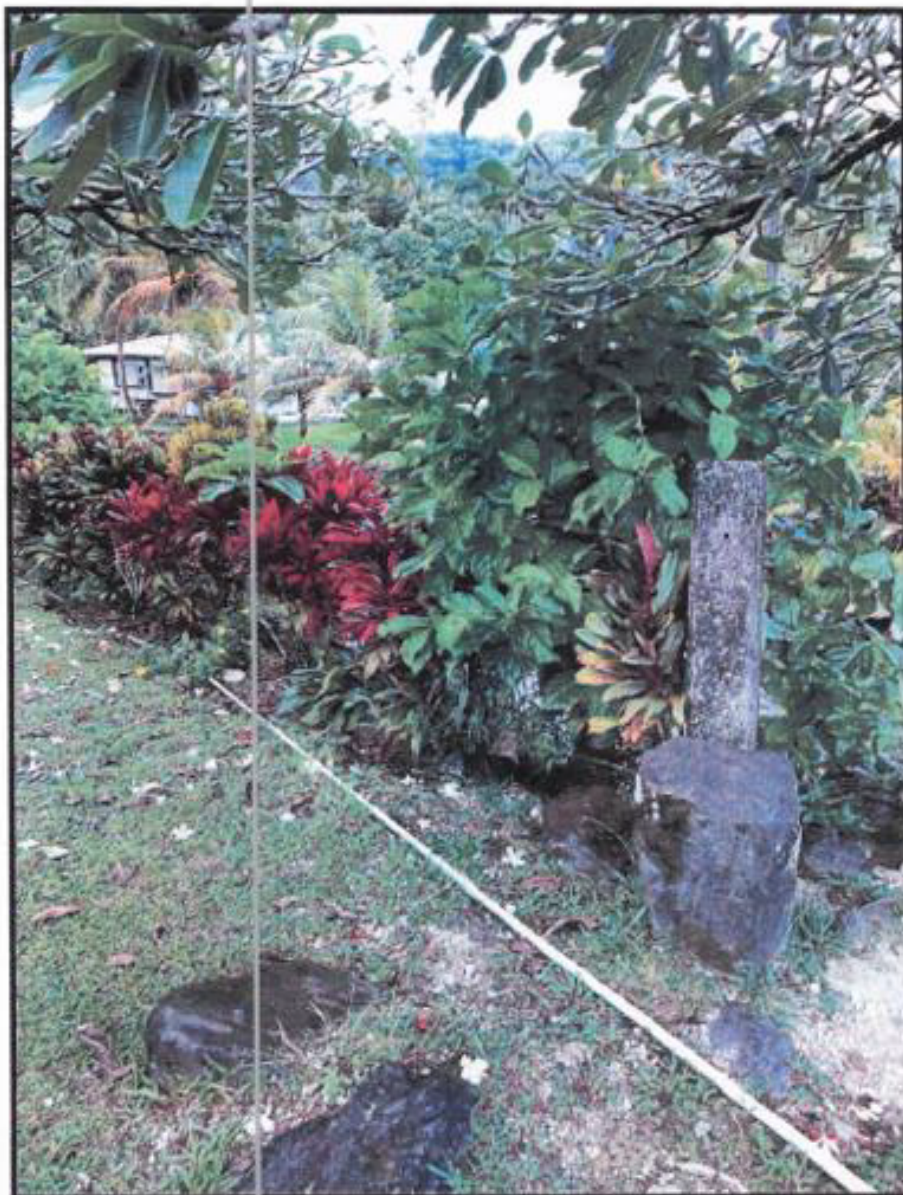


**GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA**

Department of Transportation, Communications & Infrastructure

P.O. Box PS-2, Pohnpei, FM 96941

Tel: (691) 320-2865 Fax: (691) 320-5853



1 Large Noni Tree with two smaller size trees



GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA

Department of Transportation, Communications & Infrastructure

P.O. Box PS-2, Pohnpei, FM 96941

Tel.: (691) 320-2865 Fax: (691) 320-5853

Statement on Permit for Temporary Land Use

I, the undersigned herein under:

Name

: ROSTAN AMOR

ID Card/Drivers Lic. :

DL NO. 0230-24

Address

:

As the legitimate owner of the land by virtue of a valid Proof of Entitlement Number 112-A-05 Date 8th July 1983 hereby declare that I allow my land to be used by the Department of Transport, Communications and Infrastructure, FSM National Government (DTCI) to be utilized for construction work of the **Awak Bridge replacement** for 2 years for the benefit of the general public.

Location of the land

: West of stream flowing between this property and the Church

Land size to be lent

: 2000 sqft

Remaining land size

: 48,719.55 sqft

Existing land use

: Residential

Land Ownership status

: Owned

This statement is duly made without any pressure from anyone.

Place, date this mutual agreement is signed

Party giving the permit

Party receiving the permit on behalf of National Government

Signature of the Land owner

Signature of Officer of DTCI

Shankarah Lessey

Signature of Witnesses

Name 1

signature

BEJAY OTSISA

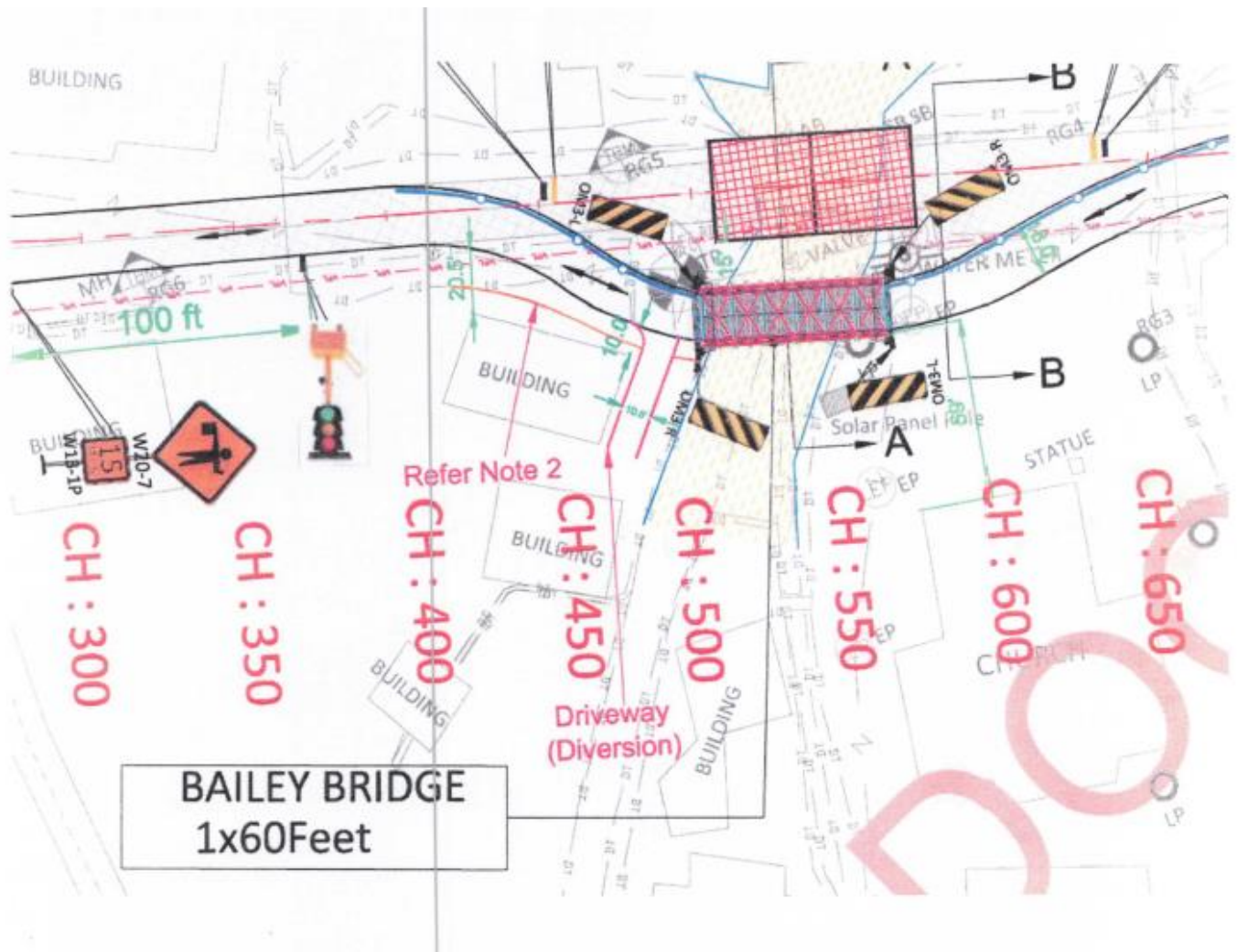
Name 2

signature

03/06/2025

Attachment: Sitemap of land to be donated and photo.

Remarks: Original copy of this letter will be kept by the land donor as part of the proposal.







**GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA**

Department of Transportation, Communications & Infrastructure

P.O. Box PS-2, Pohnpei, FM 96941

Tel.: (691) 320-2865 Fax: (691) 320-5853

Western Zone (Private) – 3 Trees and shrubs (Crotons)



3 Cocomat Trees and Croton Shrubs



**GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA**

Department of Transportation, Communications & Infrastructure

P.O. Box PS-2, Pohnpei, FM 96941

Tel.: (691) 320-2865 Fax: (691) 320-5853

Central Zone (Private) – 4 Trees + Utility Pole



Fire Croton Trees (x 3) and Juvenile Noni Tree to be removed

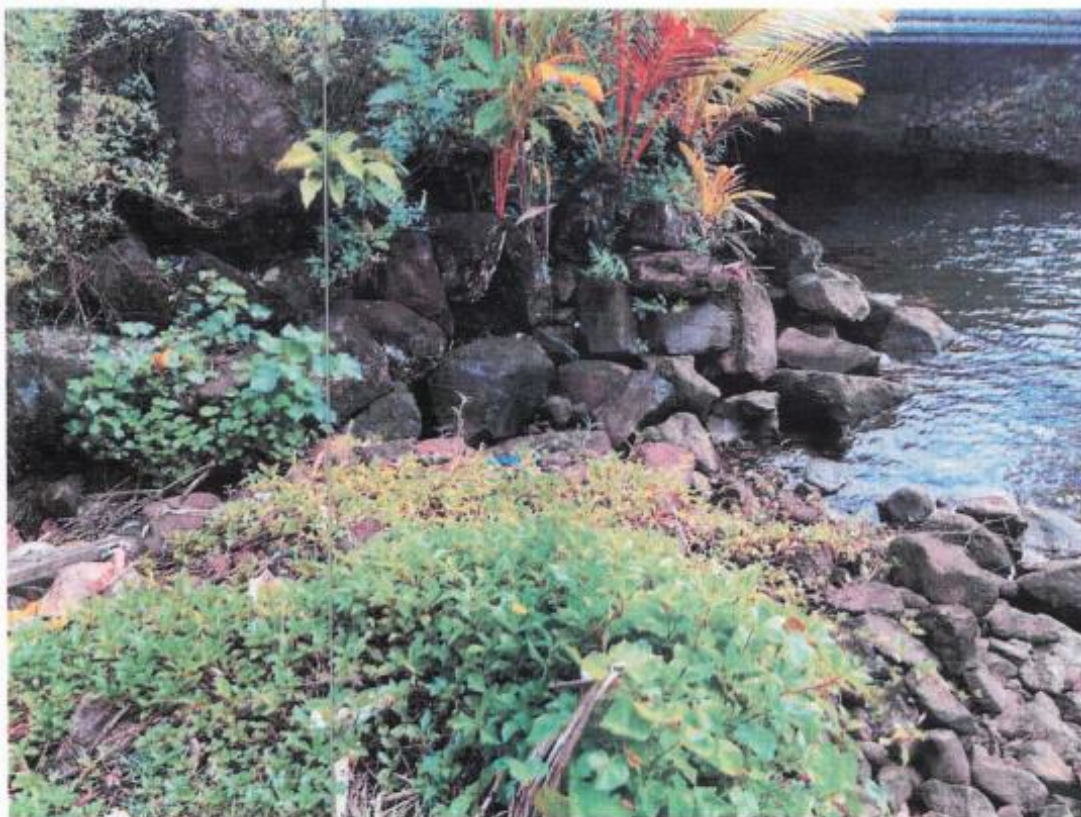


**GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA**

Department of Transportation, Communications & Infrastructure

P.O. Box PS-2, Pohnpei, FM 96941

Tel: (691) 320-2865 Fax: (691) 320-5853



Juvenile Coconut Trees to be removed along with wild creepers



**GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA**

Department of Transportation, Communications & Infrastructure

P.O. Box PS-2, Pohnpei, FM 96941

Tel.: (691) 320-2865 Fax: (691) 320-5853



Utility Pole to be relocated



GOVERNMENT OF THE
FEDERATED STATES OF MICRONESIA

Department of Transportation, Communications & Infrastructure

P.O. Box PS-2, Pohnpei, FM 96941

Tel.: (691) 320-2865 Fax: (691) 320-5853

Statement on Permit for Temporary Land Use

I, the undersigned herein under:

Name

: Peter L. Ramirez

ID Card/Drivers Lic.

: DL NO. # 1042-24

Address

:

As the legitimate owner of the land by virtue of a valid Proof of Entitlement Number 131-A-01(4,712 sqm/ 50,719.55sqft) Date 8th July 1983 hereby declare that I allow my land to be used by the Department of Transport, Communications and Infrastructure, FSM National Government (DTCI) to be utilized for construction work of the Awak Bridge replacement for 2 years for the benefit of the general public.

Location of the land

: South of stream flowing between this property and the

Land size to be lent

Church : 2000 sqft

Remaining land size

: 48,719.55 sqft

Existing land use

: Residential

Land Ownership status

: Owned

This statement is duly made without any pressure from anyone.

Place, date this mutual agreement is signed

Party giving the permit

Party receiving the permit on behalf of National Government

Signature of the Land owner

Peter L. Ramirez

Signature of Officer of DTCI

S. Lessey
Shankarah Lessey

Signature of Witnesses

BETTY OBUP

03/06/2015

Name 1

signature

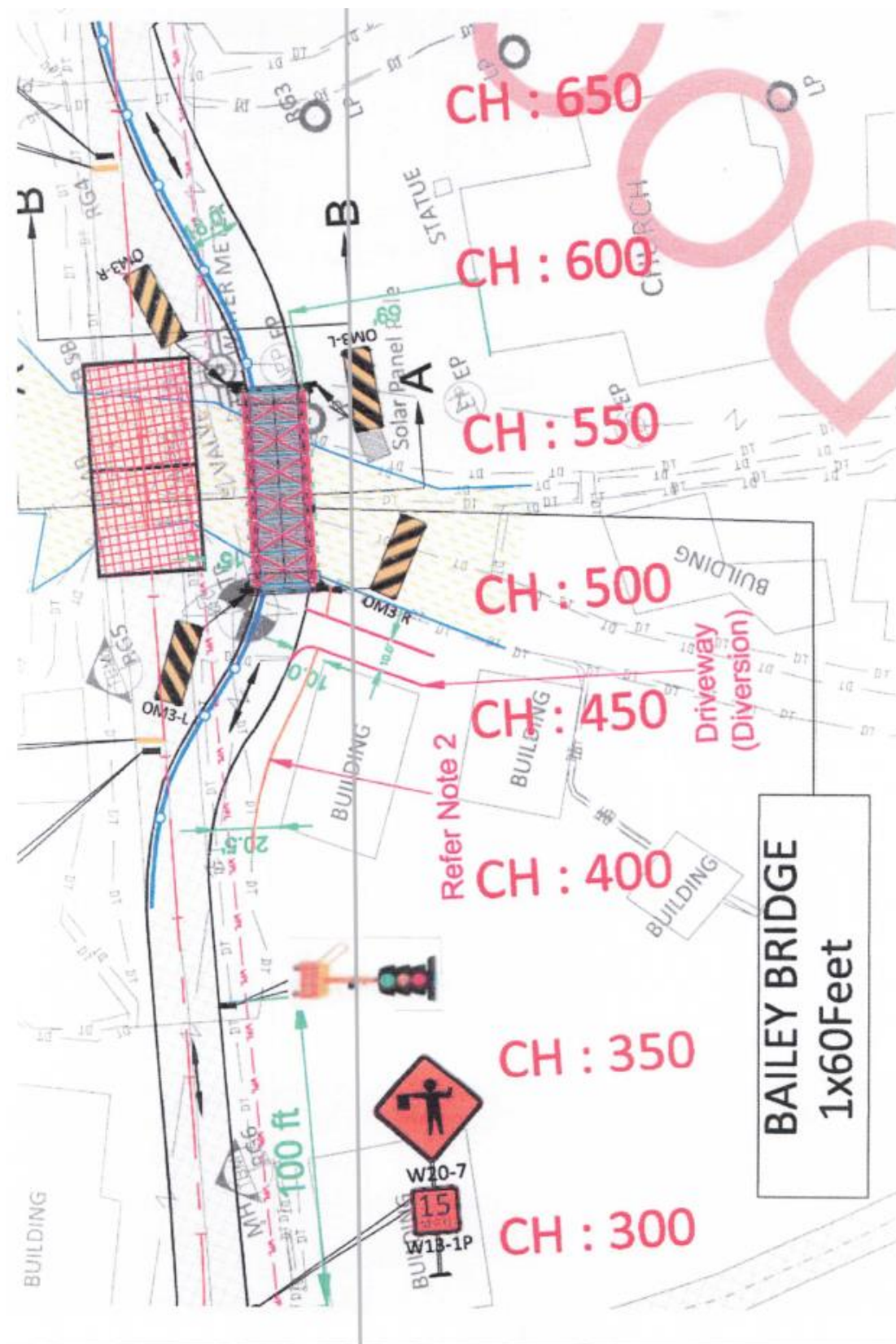
[Signature]

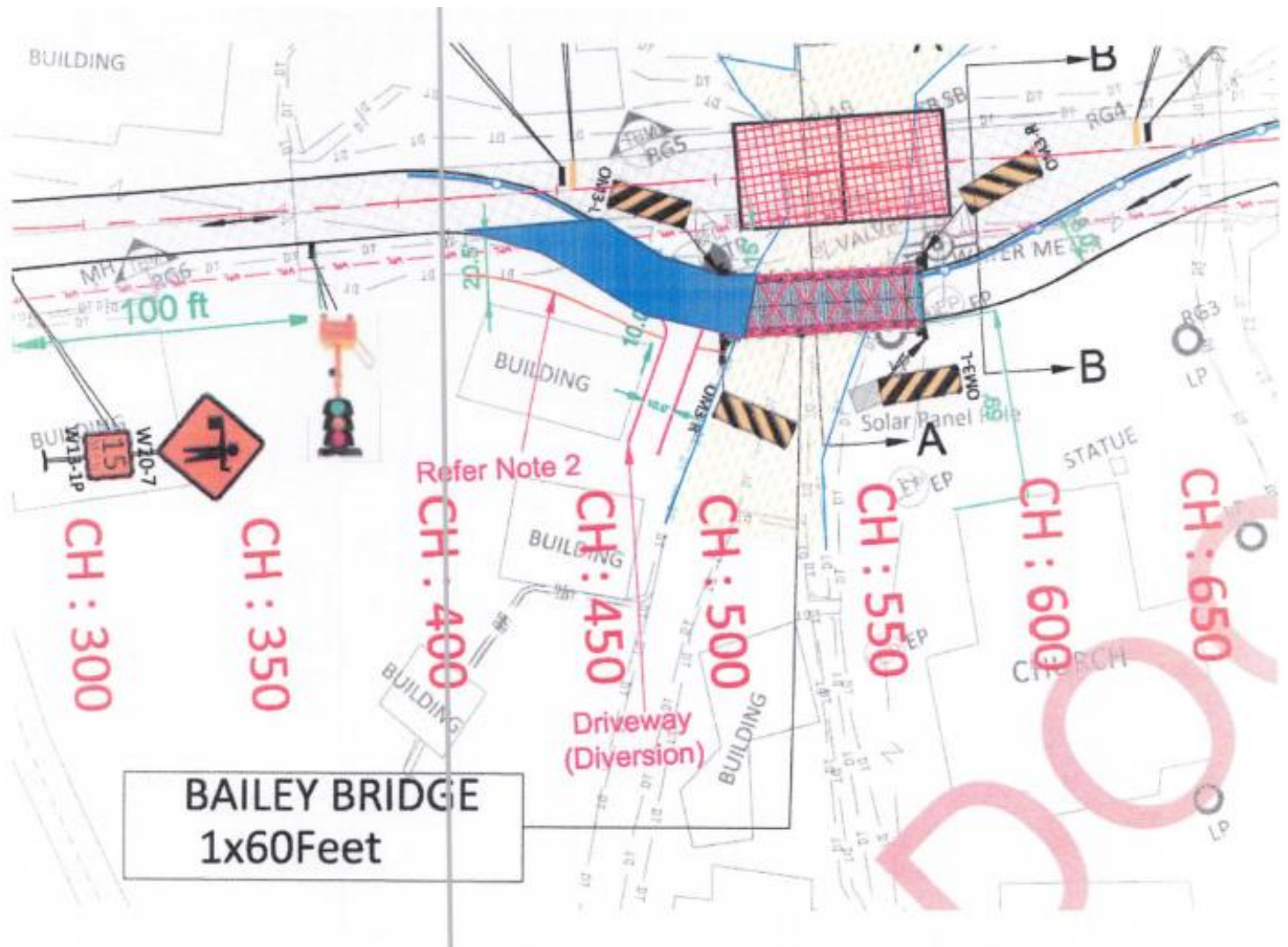
Name 2

signature

Attachment: Sitemap of land to be donated and photo.

Remarks: Original copy of this letter will be kept by the land donor as part of the proposal.





Appendix E: An Indicative Outline For³⁰ Contractor's Environmental & Social Management Plan (CESMP)

1. INTRODUCTION

The Contractor shall prepare and implement this Contractor Environmental and Social Management Plan (CESMP) in accordance with:

- ESMP
- SCORE/PRIME Environmental and Social Management Framework (ESMF),
- Environmental and Social Commitment Plan (ESCP),
- Labour Management Procedures (LMP),
- Stakeholder Engagement Plan (SEP),
- World Bank Environmental & Social Standards (ESS1–ESS10), and
- Relevant national and State laws.

This CESMP sets out the minimum ESHS (Environmental, Social, Health & Safety) requirements that the Contractor must follow during **construction only**. No works may commence until the CESMP is approved by PIU/CIU.

2. LEGAL & POLICY REQUIREMENTS

The Contractor must comply with the following and review his scope of work if additional acts or regulations applicable to the subproject and construction site:

- FSM EIA Regulations (1989)
- FSM EPA Earthmoving Regulations (1988)
- Applicable World Bank EHS Guidelines (General Guidelines)

Where national law differs from WB requirements, the **more stringent requirement applies**.

3. CONTRACTOR ROLES & RESPONSIBILITIES

Contractor ESHS staffing

- Implement all mitigation measures specified in this CESMP.
- Ensure subcontractors follow the same standards.
- Maintain ESHS documentation and incident logs.
- Provide weekly and monthly ESHS reports to PIU.
- Ensure safe working conditions and access for community members.

4. KEY MANAGEMENT PLANS (MINIMUM REQUIREMENTS)

The Contractor must prepare the ESMP recommended sub-plans

5. SPECIFIC MITIGATION MEASURES

- a. Pre-Construction
- b. Construction Phase
- c. SEA/SH Prevention

6. WORKER MANAGEMENT & OHS

- a. Worker Induction
- b. Worker Grievance Mechanism
- c. Accident Prevention

7. COMMUNITY HEALTH, SAFETY & ENGAGEMENT

8. EMERGENCY RESPONSE PROCEDURES

9. MONITORING & REPORTING

10. COMPLETION & SITE REINSTATEMENT

³⁰ This is an indicative outline for CESMP provides a structured framework, ensuring logical flow and comprehensive coverage of the ESMP, ESMF, SEP, LMP etc. The outline is flexible and proportionate. The CESMP will cover all the subplans recommended by this ESMP and if additional subplans required during the CESMP preparation stage.