Project Administration Manual

Project Number: 49319
Loan and Grant Number: {LXXXX; GXXXX}
November 2015

Vanuatu: Cyclone Pam Road Reconstruction Project

Contents

Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Ministry of Finance and Economic Management (MFEM) as the executing agency, and the Ministry of Infrastructure and Public Utilities (MIPU) as the implementing agency, are wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan/Grant Negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the Financing Agreement. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the Financing Agreement, the provisions of the Financing Agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant administrative procedures of the Government of Vanuatu and ADB (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

Abbreviations

ADB	=	Asian Development Bank
ADF	=	Asian Development Fund
DEPC	=	Department of Environmental Protection and Conservation
DMF	=	design and monitoring framework
DSC	=	design and supervision consultants
EARF	=	environmental assessment and review framework
EMP	=	environmental management plan
GDP	=	gross domestic product
GEF	=	Global Environment Facility
ICB	=	international competitive bidding
IEE	=	initial environmental examination
MFEM	=	Ministry of Finance and Economic Management
MIPU	=	Ministry of Infrastructure and Public Utilities
NCB	=	national competitive bidding
NGOs	=	nongovernment organizations
PAM	=	project administration manual
PMU	=	project management unit
PRC		program recovery committee
QCBS	=	quality- and cost based selection
RRP	=	report and recommendation of the President to the Board
SPS	=	Safeguard Policy Statement 2009
TOR	=	terms of reference

I. PROJECT DESCRIPTION

1. The Cyclone Pam Road Reconstruction Project (the project) will support the efforts of the Government of the Republic of Vanuatu (the government) to reconstruct, and climate and disaster proof the transport sector infrastructure on Efate ring road damaged by the Cyclone Pam floods and destructive storm surges in March 2015. The project will support the government to build back better concepts and strengthen resilience to future disasters, particularly through more resilient roads and bridges.

1. Impact and Outcome

2. The impact of the project will be accelerated economic and social recovery in Vanuatu's Cyclone Pam affected provinces. The outcome will of the project will be socioeconomic activities restored to at least pre-cyclone levels.

2. Outputs

3. In response to and in line with the post-disaster needs assessment findings, the project will have one output: transport infrastructure in damaged locations on Efate ring road reconstructed, and climate and disaster-proofed.

4. The damages by Tropical Cyclone Pam are at various locations on the Efate ring road. The tentative list of civil works include (i) approximately 10 km of road rehabilitated; (ii) about 8 major stream crossings[1] and their approach roads rehabilitated and protected; (iii) about 9 bridges[2] or box culverts and causeways repaired for minor damages and debris cleared; (iv) approximately 200 m meters of river channel realigned at upstream and downstream and river training structures constructed; (v) approximately 800 m meters of sealed pavement protected against erosion from storm surges; (vi) approximately 8 km of road side and cross road drainage improved; (vii) about 6 culvert headwalls reconstructed; (viii) 250 m of guard rail reconstructed; (ix) approximately 180 m of river banks protected; (x) approximately 100 m by 50 m of land slide at Klems hill reinstated and road pavement protected; and (xi) approximately 600 m long concrete longitudinal road side drain ay Klems hill improved. All the measurements are estimates and are subject to confirmation during topographical and bathymetrical surveys during implementation. All works will incorporate gender sensitive designs including construction of walkways and provision of laundry facilities in streams alongside the road. The damaged segments of the road and bridges will be assessed during implementation and subprojects determined for feasibility studies. The above lists are not individual subprojects but a combination of them or all of them will be considered a subproject for feasibility studies.

[1] The bridges include Mele, Prima Bridge, Creek Ai, Marona, Lamin, Malatia, Pangpang, and Rentapau.
[2] The bridges include Eton Dry Creek, Eton Beach, La Cressonnaire, Havana, Tanoliu, Sara, Epule, Epau and Neslep.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Indicative Activities	Months (2015–2016) Aug	Sep	Oct	Nov	Dec	Jan	Feb	Who responsible
Advance contracting actions			X					ADB
Establish Project Management Unit						X		Government & DSC
ADB Board Approval				X				ADB
Loan/Grant agreement Signing					X			ADB and Government
Government legal opinion provided					X			Government
Government budget inclusion						X		Government
Loan/Grant Effectiveness[3]						X		ADB

Source: Asian Development Bank.

B. Overall Project Implementation Plan

5. The project will be implemented within 2 years period. The overall project implementation schedule is provided below.

[3] The loans and grants will require ratification by Parliament due to sit in March 2016 and is likely to delay effectiveness.

Cyclone Pam Road Reconstruction Project Implementation Schedule

Activities	2015				2016				2017				2018			
A. Milestones	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
ADB Loan & Grant Negotiations																
ADB Loan & Grant Approvals																
Loan Effectiveness																
B. DMF Output: Transport infrastructure in damaged locations on Efate ring road reconstructed, and climate and disaster-proofed																
Activity 1: Project management unit (PMU) and design and supervision consultant (DSC)																
Activity 1.1: Recruitment of PMU / DSC																
1.1.1: Advertisement and request for EOIs																
1.1.2: Shorlisting and evaluation of proposals																
1.1.3: Negotiation and awarding of contract																
1.1.4: Mobilization and Supervision																
1 1.5: Prepare inception report and an implementation plan																
Activity 2: Civil Works																
(a) Preconstruction Phase																
Activity 2.1 Reconstruction of roads and bridges																
2.1.1: Conduct topographical survey of all subprojects																
2.1.2: Conduct geotechnical investigations																
2.1.3: Conduct feasibility study																
2.1.4: Prepare detailed engineering design																
2.1.5: Prepare bid documents, bidding , evaluation, contract award and signing																
(b) Construction Phase																
2.1.6: Contractor mobilization and construction																

Cyclone Pam Road Reconstruction Project Implementation Schedule

Activities	2015				2016				2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 2.2: Klehms hill landslide and drainage improvement																
(a) Preconstruction Phase																
2.2.1: Conduct topographical survey																
2.2.2: Conduct feasibility study																
2.2.3: Conduct geotechnical investigations																
2.2.3: Prepare detailed engineering designs																
2.2.4 Prepare bid documents, bidding , evaluation, contract award and signing																
(b) Construction Phase																
2.2.5: Contractor mobilization and construction																
B. Management Activities																
National contractor capacity assessed																
Procurement plan key activities to procure contract packages																
Environment management plan and oversee environment management activities																
Key gender activities identified and implementation																
Communication strategy key activities and implementation																
Community consultation process																
M&E System and performance monitoring																
Inception mission, inception report and implementation plan																
Review mission																
Project completion report																
Arrange annual audit of project accounts																

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations—Roles and Responsibilities

6. The proposed implementation arrangements follow as much as possible established procedures and processes under on-going ADB-finance projects and/or relevant Government established procedures or these of other development partners to enable speedy and efficient implementation. ADB has ongoing projects in the infrastructure and urban development sector.

7. The overall coordination and administration oversight of the recovery and reconstruction program will be by the program recovery committee (PRC) chaired by the Director General of the Prime Minister's Office. The committee will have four permanent members, the Director Generals of the Ministry of the Prime Minister, of the Ministry of Finance and Economic Management (MFEM), of the Ministry of Foreign Affairs and Trade, and of the Ministry of Infrastructure and Public Utilities (MIPU). All recovery projects will need to have approval by the committee to ensure it is in line with the Ni Vanuatu Resilience Plan (2015). The Department of Strategy, Policy Planning and Aid Coordination forms the secretariat of the committee

8. MFEM will be the executing agency and MIPU will be the implementing agency of the project. A project management unit (PMU) comprising design and supervision consultants (DSC) will be established in MIPU for the design and implementation of the project. The DSC will comprise of international and national consultants. An infrastructure working group (IWG) will be established in MIPU comprising Director General of MIPU, Director, Public Works Department, Operations Manager, Provincial Managers and PWD Engineers. The DSC will directly report to the IWG.

9. The PMU will be led by a team leader/implementation specialist. The DSC will be integrated within MIPU's engineering unit to deliver the project activities. The PMU team leader will coordinate and manage the project activities and report to Director General, MIPU. The PMU will coordinate the project activities with other development partner agencies and within MIPU to ensure there is no duplication of activities in the road sector. MIPU's engineering unit will be strengthened by mobilizing DSC to support the existing technical and managerial capacity. The PMU will be responsible for the detailed assessment, feasibility studies, detailed design, cost estimates, tendering, contract management and supervision and day-to-day implementation, including financial management, monitoring and evaluation. The PMU will use ADB disbursement procedures and financial management guidelines, and will maintain separate accounts for the project, which will be audited by an independent auditor. PMU will be responsible for procurement, financial management, monitoring and evaluation, disbursement and administration of contracts on behalf of MIPU.

10. The implementation arrangements are summarized below.

Project implementation organizations	Management Roles and Responsibilities
• MFEM	Recipient and executing agency Ministry representing for Recipient
• MIPU	Implementing agency Project implementation, procurement, technical and financial management, withdrawal applications, reporting, audited statements

• Project Management Unit (PMU)	Manages and implements the project Ensures implementation of stakeholder engagement plan Supervises and monitors project consultants and contractors Ensures implementation and monitoring of gender activities Prepares the annual work plan and budget Provides annual audited project accounts Ensures compliance with the covenants in the ADB-government grant agreement Compiles quarterly and annual progress reports (physical and financial) Procures services in accordance with government and ADB procedures Prepares withdrawal applications with supporting documentation Ensures Grievance Redress Mechanism is established and in operates effectively Monitors and evaluates (M&E) project implementation. Convenes meetings of the IWG
• PRC and IWG	Provides advice and guidance to the PMU on implementation issues
• Asian Development Bank	Conducts field revision missions, midterm review mission, and project completion review mission to assess project implementation progress and compliance of loan covenants Reviews PMU's submissions for procurement of goods, civil works and services, and provides comments and no objection on the submissions Checks statement of expenditures, and disburses the loan and grant funds as agreed in the Financing Agreement

B. Key Persons Involved in Implementation

Executing Agency

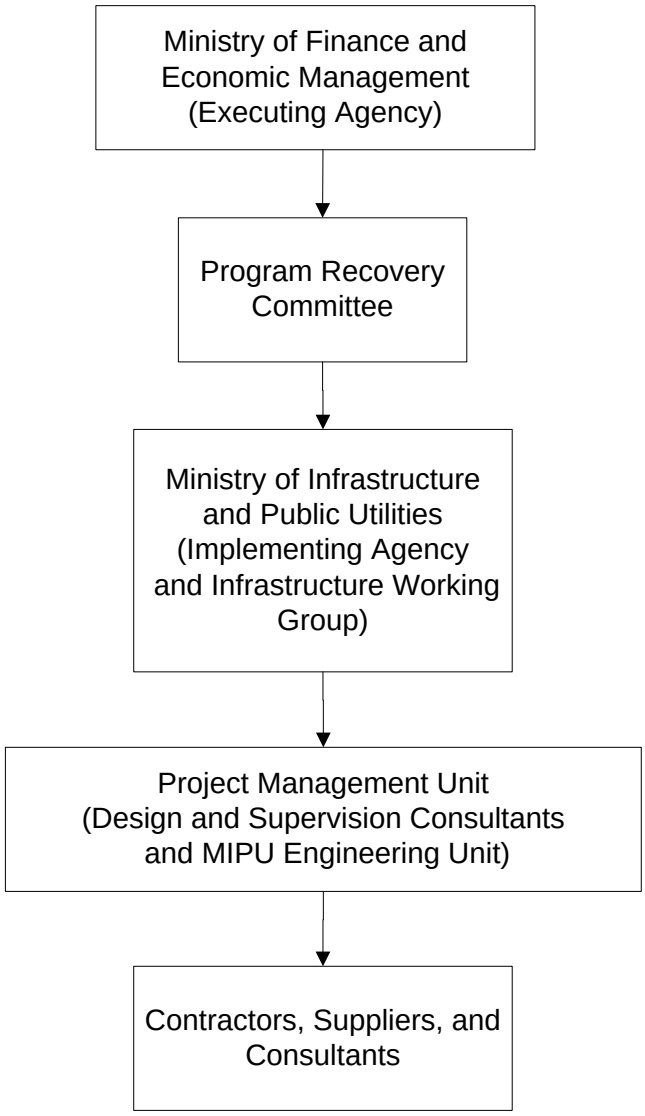
Ministry of Finance and Economic Management	Letlet August Acting Director General +678 33025 laugust@vanuatu.gov.vu PMB 9031, Port Vila, Vanuatu

Implementing Agency

Ministry of Infrastructure and Public Utilities	Sam Namuri Acting Director General +678 22888

	snamuri@vanuatu.gov.vu PMB 9044, Port Vila, Vanuatu
ADB	
Pacific Liaison and Coordination Office	Andrea Iffland Regional Director +61 2 82709444 aiffland@adb.org
Mission Leader	Rishi Adhar Senior Project Officer +61 2 82709444 radhar@adb.org

C. Project Organization Structure



IV. COSTS AND FINANCING

11. The project is estimated to cost $18.50 million (Table1). The government has requested support for rehabilitation and reconstruction for transport sector infrastructure. ADB, through the Disaster Response Facility (DRF), the Asian Development Fund (ADF), and the Global Environment Facility (GEF), will confirm the availability of $1.0 million loan from ADF, $2.81 million loan from DRF, $7.0 million grant from ADF, $2.81 million grant from DRF, and $2.68 million cofinancing grant from GEF, for the reconstruction of roads and bridges damaged by Cyclone Pam. For details of the financing please refer to Table C: Detailed Cost Estimates by Financier (page 12 of this PAM).

12. The government will finance $2.21 million in taxes and duties, office space, counterpart support staff. Details of the cost estimates and the financing plan are shown in Tables A through E.

Table 1: Project Investment Plan

Item		**Amount** ($ million)[a]
A.	**Base Cost**[b]	16.03
B.	**Contingencies**[c]	2.41
C.	**Financing charges during implementation**[d]	0.06
	Total (A+B+C)	**18.50**

[a] Includes $1.91 million in taxes and duties including 12.5% value added tax, financed by the government through exemptions, and $300,000 in audit fees and counterpart staff to be financed in-kind from the government resources.
[b] In mid-2015 prices.
[c] Physical and price contingencies computed at 15% of the total base cost.
[d] Applies only to the loan amount.
Source: Asian Development Bank.

A. Detailed Cost Estimates by Expenditure Category

Item			($ million)[a] Foreign Exchange	Local Currency[b]	Total Cost	% of Total Base Cost
A	**Investment Costs**					
	1	Civil Works	11.01	1.91	12.92	80.60
	2	Consultants				
		a. Design and Construction[c]	2.71	0.00	2.71	16.91
		b. Environmental and Social Mitigation	0.10	0.00	0.10	0.62
	Subtotal (A)		**13.83**	**1.91**	**15.73**	**98.13**
B	**Recurrent Costs**					
	1	Salaries	0.00	0.10	0.10	0.62
	2	Office Accommodation	0.00	0.15	0.15	0.94
	3	Audit Fee	0.00	0.05	0.05	0.31
	Subtotal (B)		**0.00**	**0.30**	**0.30**	**1.87**
	Total Base Costs		**13.82**	**2.21**	**16.03**	**100.00**
C	**Contigencies[d]**					
	1	Physical	1.60	0.00	1.60	9.98
	2	Price	0.81	0.00	0.81	5.05
	Subtotal (C)		**2.41**	**0.00**	**2.41**	**15.03**
D	**Interest During Construction**		0.06	0.00	0.06	0.37
	Subtotal (D)		**0.06**	**0.00**	**0.06**	**0.37**
E	**Total Project Cost (A+B+C+D)**		**16.29**	**2.21**	**18.50**	**115.41**

a Figures may not tally due to rounding.
b Includes taxes and duties of $1.91 million financed by the government through exemptions, and $0.3 million for in-kind contribution for audit fees and counterpart staff.
c Includes vehicles.
d Includes physical contingency at 15% and price contingency using Vanuatu domestic cost escalation factor of 2.0% (2016) and 2.1% (2017).
Source: Asian Development Bank.

B. Allocation and Withdrawal of Loan and Grant Proceeds

Table 2: Withdrawal of ADB (ADF) Loan Proceeds

CATEGORY			ADB FINANCING
Number	Item	Amount Allocated (SDR) Category	Percentage of Total
1	Civil Works	$983,917**	7.30% of total expenditure claimed*
2	Interest	$16,083**	
	TOTAL	**$1,000,000****	

* Exclusive of taxes and duties imposed within the territory of the Beneficiary.
** The amounts are in USD but will be converted to SDR after loan negotiations

Table 3: Withdrawal of ADB (DRF) Loan Proceeds

CATEGORY			ADB FINANCING
Number	Item	Amount Allocated (SDR) Category	Percentage of Total
1	Civil Works	$2,759,968**	20.62% of total expenditure claimed*
2	Interest	$45,032**	
	TOTAL	**$2,805,000****	

* Exclusive of taxes and duties imposed within the territory of the Beneficiary.
**The amounts are in USD but will be converted to SDR after loan negotiations.

Table 4: Withdrawal of ADB (ADF) Grant Proceeds

CATEGORY			ADB FINANCING
Number	Item	Amount Allocated ($) Category	Percentage of Total
1	Civil Works	4,190,000	31.20% of total expenditure claimed*
2	Consulting Services	2,810,000	100% of total expenditure claimed*
	TOTAL	**7,000,000**	

* Exclusive of taxes and duties imposed within the territory of the Beneficiary.

Table 5: Withdrawal of ADB (DRF) Grant Proceeds

CATEGORY			ADB FINANCING
Number	Item	Amount Allocated ($) Category	Percentage of Total
1	Civil Works	2,805,000	20.92% of total expenditure claimed*
	TOTAL	**2,805,000**	

* Exclusive of taxes and duties imposed within the territory of the Beneficiary.

Table 6: Withdrawal of GEF Grant Proceeds

CATEGORY			ADB FINANCING
Number	Item	Amount Allocated ($) Category	Percentage of Total
1	Civil Works	2,680,000	19.96% of total expenditure claimed*
	TOTAL	**2,680,000**	

* Exclusive of taxes and duties imposed within the territory of the Beneficiary.

C. Detailed Cost Estimates by Financier

($ million)[a]

Item	ADF Loan		ADF Grant		DRF Loan		DRF Grant		GEF Grant		GOV of Vanuatu[b]		Total Cost	
	Amount {A1}	% of Cost Category {A1/E}	Amount {A2}	% of Cost Category {A2/E}	Amount {B1}	% of Cost Category {B1/E}	Amount {B2}	% of Cost Category {B3/E}	Amount {C}	% of Cost Category {C/E}	(Taxes and Duties) {D}	{D/E}	E={A1+A2+B1+B2+C+D}	% of Cost Category F={D/18.5}
A. Investment Costs														
1. Civil Works	0.85	6.58%	3.14	24.30%	2.35	18.19%	2.39	18.50%	2.28	17.65%	1.91	14.78%	12.92	69.84%
2. Consultants														
a. Design and Supervision[c]	0.00	0.00%	2.71	100.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	2.71	14.65%
b. Environmental and Social Development	0.00	0.00%	0.10	100.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.10	0.54%
Subtotal (A)	**0.85**	**5.40%**	**5.95**	**37.83%**	**2.35**	**14.94%**	**2.39**	**15.19%**	**2.28**	**14.49%**	**1.91**	**12.14%**	**15.73**	**85.03%**
B. Recurrent Costs														
1. Salaries	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.10	100.00%	0.10	0.54%
2. Office Accommodation	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.15	100.00%	0.15	0.81%
3. Audit Fees	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.05	100.00%	0.05	0.27%
Subtotal (B)	**0.00**	**0.00%**	**0.00**	**0.00%**	**0.00**	**0.00%**	**0.00**	**0.00%**	**0.00**	**0.00%**	**0.30**	**100.00%**	**0.30**	**1.62%**
Total Base Cost	**0.85**	**5.30%**	**5.95**	**37.12%**	**2.35**	**14.66%**	**2.39**	**14.91%**	**2.28**	**14.22%**	**2.21**	**13.79%**	**16.03**	**86.65%**
C. Contingencies[d]	**0.13**	**5.39%**	**1.05**	**43.57%**	**0.42**	**17.22%**	**0.42**	**17.22%**	**0.40**	**16.60%**	**0.00**	**0.00%**	**2.41**	**13.03%**
D. Financing Charges During Implementation	**0.02**	**33.33%**	**0.00**	**0.00%**	**0.04**	**66.67%**	**0.00**	**0.00%**	**0.00**	**0.00%**	**0.00**	**0.00%**	**0.06**	**0.32%**
Total Project Cost (A+B+C+D)	**1.00**	**5.41%**	**7.00**	**37.84%**	**2.81**	**15.16%**	**2.81**	**15.16%**	**2.68**	**14.49%**	**2.21**	**11.95%**	**18.50**	**100.00%**

a Figures may not tally due to rounding.
b Includes taxes and duties of $1.91 million financed by the government through exemptions, and $0.3 million for in-kind contribution for counterpart staff and audit fees.
c Includes vehicles and PMU operating costs.
d Includes physical contingency at 15% and price contingency using Vanuatu domestic cost escalation factor of 2.0% (2016) and 2.1% (2017).
Source: Asian Development Bank.

A. Detailed Cost Estimates by Outputs/Components

Items			Total Cost	($ million)[a] Amount	% of Cost Category
A.	**Investment Costs**[b]				
	1	Civil Works	12.92	12.92	100.00%
	2	Consultants			
		a. Design and Supervision	2.71	2.71	100.00%
		b. Environment and Social Mitigation	0.10	0.10	100.00%
		Subtotal (A)	**15.73**	**15.73**	100.00%
B.	**Recurrent Costs**				
	1	Salaries	0.10	0.10	100.00%
	2	Accommodation	0.15	0.15	100.00%
	3	Audit Fees	0.05	0.05	100.00%
		Subtotal (B)	**0.30**	**0.30**	100.00%
		Total Base Cost	**16.03**	**16.03**	100.00%
C.	**Contingencies**				
	1	Physical[c]	**1.60**	**1.60**	100.00%
	2	Price[d]	**0.81**	**0.81**	100.00%
		Subtotal (C)	**2.41**	**2.41**	100.00%
D.	**Financing Charges During Implementation**[e]				
	1	Interest During Implementation	**0.06**	**0.06**	**100.00%**
		Subtotal (D)	**0.06**	**0.06**	**100.00%**
Total Project Cost (A+B+C+D)			**18.50**	**18.50**	**100.00%**

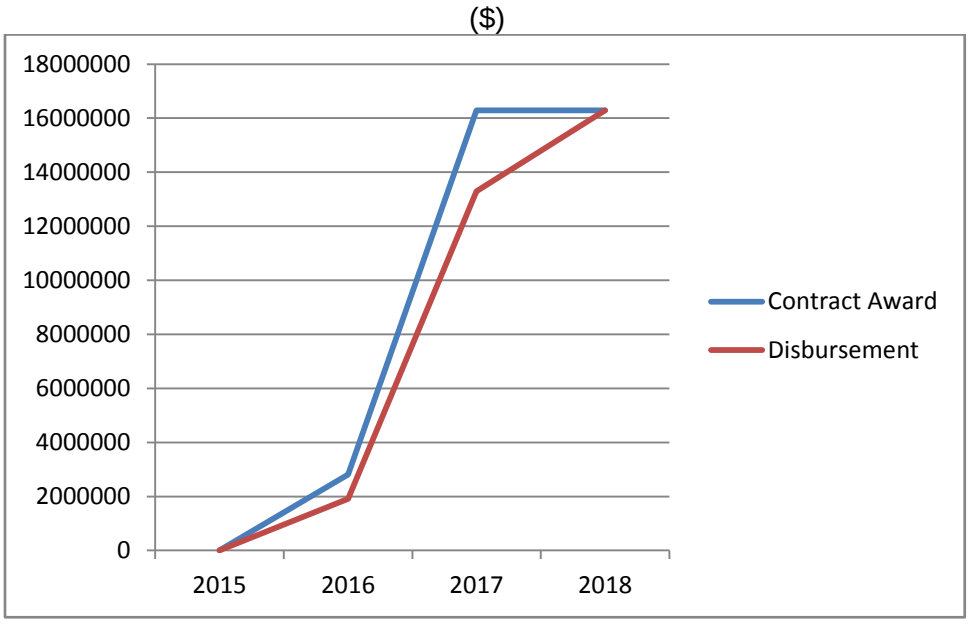
a Figures may not tally due to rounding.
b Includes taxes and duties of $1.91 million financed by the government through exemptions, and $0.3 million for in-kind contribution for counterpart staff and audit fees.
c Includes vehicles and PMU operating costs.
d Includes physical contingency at 15% and price contingency using Vanuatu domestic cost escalation factor of 2.0% (2016) and 2.1% (2017).
Source: Asian Development Bank.

B. Detailed Cost Estimates by Year

Item			2016	2017	2018	Total
			($million)[a]			
A.	**Investment Costs**[b]					
	1	Civil Works	0.00	7.55	5.37	12.92
	2	Consultants				
		a. Project Management[c]	1.35	1.06	0.30	2.71
		b. Environment and Social Mitigation	0.00	0.07	0.03	0.10
		Subtotal (A)	**1.35**	**8.68**	**5.70**	**15.73**
B.	**Recurrent Costs**					
	1	Salaries	0.04	0.04	0.02	0.10
	2	Accommodation	0.06	0.06	0.03	0.15
	3	Audit Fees	0.00	0.02	0.03	0.05
		Subtotal (B)	**0.10**	**0.12**	**0.08**	**0.30**
		Total Base Cost	**1.45**	**8.80**	**5.78**	**16.03**
C.	**Contingencies**[d]		**0.50**	**1.21**	**0.70**	**2.41**
D.	**Financing Charges During Implementation**		**0.0**	**0.04**	**0.02**	**0.06**
	Total Project Cost (A+B+C+D)		**1.95**	**10.05**	**6.50**	**18.50**
	% Total Project Cost		**10.54%**	**54.32%**	**35.14%**	**100.00%**

a Figures may not tally due to rounding.
b Includes taxes and duties of $1.91 million financed by the government through exemptions, and $0.3 million for in-kind contribution for counterpart staff and audit fees.
c Includes vehicles and PMU operating costs.
d Includes physical contingency at 15% and price contingency using Vanuatu domestic cost escalation factor of 2.0% (2016) and 2.1% (2017).
Source: Asian Development Bank.

C. Contract and Disbursement S-curve (ADB only)

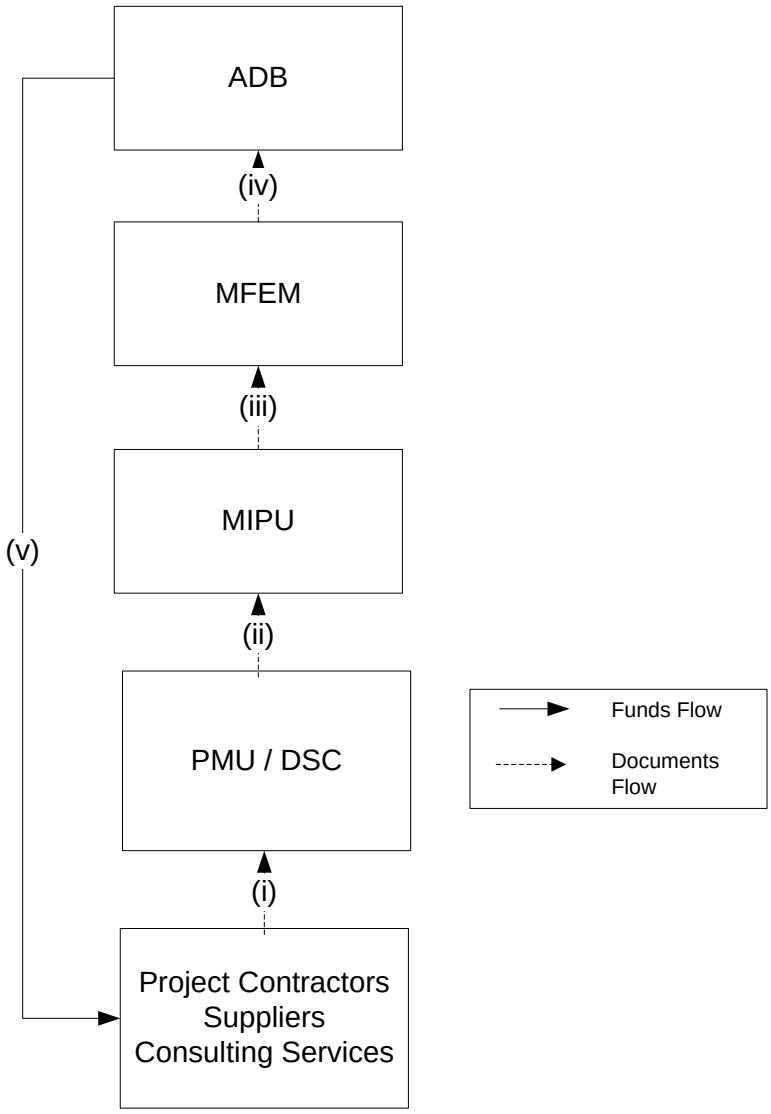


Cumulative ($)

Items	2016	2017	2018
Contract Award	2,810,000	16,230,000	16,230,000
Disbursement	1,910,000	13,290,000	16,290,000

Source: Asian Development Bank estimates.

D. Fund Flow Diagram



Direct Payment Procedure:
(i) The project contractor/supplier/consultant issues an invoice.
(ii) PMU/DSC prepares withdrawal applications and submits to MIPU.
(iii) MIPU reviews the claim, and prepares the withdrawal application for MFEM's endorsement.
(iv) MFEM endorses and sends the withdrawal application to ADB.
(v) ADB makes the direct payment to consultant/contractor.

ADB = Asian Development Bank, DSC = design and supervision consultants, MFEM = Ministry of Finance and Economic Management, MIPU = Ministry of Infrastructure and Public Utilities, PMU = project management unit.
Source: Asian Development Bank.

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

13. MIPU in the past has implemented a number of ADB financed projects through various PMUs. The government is implementing a number of externally funded projects.[4] The accounting and bookkeeping of all these projects are through various PMUs and are centrally monitored and kept by the Vanuatu Project Management Unit and the Department of Finance and Treasury of MFEM. Both MIPU and MFEM have been involved in financial management of projects, accounting, financial reporting and audit and have gradually built their capacity.

14. A financial management assessment of the executing and implementing agencies was conducted for the proposed for projects (footnote 4).[5] The overall fiduciary risk was rated as moderate and remains manageable and will be further mitigated by the provision of a dedicated full-time qualified accountant to the PMU. A financial management specialist has been included in the DSC to carry out the financial due diligence including conducting financial analyses of the executing and implementing agencies, and incremental recurrent costs, to determine financial sustainability, and reviewing proposed cost-recovery and tariff policies, including affordability. A financial management action plan will be developed prior to inception mission.

15. An asset management plan will be prepared by DSC projecting expenditures over a 5-year period for the sustainability of Efate ring road. The procurement capacity assessment of MIPU was conducted for the projects in footnote 4 and identified lack of procurement capacity within MIPU. A procurement specialist will be provided through the DSC to undertake the project's procurement requirements. During project implementation, capacity development will also be provided by the procurement specialist to strengthen the capacity of MIPU in procurement.

B. Disbursement

16. The loan and grant proceeds will be disbursed in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time),[6] and detailed arrangements agreed upon between the Government and ADB. Online training for executing and implementing agencies staff on disbursement policies and procedures is available at: http://wpqr4.adb.org/disbursement_elearning. Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

17. Direct payment procedure of the loans and grants proceeds will generally be used for payments of the design and supervision consultants and civil works contracts (subject to the minimum WA amount). The PMU will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents,

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[4] ADB. 1996. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance to Republic of Vanuatu for the Urban Infrastructure Project.* Manila. ADB. 2011. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Administration of Grant to Republic of Vanuatu for the Interisland Shipping Project*. Manila. ADB. 2015. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Administration of Grant for Additional Financing to Republic of Vanuatu for the Interisland Shipping Project*. Manila. ADB. 2011. *Report and Recommendation of the President to the Board of Directors for the Proposed Loan and Administration of Grant to Republic of Vanuatu for the Port Vila Urban Development Project*. Manila.

[5] Financial Management Assessment (accessible from the list of linked documents in Appendix 2 of the RRP).

[6] Available at: http://www.adb.org/Documents/Handbooks/Loan_Disbursement/loan-disbursement-final.pdf

(iii) checking invoice of consultants against project progress, and (iv) preparing and sending withdrawal applications through MFEM (for approval) to ADB.

18. Before the submission of the first withdrawal application, the recipient should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US$50,000 equivalent. Individual payments below this amount should be paid by the EA/IA and subsequently claimed from ADB through reimbursement, unless otherwise accepted by ADB.

C. Accounting

19. PMU and MFEM will maintain, or cause to be maintained separate project accounts and records by funding source for all expenditures incurred on the project following International Public Sector Accounting Standards for cash based accounting and the government's financial regulations. MFEM will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations which are consistent with international accounting principles and practices.

D. Auditing

20. MFEM will cause the detailed consolidated project financial statements to be audited in accordance with International Standards on Auditing, by an independent auditor whose qualifications, experience and terms of reference are acceptable to ADB. The audited project financial statements together with the auditor's opinion will be submitted in the English language to ADB within six months of the end of the fiscal year by MFEM.

21. The annual audit report for the project accounts will include an audit management letter and audit opinions (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether the loan and grant proceeds were used only for the purposes of the project; and (iii) the level of compliance for each financial covenant contained in the legal agreements for the project

22. The government, MFEM and MIPU have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.[7] ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the recipient), or for additional support to be provided to the auditor, of the audits required are not conducted in a manner satisfactory to ADB, or the audits

[7] ADB approach and procedures regarding delayed submission of audited project financial statements:

- When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six months, requests for new contract awards and disbursement such as processing of new reimbursement, and issuance of new commitment letters will not be processed.
- When audited project financial statements have not been received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as processing of new reimbursement, and issuance of new commitment letters. ADB will (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan.

are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

23. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal project supervision, and followed up regularly with all concerned, including the external auditor. MIPU through PMU will ensure that unaudited project financial statements are provided in time to the Auditor General's Office, no later than four months after the end of the fiscal year.

24. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).[8] After review, ADB in consultation with MFEM will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The audit management letter and entity level financial statements will not be disclosed.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting

25. The project's procurement classification is attached as Appendix 3. All advance contracting will be undertaken in conformity with ADB's Procurement Guidelines (April 2015, as amended from time to time) (ADB's Procurement Guidelines)[9] and ADB's Guidelines on the Use of Consultants (March 2013, as amended from time to time).[10] The issuance of invitations to bid under advance contracting will be subject to ADB approval. The government has been advised that approval of advance contracting does not commit ADB to finance the Project. Advance contracting is recommended for the recruitment of the design and supervision consultants. To expedite recruitment of the consultants, ADB in consultation with the government will recruit the consultants.

B. Procurement of Goods, Works and Consulting Services

26. All procurement of goods and works, and recruitment of consulting services will be undertaken in accordance with the simplified and expedient procedures permitted under ADB's Disaster Emergency Assistance Policy (2004), Procurement Guidelines (April 2015, as amended from time to time), and Guidelines on the Use of Consultants (March 2013, as amended from time to time). As a general principle, the project's approach to procurement of works and consulting services will be in line with Procurement Guidelines para 3.18, which reads as follows:

> **Procurement under Disaster and Emergency Assistance**. *"Procurement of goods and works under disaster and emergency assistance shall incorporate greater flexibility. International competitive bidding (ICB) requirements will be relaxed in favor of national competitive bidding (NCB) with an abbreviated bidding period. Limited international bidding (LIB) will be the norm for procurement of goods with minimum bidding periods ranging from one to two weeks. Direct contracting to contractors and suppliers under existing loans or*

[8] Available from http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications.
[9] Available at: http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf
[10] Available at: http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf

grants will be allowed for new contracts, with rates negotiated around those in effect for the existing contract with adjustments as required for inflation and physical considerations. Similarly, contractors and suppliers competitively selected under projects financed by other donors will be considered for direct contracting for new ADB-financed contracts."

27. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages is in Section C. The consulting firm will be recruited through QCBS selection (90:10) for the design and supervision of the project. LIB or direct contracting will be used for the procurement of the two civil works contracts. Since the project will be completed within 2 years, recruitment and mobilization of consultants will be done expeditiously with the option of reduced proposal submission period of 15 days, for expressions of interest and for requests for proposals. ADB in consultation with the government will recruit the consultants.

C. Procurement Plan

1. A. Methods, Thresholds, Review and 18-Month Procurement Plan

a. Procurement and Consulting Methods and Thresholds

28. Except as the ADB may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	**Threshold**	**Comments**
Limited International Competitive Bidding or Direct Contracting for Works[11]	$ 1,000,000 and Above	
National Competitive Bidding for Works	Below $ 1,000,000	
Shopping for Goods	Up to $ 99,999	

Consulting Services	
Method	**Comments**
QCBS	90:10

b. Goods and Works Contracts Estimated to Cost $1 Million or More

29. The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package number	General Description	Estimated Value	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
01	Civil Works— Reconstruction of roads and bridges	$9,000,000	LIB or Direct Contracting	Prior	1S1E	Q4 2016	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document:

[11] In 2013, ADB's Board of Directors approved a blanket waiver of the member country procurement eligibility restrictions applicable to operations financed by the Asian Development Fund and to operations financed from ADB-administered cofinancing resources in all cases. The blanket waiver and universal procurement apply, regardless of whether ADB fully or partially administers the cofinancing resources.

02	Civil Works— Klems hill landslide and drainage improvement	$2,000,000	LIB or Direct Contracting	Prior	1S1E	Q3 2016	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document:

c. Consulting Services Contracts Estimated to Cost $100,000 or More

30. The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package number	General Description	Estimated Value	Recruitment Method	Review (Prior/Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
03	Design and supervision consultant	$2,810,000	QCBS (90:10)	Prior	Q4 2015	STP	Assignment: International and national

D. Consultant's Terms of Reference

1. Design and Supervision Consultant

31. The international consulting firm in association with national consulting firms will be integrated into the engineering unit of Public Works Department (PWD) within MIPU to design and implement the project. The design and supervision consultant (DSC), consisting of international and national specialists, will be engaged by ADB in consultation with government agencies to will provide consultancy services. The firm is encouraged to include female specialists in the DSC team (30% women in the team) to meet sex disaggregated targets and assist in design and implementation of gender activities under the project. PWD assisted by DSC will be responsible for feasibility study, design and day-to-day implementation, financial management, and monitoring and evaluation of the project. The Director of PWD assisted by consultants will oversee the overall implementation of the project. The team leader (TL) assisted by international and national consultants and PWD's technical, financial, administration and clerical staff will carry out the day-to-day implementation of the project. Office space during the design and construction phases will be provided by MIPU.

32. The DSC will carry out the feasibility studies, detailed engineering designs, procurement and contract management and supervision of the works. The feasibility studies will include technical engineering, economic analysis, safeguards assessments, climate change adaptation and disaster risk management including option analysis of both technical and economic including estimate costs for building back better of the damaged infrastructure.

2. Outputs and Scope of Services

33. There will be only one output: transport infrastructure in damaged locations on Efate ring road reconstructed, and climate and disaster-proofed. The tentative list of civil works are (i) approximately 10 km of road rehabilitated; (ii) about 8 major stream crossings[12] and their

[12] The bridges include Mele, Prima Bridge, Creek Ai, Marona, Lamin, Malatia, Pangpang, and Rentapau. The Japan Agency for International Corporation is considering the rehabilitation of Teouma bridge as it was constructed by them after 2001 earthquake.

approach roads rehabilitated and protected; (iii) about 9 bridges[13] or box culverts and causeways repaired for minor damages and debris cleared; (iv) 200 m meters of river channel realigned at upstream and downstream and river training structures constructed; (v) 800m meters of sealed pavement protected against erosion from storm surges; (vi) 10 km of road side and cross road drainage improved; (vii) 6 culvert headwalls reconstructed; (viii) 250 m of guard rail reconstructed; (ix) 180 m of river banks protected; (x) 100 m by 50 m of land slide at Klems hill reinstated and road pavement protected; and (xi) approximately 600 m long concrete longitudinal road side drain by Klems hill improved. These are indicative list and may increase during detailed assessment. All the measurements are estimates and are subject to confirmation during topographical and bathymetrical surveys during implementation. All works will incorporate gender sensitive designs including, where relevant, construction of walkways and provision of laundry facilities in streams alongside the road.

34. The scope of services of the DSC will include but not necessarily be limited to the following:

(i) Review and verify all available primary and secondary data collected and published in the various other assessment reports carried out to determine the extent of damage caused by TC Pam. Some of these reports include: (i) the Impact Assessment Report on Efate and Epi Islands Transport Infrastructure prepared by the Pacific Regional Infrastructure Facility (PRIF) consultants; (ii) the Post Disaster Needs Assessment led by government and assisted by development partners; and (iii) the NZ Civil Core Assessment of Ambrym Airports report;

(ii) Carry out feasibility studies including all the required engineering surveys and investigations such as topographical surveys,[14] geo-technical investigation,[15] construction material survey,[16] ground water investigation i.e. hydro-geological investigations, rainfall data collection, hydraulics and hydrology surveys, identification of underground utilities, etc. as applicable to the project. All surveys and investigations shall be accurate and plotted for the review of the PWD and ADB. The feasibility studies will include safeguards assessments following the environmental assessment and review framework (EARF) and resettlement framework (RF) prepared for the project;

(iii) Prepare detailed work plan, progress reports and implementation schedule for the project to ensure effective monitoring and timely project outputs, and regularly update the same;

(iv) Prepare the engineering designs of the project in sufficient detail to ensure clarity and understanding by the PWD, contractors and other relevant stakeholders. All the design should be in conformity with internationally recognized standards;

(v) The detailed designs will, as a minimum, include construction tender level drawings, detailed cost estimates, necessary calculations to determine and justify

[13] The bridges include Eton Dry Creek, Eton Beach, La Cressonnaire, Havana, Tanoliu, Sara, Epule, Epau and Neslep.

[14] The firms will include these items in their technical and financial proposals to expedite the design phase of the project.

[15] There is no drilling equipment in the country but there is a Soils Laboratory and PWD has the services of an international expert undertaking geotechnical investigations. Efate ring road was built under the Millennium Challenge Account from 2006-20011. PWD has As Built engineering drawings on several bridges which have been damaged and would be made available to DSC. The DSC will require subcontracting geotechnical investigations, topographical surveys, AUTO CAD drafting works, traffic counts at damaged locations and education awareness on HIV/AIDS and STIs. Estimates for these services are included in the DSC's budget.

[16] There are several sources of materials that were identified under past projects and the current ongoing projects which could be easily identified.

the engineering details for project, associated contract documentation to include letter of invitation, conditions of contract, condition of particular applications, detailed specifications, engineering drawings, bill of quantities (BOQ), implementation schedule, and any other relevant detail necessary for effective project implementation. The technical specifications should be in accordance with the relevant PWD specification or the best international practices and should be prepared to achieve the highest standards of quality. For adopting market rates for the detailed cost estimates, proper current market rate/prices analysis should be carried out. Construction drawings should be prepared with sufficient details to permit contractors to carry out construction work effectively, unambiguously and with the highest standards of quality;

(vi) The design shall be prepared in close consultation with, and to meet the requirements of the program recovery committee (PRC) and PWD, and will be incorporated into a detailed design report to be submitted for approval of ADB;

(vii) Prepare Quality Assurance and Quality Control (QA & QC) Plans and Safety Manuals to be followed on the respective construction sites so as to enforce adequate QA and QC, and safety of construction workers, engineers and citizens;

(viii) Review existing contract administration guidelines and assist if necessary to improve for the use of the PWD, for its day-to-day contract administration requirements such as measurement of works; certification and payment of contractors' bills, release of retention money; approval of variation, time extension and contractors' claim, issue of completion certificate, financial closure of contract; management during the Defects Notification Period (DNP) and any other contract administration requirement;

(ix) Prepare the standard construction management system to be followed by contractors at construction sites comprising important components such as planning of activities (work plan), procurement of construction material and equipment; construction methodology; environmental management, quality management, social interaction including gender awareness, grievance resolution and community liaison, health and safety including STI/HIV/AIDS awareness, deployment of construction machinery, deployment of workers, deployment of funds, etc.; and implement the same;

(x) Support the PWD in preparation of bid documents using standard bidding documents and specific requirements (specification) of each project components if applicable, with due consideration to the ADB International Competitive Bidding (ICB) requirement and FIDIC[17] Conditions of Contract for Construction – Multilateral Development Bank Harmonized Edition June 2010. The bid documents will include the environmental management plan(s) from the approved environmental assessment(s) which have been updated based on detailed design;

(xi) Assist the PWD in issuing invitation for bids, addendum/corrigendum, and clarifications to the bidders' queries, pre-bid meeting/s, receiving of bids and evaluation, award of contract, signing of contract and compilation of the signed contract documents including construction drawings. Assist the PWD in reviewing and approving the contractor's construction EMP (CEMP) prior to commencement of physical works;

[17] *Federacion Internacional de Ingenieros Consultores* or International Federation of Consulting Engineers

(xii) Assist PWD in assessing compliance of contract specific bank guarantees, insurances and advise PWD on the expiry, renewal and forfeiting of the same when and where necessary;
(xiii) Assess contractor's interim payment certificates and forward to PWD and ADB for payment along with required supporting documents;
(xiv) Assist the PWD to set the indicators for the baseline on the project and to carry out the necessary tasks identified in the Project Administration Manual (PAM) for the Project;
(xv) Carryout financial due diligence including a general financial management capacity assessment of the MFEM and MIPU, and also an assessment of incremental recurrent cost financing capacity of the EA for maintaining the project roads in good working order for its economic life; and
(xvi) Carryout any other project-related services as deemed necessary and required by MIPU.

3. Design and Supervision Consultant Team

35. The Government of Vanuatu has taken a loan and grant from the ADB to the amount of $16.29 million. Proceeds from this loan and grant will be used to finance the DSC. Key positions of the DSC are to be sourced from fulltime time employees of the firm.[18]

36. The terms of reference (TOR) for the individual team members shall be read in conjunction with the TOR for the DSC. Each team member shall support the overall goal of the project. The DSC shall consist of 179.75 person-months (81.75 pm of international and 98 pm of national) consultants. The design phase includes (i) subproject screening and prioritization (ii) feasibility studies (technical engineering, economic analysis, environment and social safeguards (including gender-sensitive community consultation), climate change adaptation and disaster risk management, hydrology) including option analysis of both technical and economical including costs for building back better of the damaged infrastructure; (iii) geotechnical investigations, topographical surveys and traffic counts, (iv) detailed engineering designs and specifications, (v) preparation of bidding documents using ADB standard bidding documents and government's procurement document subject to review and assessment, BOQ; and procurement of civil works, related goods and services and equipment. As part of detailed designs the firms are encouraged to include in their technical and financial proposals joint venture or association with national firms for design activities that will provide services for geotechnical investigations and soil condition analysis, topographical and bathymetry surveys, drafting of engineering drawings or AutoCAD services and traffic count surveys.

4. Design Phase

a. Detailed design of road, bridge and other structures

37. The road design, if required should follow the PWD standard for road designs or any other internationally recognized road design standard approved by PWD.

38. To improve climate resilience, all of the existing bridges and wet crossings will require climate and disaster proofing or 'build back better' options. Therefore, detailed design of bridges

[18] The team leader, procurement specialist, hydraulic and hydrology engineer, deputy team leader/resident and contract engineer, construction engineering superintendent are major key positions that preferably needs to be provided by the firm.

is an important component of this consultancy service. The design should be safe, reliable and cost effective with maximum use of appropriate technology. The type, feature and condition of existing bridges and the type of failure sustained should be given due consideration while designing the replacement structure.

39. The exact location, type and general features of the replacement structures where necessary should be based on the following factors:

(i) Suitability to the road alignment
(ii) Type, size, span of existing bridge
(iii) Present condition and general features of the existing bridge
(iv) Topography and location of bridges
(v) Nature and structure of the soil underneath
(vi) Road users and pedestrians expectations, road furniture, public aspirations (possibilities of being a landmark or tourist attraction structure)

40. Specific attention shall be given to the design for the restoration of Klem's Hill to include slope stability assessment, option analysis, climate proofing analysis, economic analysis and detail engineering design. Final decision on the recommended options for treatment shall be made after discussion with the PRC, PWD and the ADB.

b. Details of surveys and studies

1. Topographical survey and mapping

41. The topographical survey shall collect adequate data to show the following details in the subsequent topographical map:

(i) Topography with details such as: trees, water bodies, existing infrastructures and other land features;
(ii) Existing road details such as: formation width, paved area, access roads, bus bays, footpath, parking places, traffic signs, islands, signals and road reserve limits;
(iii) Details of existing cross-drainage structure details such as: length, width and heights of culverts, bridges, details about bridge spans, pier, abutment, railing and vertical clearances, existing access under the bridge, river training works and river bank structure details;
(iv) Existing power line details such as: high-tension poles, low-tension poles, transformers, sub stations, Streetlights poles, underground electrical supply (if any) etc;
(v) Existing telecommunication details such as: telephone lines, poles, cabinets, towers and underground lines (if any);
(vi) Existing water supply line details such as: supply mains, distribution lines, valves, valve chambers, underground water storage, fire hydrants, etc;
(vii) Existing sewer line details such as: trunk sewers, branches, manholes, location/position of septic tank and soak pit of the adjacent building on the both sides of road within the road reserve;
(viii) Existing buildings details such as: religious shrines, governmental building, residential building, type of foundation and tentative depth of foundation of the building;
(ix) Production of a map of 100 m wide road corridor in 1:500 scale and with 0.2 m contour interval.

42. The consultant shall acquire the reference coordinate points from the Ministry of Lands, and referencing of all the survey works shall be made on these references. It should establish benchmarks at a distance of every 100 m along the road and on both sides of the riverbanks in case of bridges.

43. While conducting the topographical survey for bridge design, the survey area should cover a minimum distance of 500 m upstream (u/s), 200 m downstream (d/s) and 100 m from the river banks on either sides of the river at the proposed bridge site. In case of the topographical survey of the bridge site, the topographic map should show the following:

(i) Contours at 0.20 m intervals;
(ii) Flood lines on either sides of the river in the entire area surveyed;
(iii) Both banks of the river;
(iv) River cross section at 25 m intervals;
(v) Details of government and/or public establishments on the river banks, details of existing river training works (if any);
(vi) Traverse lines, benchmarks reference lines and/or points with respect to which the present topographical map is prepared;
(vii) The angle and direction of skew, if the bridge is proposed to be aligned skew;
(viii) The foundation type and zone of influence of the existing foundation of the bridge or any other structures adjacent to the proposed bridge site; and
(ix) Other information relevant to design, construction and/or maintenance of the bridges

2. Hydrological and bathymetry survey

44. For determination of all design data the consultant shall carry out a detailed hydrological survey and study of the river and bridge site, which shall include the following:

(i) Catchment area of the river up to bridge site;
(ii) Nature, size and quantities of debris carried by the river;
(iii) Intensity, duration and distribution of rainfall in the catchment;
(iv) Existing bridge or other hydraulic structures across the river in the vicinity of the proposed bridge site with their details as much as possible including details of depth of rivers and streams;
(v) General slope of the river from the critical point (origin) of the river up to bridge site and general slope of the catchment in both sides of the river;
(vi) Cross sections covering 100 m on either side. Beyond flood lines of the river at proposed bridge site, at about 500 m. u/s and about 200 m d/s. wherein highest flood level (HFL) and lowest water level (LWL), area of the cross section, wetted perimeter and geological profile with silt factor of each strata (at proposed bridge site only) shall be indicated. (Horizontal and vertical scale of the cross section shall be the same.);
(vii) Bed slope of the river which must start from 100 m up of the up-stream cross section and end at 100 m down of the downstream cross section;
(viii) Maximum discharge calculated by established formulas with different return periods and the peak discharge observed over a period of 100 years;
(ix) Velocity and depth of flow at the time of survey;
(x) Historical shifting of the river at proposed bridge site and in its vicinity; and
(xi) Other information required for river control, design, construction and maintenance of the bridge

45. The hydrological survey shall collect secondary data, preferably from the governmental sources, to determine the following:

(i) Unit hydrograph for the catchment of river(s)/stream(s) for bridge construction
(ii) Size of the opening and location of cross drainage structure
(iii) Minimize modification to the natural drainage pattern
(iv) Determine the HFL for more than 100 years return period and design appropriate river training structure along the river banks

46. After the selection of the proposed bridge sites with alternatives and preparation of topographic maps, the Consultant shall discuss the collected hydrological and other data and decide the following points with PWD and ADB for final decision of the bridge site:

(i) design discharge
(ii) scour depth, maximum scour depth
(iii) linear waterway needed to be provided
(iv) anticipated soil condition for foundation
(v) the most feasible proposed bridge site
(vi) river training and approach roads protection
(vii) type of proposed foundation, substructure and superstructure
(viii) Span of the bridge and number of piers
(ix) Number of traffic lanes
(x) Pedestrian walkway
(xi) Clearance of the bridge (for traffic) if applicable

3. Traffic counting at critical points / intersections and at damaged locations

47. The following primary traffic data shall be collected to assist in the design of bridges, road sections and intersections where necessary and to help with the computation of the economic analysis for the project:

(i) traffic volume with modal split from each direction to each destination and major junctions
(ii) counting for 24 hours on a working day
(iii) counting of pedestrian for 24 hours on a working day
(iv) tabulation of the data

48. Based upon the above mentioned studies and investigations the consultants shall make the best use of their technical know-how and professional skill to arrive at conclusion and recommend the most cost effective design parameters. The consultant shall discuss in detail all possible options and shall recommend the most appropriate option with highest economic rate of return.

4. Geotechnical Investigations

49. As there is no drilling equipment in Vanuatu, the DSC will subcontract geotechnical investigation services to a recognized and experienced firm for geotechnical investigations. The firm will conduct geotechnical field investigations at damaged bridge sites including the land slide at Klems Hill ascertaining the depth of hard rock layer including extraction of soil samples and recording of borehole logs.[19] The firm will carry out laboratory tests of sample materials and

[19] Pacific Region Infrastructure Facility. 2015. Scoping Study for Klems Hill Land Slide and Drainage Improvement. Sydney

provide information of the design of the bridges, stabilization of the land slip and protection works. The firm will also contribute engineering design options for bridges, drainage and stabilization of slip. The DSC will prepare the detailed TOR for these services work the works required in footnote 8 as well for the bridges in footnote 1.

5. Miscellaneous surveys and studies/investigations

50. If not covered by aforesaid, DSC shall perform other studies, explorations, tests surveys, calculations, etc. required to produce full and complete set of working drawings, specifications, bills of quantities, requirement of materials and complete cost estimates for the selected sub-projects. DSC will also engage and pay for an approved service provider which could be NGO/CSO for STI/HIV/AIDS education awareness and prevention campaigns and prepare and support implementation of the project's community participation plan and gender action plan as necessary. The DSC will prepare the detailed TOR for these services. All resettlement and community consultation meetings will involve women and will be conducted by both male and female facilitators (at least 40% of participants are women and 50% female facilitators).

51. The payments for surveys, investigations and studies will be paid through respective items in the DSC budget. Consulting firm is required to include the cost for all the surveys and studies including traffic counts mentioned herein. MIPU and ADB may request detailed estimates for each survey and study during contract negotiations.

c. Details of design works

1. Design of Pavement

52. While designing the pavements, the consultant shall:

(i) Maximize the use of existing pavement layers (scrapping only in case of strength deficiency)
(ii) Design of sub-grade, sub-base, and base layers for each 100 m interval or where the sub-surface condition/traffic volume changes
(iii) Design for 8 Tonne axle load
(iv) Design shall consider the AADT data which needs to be collected by the consultant at the particular junctions/road sections, direct traffic counting at critical junctions
(v) Design of the pavement for the footpath where necessary
(vi) Design of concrete pavement at the bus-bays lots where necessary
(vii) Design of pavement on the bridges and approach roads
(viii) Design the pavement taking account of design specifications of the pavement under existing road built under the Millennium Challenge Account project.

2. Design of Drainage Structures

53. While designing the drainage structures, the Consultant shall use the data collected during the hydrological survey and determine the following:

(i) Type of the cross-drainage structure
(ii) Structural design of slab and box culverts
(iii) Size and location of road-side drainage and cross drainage structures (appropriate side drains and cross drainages such as pipe culverts)
(iv) Design of the water conduit/rain water inlets/manholes to take storm water safely to the nearby natural stream

(v) Maximize the use of the existing structures

3. Design of Bridges

54. Based on the collected information and results of the discussions mentioned above the DSC shall design the bridges following acceptable international standard codes of practice, norms and guidelines approved by MIPU. In addition, the designer shall take into considerations the general aesthetics and architectural perspectives of the bridges to be designed. The Consultant shall produce detailed quantity estimate of the bridges and its accessories. They shall collect information on sources of materials and their lead distances and prepare rate schedules and cost estimates based on the standard norms and prevailing rates.

55. The designer shall refer to the following related specifications or equivalent BS or IS Codes: (i) AASHTO LRFD Bridge Design Specifications; and (ii) PNG Road and Bridge Design Standards or any other standards used by MIPU.

d. Details of Construction Phase

56. For the construction phase, the scope of services of the DSC financed under the project will include but not necessarily be limited to the following:

(i) Regularly undertake project site inspections, oversee contractor's works and guide the contractors on the activities and works, and provide concrete suggestions to the PWD for improvement if required;
(ii) Undertake quality assurance tests on pavement materials and structural materials used in construction for compliance with specifications and standards;
(iii) Regularly monitor contractor's environmental management plans on the subprojects; and
(iv) Provide all necessary support to the PWD in communicating with and monthly reporting to all relevant authorities such as the ADB, relevant ministries and government bodies, and all other relevant stakeholders as required by the MIPU.

e. Inputs and Outputs of the DSC Team

57. The DSC team will provide inputs to and outputs from both the design and construction phases of the project. Prior to the issuance of Request for Proposal, a thorough review of the TOR of the experts has been conducted to make clear distinction between the inputs/outputs financed through the proposed grant/loan. The following experts with their terms of reference have been identified for the DSC team for the activities

58. **Inputs for design phase**. For the design phase the DSC team will provide 74.75 pm (international 36.75 pm and national 38 pm) as follows: The international experts for team leader (TL) (10 pm), Procurement Specialist (4 pm), Bridge/Structural Design Engineer (4 pm), Road and Pavement Design Engineer (4 pm), Quantity Surveyor/Estimator (0.75 pm), Financial Management Specialist (1 pm), Hydrology/Hydraulics Engineer (3 pm), Transport Economist (2 pm), Climate Change/Disaster Risk Management Specialist (3 pm), Environmental Safeguard Specialist (1 pm), Social Safeguards/Resettlement Specialist (2 pm), Monitoring and Evaluation (M&E) Specialist (2 pm). The national experts in the DSC for design activities will include M&E Specialist (2 pm), Safeguard Specialist (1 pm), Social Development, Community Consultation and Gender Specialist (5 pm), Accountant (15 pm), and Office Administrator Officer/Accounts Clerk (15 pm).

59. **Outputs of design phase**. The DSC shall produce the following outputs for the design phase:

(i) Inception report within 4 weeks of the fielding of DSC;
(ii) Brief monthly progress reports and quarterly progress reports, in an agreed format between PWD and ADB, submitted within 1 month of the end of the quarter;
(iii) Subproject feasibility study including technical, economics, safeguards assessments, climate change adaptation and disaster risk management/ plans and/or reports, and prioritize subprojects within 16 weeks of fielding of the DSC;
(iv) Community participation plan (based on the stakeholder engagement plan included in the project's project administration manual) and gender activities (within 12 weeks from the date of fielding of the DSC);
(v) Topographical surveys, traffic surveys, geotechnical investigations within 8-12 weeks from the date of fielding of the DSC;
(vi) Detailed engineering designs on build back better principles, technical specifications, BOQs, cost estimates, and environmental management and monitoring plans for all civil works under the civil works component within 32 weeks of the fielding of DSC;
(vii) National contractor capacity assessment within 8 weeks of the fielding of DSC;
(viii) Bid document preparation, bidding, bid evaluation reports (technical and financial, if required) for all proposed civil works contracts within 44 weeks of the fielding of the DSC; and
(ix) Completion of contract signing and contractor mobilization activities within 52 weeks of the fielding of DSC.

60. **Inputs to construction phase**. The DSC team for construction phase activities shall consist of 90 pm (international 42 pm and national 48 pm) as follows: TL (8 pm), Deputy TL/Resident/Contract Engineer (15 pm), Construction Engineering Superintendent (15 pm), M&E Specialist (1 pm) and Environmental Safeguard Specialist (3 pm). The national experts in the DSC for implementation phase activities will include Social Development, Community Consultation and Gender Specialist (8 pm), Safeguard Specialist (7 pm), M&E Specialist (3 pm) and Project Accountant (15 pm) and Office Administrator Officer/Accounts Clerk (15 pm).

61. **Outputs of construction phase**. The DSC shall produce the following outputs for the construction phase:

(i) Mobilization of contractor for major civil works within two months after contract signing;
(ii) Provide to MIPU /PWD and ADB detailed project performance monitoring system (PPMS) including detailed indicators;
(iii) Implementation of the community participation plan, gender activities, and monitoring of contractor compliance with the approved construction environmental monitoring plan (CEMP);
(iv) Brief monthly and quarterly project progress reports and quarterly progress reports in an agreed format between PWD and ADB, submitted within 1 month of the end of the quarter;
(v) Supervise construction works carried out by the contractor/s in accordance with contract specifications and FIDIC conditions of contract;
(vi) Six-monthly safeguard monitoring reports submitted to ADB;
(vii) Assess contractor's claims and prepare and submit interim and final payment certificates to MIPU and ADB for payment together with necessary supporting documents.

(viii) Draft project completion report in an agreed format 3 months after physical completion of the project;
(ix) Update/revise and provide PWD "As Built Drawings" under the scope of works; and
(x) Final project completion report 1 month after receiving the comments on the draft final report from the government and ADB.

f. DSC Team Composition and Terms of Reference

a. Team Leader/Civil Engineer – Key Position (international, design phase 10 pm and construction phase 8 pm, intermittent)

62. **Design phase inputs**. The Team leader (TL) will report directly to the Director PWD. S/he is responsible for the overall management of the DSC team and the project ensuring clear outputs of feasibility studies, detailed engineering design and construction supervision of activities including (i) initial assessment of subprojects (ii) feasibility assessment, (iii) engineering assessment, (iv) economic evaluation, (v) environmental and social safeguard aspects (vi) option analysis, (vii) detailed engineering design, review of cost estimates, preparation of the bidding documents, procurement and contract documentation, (viii) proposed construction materials and contingency plan, etc. to the extent required by the contract. S/he will be a long term employer of the firm and will be designated as the engineer as defined in the FIDIC Conditions of Contract for Construction – Multilateral Development Bank Harmonized Edition June 2010. The TL will:

(i) Manage resources and lead the preparation of feasibility assessments, detailed engineering designs, bidding documents and procurement of civil works contract package/s focusing on transport infrastructure damaged by TC Pam;
(ii) Administer, implement, and monitor international and national consultants in the preparation of feasibility studies, option analysis, environment impact assessments, economic analysis, gender issues and social safeguard issues, leading to detail engineering designs tender documentation and procurement of civil works contract package/s;
(iii) Ensure coordination with other projects being undertaken by MIPU, development partners, other government ministries, and the private sectors;
(iv) Facilitate the participation of government counterparts in ongoing capacity development activities to ensure skills transfer;
(v) Ensure that the required audits, such as environmental, social and financial audits are undertaken and reported;
(vi) Oversee and coordinate the implementation of the draft strategy for vulnerability, impact, and climate change adaptation assessments;
(vii) Ensure that the results of the climate change and disaster risk assessment are fully incorporated into the project design including the detailed engineering design, environmental management, monitoring, BOQ and cost estimates.
(viii) Advice PWD and other agencies on road safety and traffic engineering and incorporate road safety measures in the detailed engineering designs;
(ix) Provide training of counterpart staff and assist as appropriate in the training of other staff in matters relating to road design, traffic engineering and road safety.
(x) In consultation with social, gender and environmental (national consultants) and PWD, prepare technical designs and specifications for transport infrastructure subprojects including design briefs and design reports;
(xi) Provide necessary civil engineering inputs for design of road sections including vertical and horizontal road alignment, road-cross section details, super elevation

development requirements, intersection designs, road storm water drainage design and pavement designs

(xii) Lead the preparation of detailed engineering design of bridges and other structures and oversee the preparation of drawings; technical specifications, bills of quantities, engineer's estimate in readiness for procurement;

(xiii) Check/review and document the QA of all the design documents submitted for tender before approval of the Director of PWD;

(xiv) Lead the preparation of bid documents consisting of the technical requirements and terms of reference, ensuring that the estimates of the bill of quantities are in accordance with the engineering design;

(xv) Assist the procurement team during procurement (eg. at pre-tender meetings, resolving design queries) including awarding and signing of contracts, compilation of signed contract documents, assessing compliance of bank guarantees, bonds and insurances submitted by civil works contractor/s in accordance with the conditions of contract;

(xvi) Oversee, guide and support PWD engineers and national consultants in establishing and maintaining contract administration documentation systems and procedures including contract files, record keeping, payments, claims, variations and periodic reporting;

(xvii) Ensure that the costs cost estimates are prepared in line with country and regional market value prices for similar projects;

(xviii) Conduct on-the-job and informal training, coaching and mentoring of PWD staff and national consultants in all of the above;

(xix) prepare project completion report for the project; and

(xx) undertake other related duties as required under the project

63. **Outputs during design phase**. The TL's outputs during the design phase include:

(i) Design phase outputs in para. 31 met.

(ii) Subprojects screened and prioritized.

(iii) Feasibility reports prepared and approved by PWD and ADB.

(iv) Project schedule is maintained as agreed during inception mission.

(v) DSC Team members comply with their outputs.

(vi) Implement appropriate project management tools and filing systems including collection of all current delivery and report standards, flow charts, quality assurance reviews, financial and procurement process and procedures.

(vii) Review and update of cost estimates.

(viii) Oversee management/financing/procurement plans are delivered in timely manner.

(ix) Implement an internal and external communications plan.

(x) Prepare and submit timely monthly, quarterly reports to PWD and ADB.

(xi) Coordinate and submit regular and timely reports (inception, monthly, quarterly, annual and project completion, etc) to PRC, MIPU and ADB.

(xii) An asset management plan with annual expenditure forecast for routine and periodic maintenance of ring road prepared.

64. **Construction phase inputs**. As indicated above, the TL will be the same candidate engaged for the implement the project reporting directly to the Director, PWD. S/he is responsible for the overall management of the consulting team and the project ensuring clear outputs out the specialists and civil works contracts are delivered within the implementation period. The TL will deliver the following tasks;

(i) Administer, implement; and monitor international and national contracts for civil works procured under the project;
(ii) Provide guidance to contractors, after the contracts are awarded, in preparing documents and processes for implementation, monitoring and reporting;
(iii) Review contractors' regular monitoring reports;
(iv) Ensure that the required audits, such as environmental, social and financial audits are undertaken and reported;
(v) Oversee and coordinate the implementation of the draft strategy for vulnerability, impact, and adaptation assessments
(vi) Ensure the construction costs are within the approved project's financing plan.
(vii) Provide training of counterpart staff and assist as appropriate in the training of other staff in matters relating to construction supervision, quality assurance and project management.
(viii) In coordination with the Construction Engineering Superintendent, ensure that engineering designs are implemented; Respond to and resolve design queries during implementation of designs. Oversee and assist with any design changes during implementation of the subprojects in consultation with Director, PWD and ADB;
(ix) Check and review for approval all designs and related documents submitted for construction by contractor/s. Initiate and coordinate design reviews by bridge engineers or other project specialists when required; and
(x) Carryout any other project related duties as directed by Director PWD.

65. **Construction phase outputs**. Outputs. The TL's outputs during the design phase include:

(i) DSC Team in construction phase effectively managed and supervised.
(ii) Grievance Redress Committee established for each subproject with representation from both men and women.
(iii) Communication Plan implemented.
(iv) Construction works completed within the given time period or within extended period.
(v) Quarterly progress reports prepared and submitted on time.
(vi) Draft project completion report in an agreed format submitted on time.
(vii) Final project completion report one month after receiving the comments on the draft final report from the government and ADB submitted.
(viii) Education awareness on HIV/AIDS and STIs and gender are well coordinated and undertaken.
(ix) Gender-sensitive community consultation is effectively implemented.
(x) PWD engineers trained in project management capabilities.

66. **Qualification and experience.** S/he will have: (i) an advanced degree in civil engineering or equivalent with qualifications/experience in road designs and project management; (ii) at least 5-8 years of experience in feasibility studies, detail engineering designs and construction supervision of transport infrastructure development projects (preferably roads and bridges) in which at least 3-5 years proven record in similar geographic location continuously as a TL for ADB funded project delivering feasibility studies, project management, implementation supervision; and knowledge in application of FIDIC conditions of contract and (iii) relevant work experience in Pacific DMCs or similar environments. S/he must be a full-time employee of the firm.

b. Deputy TL/Resident/Contract Engineer (international, construction phase 15 pm)

67. **Inputs.** The Deputy TL/Resident/Contract Engineer will also undertake the role of TL in discharging his/her duties during the construction phase. S/he will carry out the duties of the TL when the TL is out of the country. S/he will be the Engineer's Representative as detailed in the FIDIC conditions of contract. The Deputy TL/Resident/Contract Engineer responsibilities in contract administration and construction supervision will include, but not necessarily be limited to the following:

(i) Assist the PWD in supervising and monitoring construction of the project, prepare measurements for works completed and in progress, and verify bills for payment to the contractors or suppliers;
(ii) Assist the PWD in checking the line level, layout of the construction to ensure conformity with the contract, propose and present for approval any change in the plans that may be deemed necessary indicating any effect the change may have on contract and prepare all change/variation orders (where necessary) for the approval of MIPU;
(iii) In consultation with the TL and other DSC members, review and recommend for approval of contractor's Project Quality Plan, Environmental Management Plan, Gender activities, Health and Safety Program, and As-Built drawings in accordance with the contract requirements,
(iv) Monitor and enforce, as detailed out in Contractors Safety Program, the measures taken to ensure safety of the workers, other project personnel, general public and works;
(v) Furnish detailed drawings, with revisions as necessary, to the contractor, check contractors' design and drawings;
(vi) Attend third party inspections if required and provide certification on the quality of the supplies based on such inspections;
(vii) Check measurement for works completed and in progress, verify and endorse bills for payment to the contractors / suppliers by the PWD, provide certification on the quality of the works accomplished and on their conformity to specifications and drawings. Ensure that works are constructed to the prescribed quality in accordance with specifications, tender documents and quality assurance system;
(viii) Work as the engineer or employer's representative within the context of conditions of the construction contracts;
(ix) Ensure the contractor complies with the approved construction environment management plan;
(x) Hold monthly site meetings and prepare and submit monthly progress reports in such detail acceptable to PWD and ADB;
(xi) Regularly monitor physical and financial progress against the milestones as per the contract so as to ensure completion of contract in time;
(xii) Review and certify progress claims for disbursement;
(xiii) Monitor and enforce quality control on all activities of the construction work to make sure the highest quality of works conforming to the specification and drawings;
(xiv) Carry out timely reporting to PWD for any inconsistency in the work and suggestive appropriate corrective measures to be applied;
(xv) Examine contractors requests for time extension, variation, additional compensation and claims and recommend appropriate decision;
(xvi) Assist PWD in the resolution of various other contractual issues and overall contract management

(xvii) After physical completion of contract, prepare planned maintenance procedures; check installation and commissioning; monitor preparation of the "as built" drawings for various project component

68. **Outputs**. The outputs of the DTL include:

(i) Outputs of TL are completed by the DTL during the absence of TL.
(ii) The damaged transport infrastructure is completed to specifications and standards specified in the contract.
(iii) Effective management of the project activities, the consultants and contractor personnel in absence of the TL.
(iv) Duties of Engineer to the Contract are discharged as per FIDIC Conditions of Contract.
(v) Monthly progress reports and interim and final payment certificates are submitted on time.
(vi) Education awareness on HIV/AIDS and STIs and gender are well coordinated and undertaken.
(vii) Gender-sensitive community consultation is effectively implemented.
(viii) PWD engineers trained in contract management and administration.

69. **Qualifications and experience.** S/he will have a civil engineering degree with at least 10 years' experience in contract administration and construction supervision of bridges or wet crossings and other transport infrastructure in a developing country. A sound knowledge of project management and road and bridge construction materials properties and strengths is also required including experience in managing past projects as well as undertaking the role of resident/contract engineer. S/he must be an employee of the firm.

c. Procurement Specialist (international, design phase 4 pm, intermittent)

70. **Input**s. The procurement specialist will lead a procurement team within the project. The specialist will directly report and work with the TL, the bridge/structural design engineer, social and poverty specialist, resettlement specialist, hydraulics and hydrology engineer, transport economist, climate change and disaster risk management specialist and other members of the DSC to procure civil works and where necessary, consultancy and other services using the ADB Guidelines. The specialist will:

(i) Review and update MIPU's procurement documents for goods, works and services to international best practices;
(ii) Provide technical advice on procurement strategies for packaging works for subprojects;
(iii) Ensure that procurement processes are in accordance with policies, systems and procedures of government and development partners;
(iv) Prepare bidding documents for the civil works contracts in accordance with ADB's *Procurement Guidelines* (2015, as amended from time to time) and government procurement systems using ADB standard bidding documents;
(v) Work with the environmental safeguards specialist and national safeguards specialist to ensure that the environmental management plan provisions from the approved environmental assessment(s) and any conditions of the environmental permit(s) are integrated into the bidding documents;
(vi) Work with the Social Development, Community Consultation and Gender Specialist to ensure that any relevant gender activities are integrated into the bidding documents.

(vii) Prepare the TOR for the geotechnical investigations, topographical surveys, traffic counts and any other related works for subcontracting by the DSC firm.
(viii) Prepare bidding documents for the selection of sub-consultants for carrying out topographical surveys, geotechnical investigations and other services in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time);
(ix) Support the preparation invitations for bids and evaluation of submissions;
(x) Support the bidding process during the bid period, respond to queries from the bidders and conduct pre-bid meeting if required;
(xi) Lead Tender Evaluation Committee comprising PWD counterpart procurement staff in preparing the bid evaluation reports;
(xii) Provide assistance to PWD in updating of Procurement Plan, if required;
(xiii) Assist PWD and Council of Ministers in the award of contracts,
(xiv) Prepare contract documents;
(xv) Assist PWD in arranging with contractors to sign contracts,
(xvi) Support PWD in the issuance of Letter of Acceptance to the winning bidders,
(xvii) Assist PWD in obtaining and assess compliance of performance bond or guarantee and insurances from the winning bidders,
(xviii) Assist PWD in disclosing the names of bidders, bid prices and name of the winning bidder and its bid on government's website;
(xix) Conduct on-the-job and informal training, coaching and mentoring of MIPU staff and national consultants in all of the above.

71. **Outputs**. The outputs of the procurement specialist include:
(i) MIPU's procurement documents are international best practices.
(ii) Contract packages completed.
(iii) TORs for subcontracting completed
(iv) Invitation for Bids advertised.
(v) Bid documents prepared and bid process completed
(vi) Contracts awarded for the civil works, goods and services as per procurement plan
(vii) Procurement plan updated for any changes and submitted.
(viii) Prepare and update PWD Procurement Manual and Contract Administration Manual including procurement process and guidelines for assessment of bids and other procurement tools
(ix) PWD engineers provided training in all aspects of procurement

72. **Qualification and experience.** The specialist will have (i) a tertiary degree in business administration, economics, engineering, or other related fields, (ii) preferably 8 years' experience in development projects and at least three years undertaking procurement of ADB funded projects; and (iii) relevant work experience more than three years in Pacific DMCs or similar environments. S/he must be a full-time employee of the firm.

d. Bridge Design Engineer (international, design phase 4 pm intermittent)

73. **Inputs**. The bridge design engineer will be responsible for the detail design of bridges and structures damaged by TC Pam and supervision during the implementation phase. The design and supervision will adhere to AASHTO LRFD Bridge Design Specifications, and (ii) PNG Road and Bridge Design Standards or NZ Standards and Federation of Consulting

Engineers (FIDIC) engineering design standards and contract conditions. The job responsibilities will include, but not be limited to the following:

(i) Assess existing structures and determine causes of damage and provide engineering inputs in the feasibility study report;
(ii) Based on the risk and vulnerability assessments, analyze the potential risks and vulnerability of the structural components of the investment subprojects, and their implications for project design;
(iii) In coordination with climate change and disaster risk management specialist and hydraulic and hydrology engineer considering the adaptation options identified, refine the adaptation options taking into account the engineering feasibility;
(iv) Assist other team members in identifying all benefits of the adaptation options from an engineering perspective,
(v) Prepare technical documentation, including engineering design and specifications that include adaptation considerations in consultation with the specialists;
(vi) In consultation with the TL and other specialists, prepare concept designs, conduct option analysis to determine possible solution for restoration including the "building back better" option;
(vii) Carry out detail engineering design of bridges and wet crossings in accordance with the PNG or NZ bridge design standards or equivalent international design standards approved by MIPU and furnish bridge construction drawings;
(viii) Prepare BOQ, cost estimates too current market value prices and technical specification for input into the bid documents; and
(ix) Where appropriate and identified as community priority through consultations, include in the designs for water crossings features such as provision of pathways to streams, steps from road/bridge down to rivers/streams, and concrete tubs or slabs suitable for laundry use.

74. **Outputs**. The outputs from the bridge design engineer include:

(i) Feasibility study report on bridges and wet crossings completed.
(ii) Waterway widths and spans of bridges and wet crossings determined.
(iii) Water way widths and bridge spans.
(iv) Concept, tender level and detailed engineering design drawings of bridges and wet crossings including option analysis report and designs of protection works and river training works completed using build back better principles.
(v) Technical specifications for the structures completed.
(vi) Detailed engineering designs reviewed with PWD and ADB and endorsed for inclusion in the bid documents.
(vii) PWD engineers provided training in bridge design.

75. **Qualification and experience.** The specialist will have: (i) degree in civil/bridge design engineering and post graduate qualification in structural engineering, (ii) possess professional licensing and the right to practice the profession, (iii) at least 10 years' similar experience in bridge design and construction of high and low level bridges, culverts, causeways, and other structures, including five years' international experience in development projects; and (iv) relevant work experience in Pacific DMCs or and similar environments. S/he must be a full-time employee of the firm.

e. Road Design Engineer (international, design phase 4 pm, intermittent)

76. **Inputs**. The road design engineer will be responsible for the scope and detail design of road, drains and protection works of the selected subprojects damaged by TC Pam on Efate ring road. The job responsibilities will include, but not be limited to the following:

(i) Carry out scoping of works for about 5 km of the damaged sections of road pavement, drains and protection woks;
(ii) In coordination with the Project Economist and other DSC team members, carry out feasibility studies focusing on the engineering aspect of road, drains and protection works;
(iii) In consultation with social, gender and environmental consultants and PWD, prepare technical design and technical specifications of road, drain and protection subprojects including design briefs and design reports, as the case may be;
(iv) Lead the preparation of detailed engineering design for road, drains and protection works by adopting build back better principles, and oversee the preparation of drawings; technical specifications, bill of quantity and engineer's estimate;
(v) Review the road pavement design and designs of approach roads, drains and protection works with PWD engineers and finalize construction drawings;
(vi) Assist the procurement specialist in preparation of bid documents consisting of the technical requirements and terms of reference, ensuring that the estimates of the bill of quantities are in accordance with the engineering design and to current market value prices;
(vii) Assist TL in the preparation of the asset management plan for routine and periodic maintenance of Efate ring road; and
(viii) Conduct on-the-job and informal training, coaching and mentoring of PWD engineering in all of the above.

77. **Outputs**. The outputs include:

(x) Feasibility report prepared.
(x) Design drawings, technical specification, quantity calculations and cost estimates prepared.
(xi) Designs of road, approach roads, protection works and drains reviewed and construction drawings prepared.
(xii) Inputs to bid documents completed.
(xiii) Asset management plan prepared

78. **Qualification and experience.** The specialist will have: (i) degree in civil/road design engineering and post graduate qualification in road pavement design, (ii) possess professional licensing and the right to practice the profession, (iii) at least 5-8 years' similar experience in sealed pavement design(both flexible and rigid) and construction of roads, culverts, causeways, and other structures, including five years' international experience in development projects; (iv) sound knowledge of FIDIC conditions of Contract; and (v) relevant work experience in Pacific DMCs or and similar environments.

f. Quantity Surveyor/Estimator (international, design phase 0.75 pm)

79. **Inputs.** The Quantity Surveyor/Estimator would be responsible for undertaking peer review of BoQ and the estimates prepared by bridge and road design engineers and will perform the following tasks:

(i) Review the content of the cost estimate to check that it generally includes the appropriate items of work for the identified scope;

(ii) Review the level of detail of the bill of quantities to check that the breakdown is appropriate for the relative value of the individual items;
(iii) Review estimated rates to confirm their appropriateness in relation to the current market value prices and required work inputs;
(iv) Review the professional fees, preliminary and general costs, project contingency and project funding risk allowances where applicable;
(xiv) Identify risks and recommend mitigation measures in the estimates, and
(v) Prepare a report summarizing peer review methodology, findings and recommendations and submit to the Client

80. **Outputs**. The outputs include:
(i) Estimate meets the BoQ prices to current market value rates.
(ii) Risk analysis and mitigating measures on the estimates completed.
(iii) Report on estimate prepared.

81. **Qualification and experience.** S/he will have: (i) a degree in quantity surveying, (ii) at least 5-8 years' of experience working in the firm estimating civil works particularly, roads, drains and bridges change with relevant work experience in Pacific DMCs or similar environments.

g. Financial Management Specialist (international, design phase 1.0 pm)

82. **Inputs**. The expert will conduct financial due diligence in accordance with ADB's requirements.[20] Relevant guidance is available at http://www.adb.org/projects/operations/financial-management-resources. The analysis will include:

(i) confirm the financial management assessment of the executing and implementing agencies, including (a) assessing previous financial management assessments conducted by ADB or other agencies and, if so, reviewing the results and ascertaining whether these can be used as input, (b) assessing capacity for planning and budgeting, management and financial accounting, reporting, auditing, internal controls, and information systems (c) reviewing proposed disbursement and funds-flow arrangements, and (d) concluding on the financial management risk rating and identifying and confirming measures for addressing identified deficiencies;

(ii) confirm financial projections and conduct financial analyses of the executing and implementing agencies, and incremental recurrent costs, to determine financial sustainability, and reviewing proposed cost-recovery and tariff policies, including affordability;

(iii) where significant risks are identified to project financial sustainability or viability, propose relevant financial performance indicators to be incorporated in financial covenants; and

[20] ADB. 2014. Financial Management, Cost Estimates, Financial Analysis, and Financial Performance Indicators. *Operations Manual*. OMG2/BP. Manila.

(iv) assess and reach agreement on financial reporting, auditing and public disclosure arrangements for the project, and, as appropriate, identify and agree arrangements for receiving financial statements from executing and/or implementing agencies.

83. **Outputs**. The outputs include:

(i) Financial management assessment report on the executing and implementing agencies.
(ii) Incremental recurrent costs assessed for affordability and financial sustainability.
(iii) Asset management plan for project prepared in liaison with bridge and road engineers.

84. **Qualification and experience. S/he will have:** (i) a degree in accounting, finance, or a related field, and at least 8 years' consultancy or field experience. Substantial experience undertaking financial due diligence in Pacific Island countries or similar environment will be a significant advantage.

h. Hydraulic and Hydrology Engineer (international, design phase 3 pm, intermittent)

85. **Inputs**. The hydraulic engineer reports directly to the TL and will work closely with bridge design engineer, climate change and disaster reduction specialist will have the following functions and responsibility:

(i) Provide specialist engineering service including river training designs and cost estimates to subproject feasibility assessments;
(ii) Undertake hydrological analysis for bridge, river training, embankment and scour protection design;
(iii) Undertake hydrological assessments under various climate change scenarios.
(iv) Produce flood maps / hot spots for current and future scenarios.
(v) Liaise with the specialists for bridge design, climate change/disaster risk management and other specialists to finalize bridge and river training and embankment protection design;
(vi) Provide advice on stream flow changes and river patterns;
(vii) Provide hydrology on catchment on flood events of March 2015;
(viii) Using the GIS, contour maps, climate/cyclone/weather pattern analysis, topographic surveys, rainfall records, site photos and inspections results, prepare and calibrate the flood estimation model and estimate flood levels for each sub-project proposal;
(ix) Prepare preliminary and final technical documentation including specifications, bill of quantities and detailed cost estimates for river training and protection requirements for the subproject;
(x) Liaise with other specialists and staff to provide an integrated feasibility study report;
(xi) Undertake any related duties as required under the project, including preparing reports and other documents, as requested by the team leader or project manager; and
(xii) Conduct on-the-job and informal training, coaching and mentoring of MIPU staff and national consultants in all of the above.

86. **Outputs**. The outputs include:

(i) Hydrology on various stream crossings completed for damaged bridges.
(ii) Hydraulic calculations of waterway structures for subprojects as required.
(iii) Water catchment and water calculations from drains and culverts completed.
(iv) Design drawings, bill of quantity and cost estimates and specification of waterway structures and bridges;
(v) On-the-job training of MID counterpart staff in hydrology and aspects;
(vi) Related standards and manuals prepared for future project use.

87. **Qualification and experience.** S/he will have: (i) a degree in civil engineering with majoring in hydrology and hydraulics, (ii) at least 5-8 years' of experience working in the hydrology, hydraulics and climate change with relevant work experience in Pacific DMCs or similar environments. S/he must be a full-time employee of the firm.

i. Transport Economist (international, design phase 2 pm)

88. **Inputs**. The transport economist will conduct economic analysis of the individual subprojects identified under the project to determine the acceptability of the subproject in terms of economic efficiency and sustainability required by ADB. The outline TOR includes the following tasks:

(i) Review a macroeconomic analysis including development performance and global economy;
(ii) Review economic viability of a program action plan and program structure based on qualitative and quantitative examinations;
(iii) Elaborate program risks and measures to mitigate these risks;
(iv) Assist the TL in identifying suitable economically feasible projects to support transport sector recovery from the effects of TC Pam;
(v) Assess the economic costs of potential impacts and risks of projected changes in relevant climate variables (and sea level);
(vi) Evaluate the effectiveness of the past and present adaptation initiatives.
(vii) Assess the economic costs and benefits of possible adaptation inventions as identified by the climate change experts and refined by the engineer;
(viii) Provide recommendations based on the outcomes of the economic analysis.
(ix) Assess the impacts of a selected subproject and overall program on poverty reduction and income generation;
(x) Identify program benefits and costs, including quantifiable and unquantifiable benefits to the general economy and all costs and benefits of the various climate change adaptation options;
(xi) Conduct the economic analysis of selected subproject or segment of road and the overall program in accordance with ADB's Guidelines for the Economic Analysis of Projects (1997);
(xii) Undertake a least-cost analysis by comparing alternatives for the subproject and overall project and report to the TL. The analysis will consider climate change impacts and the identified adaptation options;
(xiii) Prepare a summary report of the findings of above assessments; and
(xiv) Assist the TL and other member of the DSC in preparing necessary outputs.

89. **Outputs**. The outputs of the transport economist include:

(i) As part of the feasibility studies, undertake economic analysis of all subproject completed in accordance with ADB's Guidelines for the Economic Analysis of Project (2007);

(ii) Qualitative discussions on the costs and benefits (size of affected population and economic activity, impact of the damaged road section on the affected population and economic activity, and the impact that project will have in reducing travel times and costs etc.) completed;
(iii) Economic due-diligence to cover cost-benefit analysis as well as alternative and least cost analysis, sensitivity analysis, and sustainability analysis, among other areas of the economic due diligence completed;
(iv) Provision of selection criteria relating to economic due diligence; for example, the subprojects/road-sections meeting or exceeding a minimum EIRR taking into account the minimum required EIRR of 10% completed;
(v) Economic analysis on incremental costs of climate of climate change adaptation and disaster risk management on building back better principles for all options completed; and
(vi) PWD engineers provided training in economic analysis.

90. **Qualification and experience.** S/he will have: (i) an advanced degree in economics or closely related fields; (ii) at least 10 years of experience in designing and analyzing transport infrastructure development projects; and (iii) relevant work experience in Pacific DMCs or similar environments.

j. Climate Change Adaptation and Disaster Risk Management Specialist (international, design phase 3 pm, intermittent)

91. **Inputs**. The Climate Change Adaptation and Disaster Risk Management (CCA/DRM) Specialist will provide technical inputs on the potential risks of climate change and disasters to the project components and options for managing identified risks. The outline TOR includes the following tasks:

(i) Collect existing climate change data, and climate change and disaster risk assessments and reports in the project area, and prepare a summary of existing information and potential gaps.
(ii) Based on internationally recognized guidelines for climate change adaptation technique, carry out the screening of subprojects and define the scope of further climate change assessment based on the screening results and information gaps;
(iii) Identify the climate parameters of concern for the project, including but not limited to changes in seasonal precipitation and flooding patterns, temperature regimes, and sea level rise;
(iv) Coordinating with the TL, the bridge engineer, and other team members, develop a methodological framework and detailed work plan for carrying out a climate and disaster risk assessment and management study for the project, taking into account the overall timeline of feasibility study and design phase and milestones when results from the study will need to be communicated and considered by the wider team;
(v) Assess the climate and disaster risk associated with the subprojects on the basis of the above; including the development of climate scenarios, assessment of potential risks of sensitive subprojects to projected climate change and disasters;
(vi) Conduct a vulnerability assessment in the project area to identify vulnerability of the planned infrastructure as well as the project's potential effects on the vulnerability of the area and people. In coordination with the hydrologist, identify priority areas with high vulnerability along the road corridors.

(vii) Coordinate the climate impact assessment in coordination with the TL and the other DSC members.

(viii) In consultation and collaboration with the TL and other DSC members, identify possible (structural and non-structural) interventions as adaption options to address impacts, risks and vulnerability.

(ix) Coordinate with the safeguard specialists and social development, community consultation and gender specialist to conduct community and stakeholder consultations to verify and refine selected adaptation and DRM options. Ensure that women constitute at least 30% of those consulted and ensure that women's knowledge of climate issues is considered in the design;

(x) Coordinate with the environment safeguards specialist to provide inputs to the environmental assessment and environmental management plan as required in line with the findings;

(xi) Assist the economist in estimating the life-cycle project costs and benefits of climate change adaptation and disaster risk management options, including the socioeconomic and environmental benefits, and prepare a report for each selected subproject as part of the feasibility study;

(xii) Prepare a detailed technical report on the study, including the overall methodology, data used, assumptions made, key findings and their implications for the project preparation[21], caveats/limitations of the study and their implication for the project preparation;

(xiii) Assist the TL in adjusting the design of the subprojects by incorporating climate change adaptation and DRM; and

(xiv) Provide recommendations and suggestions for improvements in methodology to MIPU; ensure skills transfer for improved sustainability of designs, and identify additional training needs.

92. **Outputs**. The outputs of the climate change adaptation specialist are as follows:

(i) A technical note outlining the sensitivities of project components to climate conditions and disasters completed;

(ii) A work plan for a climate and disaster risk and vulnerability assessment and management study, including: key study sites/areas, future timeframe, climatic/hydrological variables/parameters to be analyzed; inventory of data required for the study, and data acquisition plan; methods and techniques for climate scenario analyses; methods for impact assessments; methods for identifying risk management/adaptation options; and a plan for interacting with the design team (including objectives, timeline, relevant team members); and key outputs with milestones completed;

(iii) A technical report on the study, including: an executive summary including key findings and their implications for the design, construction and maintenance of project components; methodological framework; data, scenarios and assumptions underlying the study; key findings including projected climate change in the project sites/areas, potential impacts of projected climate change on project components; possible options to address impacts/risks to ensure climate and disaster resilient design, construction and maintenance of project components; and wider implications of climate change and associated impacts for road network development, caveats and limitations of the study completed;

(iv) The specialist will use (i) - (iii) above in supporting the design of the road segment or bridges and project activities to build back better principles; and

[21] Including plans for the design, construction and maintenance of project components

(v) PWD engineers provided training in climate change adaptation and disaster risk management.

93. **Qualifications and experience.** S/he will be a climate scientist or geographer or hold qualifications in related fields of climate change and disasters with: (i) at least 8 years of experience working in the fields of climate change scenario analysis, climate change and disaster impact, vulnerability and adaptation, (ii) extensive experiences of working within a multidisciplinary team and demonstrable skills in communicating climate science to a wide range of audiences.

k. Environment Safeguard Specialist (international, design phase 1 pm, construction phase 3 pm, intermittent)

94. **Inputs**. The environment safeguards specialist (ESS) will report directly to the TL. The specialist will work closely with local counterpart staff identified by the PWD and the national safeguard specialist (NSS). The ESS will work closely with the local counterpart staff and NSS to ensure that site visits, consultations and community meetings will be coordinated to the extent possible. The ESS will review ongoing practices, analyze environmental risks associated with sector project, assist the TL and other DSC staff to contribute to feasibility study reports and prepare suitable safeguards assessments and plans following the EARF approved for the project and the systems already being implemented by the PWD. The ESS will lead discussions and consultations with Department of Environmental Protection and Conservation (DEPC), the screening, categorization, assessment/reporting for environmental issues and impact, deliver training as required to DSC team members, PWD and contractor(s), and establish the system for compliance monitoring that will be implemented by PWD during construction stage.

95. **Design phase inputs**. The outline TOR during design stage includes the following tasks:

(i) Facilitate the participation of government counterparts and contractor(s) in ongoing capacity development activities to ensure skills transfer for improved sustainability of the investment;

(ii) In conjunction with the national social development, community consultation and gender specialist (SDCCGS), NSS, and PWD safeguards officers undertake and/or participate in consultations as required by the consultation and participation plan prepared for the project and as required for the safeguards assessments;

(iii) Based on preliminary designs, identify (screen) the impacts of the remedial works proposed for the damaged locations, and prepare the application and project description to be submitted to DEPC for determination on the type/ level of environmental assessment required;[22]

(iv) Work with the NSS to prepare an environmental assessment covering all proposed reconstruction activities and repair works within that section. As per the EARF the environmental assessment(s) will comply with both the Environmental Protection and Conservation Act and Safeguard Policy Statement 2009 (SPS). Depending on the timing of design and availability of information one assessment covering a number of road sections/subprojects may be prepared or individual

[22] The DEPC will review the application and project description to determine the type/level of environmental assessment required. Any additional elements as required by ADB Safeguard Policy Statement 2009 must be included in the assessment to fill gaps.

assessments may be prepared. The most appropriate approach will be discussed and agreed with PWD and ADB;

(v) Provide the draft environmental assessment(s) to MIPU/PWD and ADB for review and comment. Following any revision as required by the review, assist PWD to submit the environmental assessment(s) to DEPC for issue of environmental permit;

(vi) Facilitate disclosure of the environmental assessments and environmental permits issued by DEPC in accordance with government requirements (as per existing legislation and any other relevant laws) and ADB Public Communications Policy 2011; and

(vii) Based on the environmental management plan (EMP) contained in the approved environmental assessment(s), updated as required to reflect detailed designs, and any conditions on the environmental permit issued by DEPC, assist PWD and the project procurement specialist to integrate the updated EMP and other plans and relevant provisions and text from the environmental assessment(s) into the tender/contract documentation.

96. **Construction phase inputs**. The outline TOR during construction stage includes the following tasks:

(i) Based on the updated EMP, prepare draft method statements to be included in the contractor's construction EMP (CEMP) including waste management plan (WMP), traffic management plan (TMP), materials management plan (MMP), erosion and runoff control plan (ERCP), drainage management plan (DMP), and health and safety plan (HSP);

(ii) Prior to contractor's preparation of the CEMP provide training to PWD and other MIPU staff on environmental management provisions and monitoring. Provide induction training to the contractor on environmental management and monitoring requirements and support the contractor to prepare the CEMP, and assist the NSS to review the CEMP (including other plans as required) - suggest changes or revisions as required, and recommend to DSC TL/PWD that approval of the CEMP may be issued;

(iii) Further to the existing compliance monitoring being implemented by PWD, assist the NSS to put in place environmental monitoring and reporting mechanism for the project and contribute to Quarterly Progress Reports - including compilation of relevant items from Monthly Reports prepared by contractor - to be prepared by the DSC for PWD and ADB. The monitoring and reporting system will cover CEMP compliance and compliance with any conditions on environmental permit issued by DEPC;

(iv) Monitor the contractor's compliance with CEMP (and other plans) and permit conditions, and as necessary conduct on-site spot-checks of contractor's mitigations and review contractor's Monthly Reports regular monitoring reports. Prepare inputs to the semi-annual safeguards monitoring reports on environmental safeguard aspects; and

(v) Ensure compliance with all assurances under the project.

97. **Outputs**. The outputs of the ESS include:

(i) Contribution to feasibility study through preparation of environmental assessment report(s) and plans prepared;

(ii) Training to DSC team members, PWD, NSS and contractor(s) completed.

(iii) Templates prepared and system established for compliance monitoring and reporting that will be implemented by the PWD, contractor(s) and NSS during construction stage.

98. **Qualifications and Experience.** S/he will have: (i) a tertiary degree in environmental science or planning, or a closely related field; (ii) at least 8-10 years' experience working in developing countries; (iii) experience in the Pacific countries and experience in Vanuatu will be considered an advantage; (iv) recent and demonstrable experience in preparing and implementing safeguards aspects of infrastructure development projects in Pacific countries or similar environments.

l. National Safeguard Specialist (national, design phase 1 pm, construction phase 7 pm, intermittent)

99. **Design phase**. The national safeguard specialist (NSS) will work alongside the ESS, social safeguards/resettlement specialist (SRS) and social development, community consultation and gender specialist (SDCCGS) in delivering the tasks and outputs in para. 60-62. The NSS will be trained to ensure s/he is fully capable of delivering the monitoring and reporting requirements on safeguards in accordance with report template during the implementation phase of the project.

100. **Design phase outputs.**

(i) Feasibility study and safeguards assessments reports and plans prepared, reviewed, cleared and disclosed;
(ii) NSS acquired adequate training and competency to monitor contractor safeguard compliance and prepare the monitoring reports.

101. **Construction phase inputs**. The NSS will assist the TL and Deputy TL/Contract Engineer in conducting on-site spot-checks of contractor's implementation of approved CEMP and review contractors regular monitoring reports. The NSS will work in coordination with SDCCGS. The responsibilities of NSS will include capacity building, monitoring of compliance, and reporting as follows;

(i) Attend meetings with contractors as may be convened by the Resident/Contract Engineer and Construction Engineering Superintendent with contractors on environmental concerns in their operations;
(ii) Assist in facilitating the participation of government counterparts in ongoing capacity development activities to ensure skills transfer for improved sustainability of designs;
(iii) As may be instructed by the PWD Director and Safeguards Specialists, participate in the collection of data (including participation in public consultations) as required for environmental assessments to be prepared for subprojects; and
(iv) Monitor compliance with CEMPs, as necessary, and support compliance with the environmental assurances under the project.

102. **Outputs**. The outputs of the NSS during the construction phase include:

(i) Quarterly reports on progress of safeguards assessment and environmental management plans prepared.
(ii) Six monthly compliance monitoring and prepare reports as per the template prepared and submitted to TL.
(iii) Reports prepared on meetings with contractors (including induction on need for CEMP) as and when meetings take place.

(iv) Participation in on-the-job training and coaching properly documented in monthly accomplishment reports.
(v) Facilitate public disclosure of all project safeguards documents on the government website.

103. **Qualifications and Experience.** S/he will have: (i) a tertiary degree in environmental science or planning, or a closely related field; and (ii) at least 2-3 years' experience working in similar donor funded projects.

m. Social Safeguards/Resettlement Specialist (international, design phase 2 pm)

104. **Inputs.** The social safeguards/resettlement specialist (SRS) will work with the NSS and the counterpart officer in the PWD. The SRS will work closely with the ESS to ensure that site visits, consultations and community meetings will be coordinated to the extent possible. The SRS will review ongoing practices, analyze social safeguard risks associated with sector project, assist the TL and other DSC members to contribute to feasibility study reports and prepare suitable safeguards plans or reports following the resettlement framework (RF) approved for the project and social systems already being implemented by PWD. The SRS will lead the screening, categorization, preparation of plans/reports for land/resettlement issues and impact, deliver training as required to DSC team members, PWD and NSS, and establish the system for monitoring that will be implemented by the NSS during construction stage. The outline TOR includes the following tasks:

(i) Take overall responsibility for land acquisition/resettlement, social safeguards and gender issues during the design, implementation, and monitoring of the project, in accordance with the project's RF which follows both SPS and relevant laws of Vanuatu ;
(ii) Coordinate and work together with the SDCCGS and NSS to develop and implement gender-sensitive stakeholder consultation and communication programs to ensure the full awareness and participation of both men and women in affected communities and male and female stakeholders;
(iii) Encourage all DSC members to ensure all community consultations and stakeholder engagement involves participation of both men and women. Community consultations should aim to have at least 30% women's participation.
(iv) Assist in establishing and implementing the project's grievance redress mechanism;
(v) Liaise with relevant government and local authorities for their participation in and oversight of negotiation with landowners/affected persons (APs) for purposes of temporary and permanent land access/acquisition for the project;
(vi) Based on preliminary designs, identify (screen) the social safeguard impacts of the remedial works proposed for the damaged locations, and prepare a screening/project description outlining the type of assessment required for each section/subproject. The screening/description will be submitted to PWD and ADB for confirmation prior to any further assessment being undertaken or any works commencing;
(vii) Once confirmed, as required prepare due diligence reports (DDR) including memorandum of agreement (MOA) and/or land acquisition/resettlement plan (RP) for subprojects in accordance with the project's RF;
(viii) Identify, and assist PWD to engage, a suitable third party for verification of any MOA in accordance with the project's RF;
(ix) For the road sections/subprojects requiring permanent access or acquisition and/or resulting in resettlement impacts as defined by the project's RF,

undertake the following tasks in coordination with relevant agencies and stakeholders for preparing and implementing RP(s): (a) collect APs' baseline socio-economic information; (b) assessment impacts on APs focusing on vulnerable groups and their livelihoods; (c) undertake detailed measurement survey and prepare an entitlement matrix; (d) undertake meaningful consultation with all affected households to assess the level of their support to the project, compensation rate, and identify issues, if any; (e) prepare land acquisition implementation plan;

(x) Submit the draft RP(s) and DDR to ADB for review and clearance prior to disclosure. Undertake revision of RP(s) and DDR as necessary;

(xi) Facilitate disclosure of the DDR and/or RP to affected communities, including providing a summary of its contents to APs in local language on eligibility, entitlement, grievance mechanism, timeline of land acquisition, and compensation payment;

(xii) Ensure that the RP(s) have been properly implemented and no objection issued by ADB prior to commencement of any physical works;

(xiii) Further to the existing compliance monitoring being implemented by PWD, assist the NSS to put in place social safeguard monitoring and reporting mechanism for the project and contribute to Quarterly Progress Reports. Prepare inputs to the semi-annual monitoring reports on land acquisition/resettlement, gender and social safeguards;

(xiv) Develop and deliver capacity enhancement training in gender and social safeguards for staff in the PWD/MIPU, other relevant agencies, and contractor(s).

105. **Outputs**. The outputs of the SRS include:

(i) Feasibility study and safeguards assessments reports, MOA for access to sites or temporary land acquisition or resettlement plans, if required and due diligence reports with third party validation completed.

(ii) RPs and DDRs prepared and disclosed.

(iii) DSC team members, PWD engineering staff and NSS trained.

(iv) A system for monitoring and reporting that will be implemented by the NSS during construction stage completed.

106. **Qualifications and Experience.** S/he will have: (i) a tertiary degree in social sciences or a closely related field; (ii) at least 8-10 years' experience working in developing countries; (iii) relevant work experience in Pacific countries or similar environments and experience in Vanuatu will be considered an advantage; (iv) recent and demonstrable experience in preparing and implementing land acquisition and resettlement plans, preferably in infrastructure projects; and (v) demonstration of undertaking review and assessment of country safeguards systems will also be considered an advantage.

n. Social Development, Community Consultation and Gender Specialist (national, design phase 5 pm and construction phase 8 pm, intermittent)

107. **Design phase**. The social development, community consultation and gender specialist (SDCCGS) will work closely with the NSS, safeguards and community liaison officers in the PWD, SRS and ESS to ensure that site visits, consultations and community meetings will be coordinated as much as possible. The SDCCGS will have primary responsibility for supporting

PWD to prepare and implement the project's community participation plan (CPP) and gender measures and actions. The outline TOR includes the following tasks:

(i) Submit the CPP through PWD to MIPU and ADB for review and clearance;
(ii) Together with other team members, implement the project's CPP and GAP, targeting women's participation in all activities;
(iii) Encourage all DSC members to ensure all community consultations and stakeholder engagement involves participation of both men and women. Community consultations should aim to have at least 30% women's participation.
(iv) Conduct interviews, focus group discussions or other meetings with male and female stakeholders to prepare implementation strategy and schedule for the project's gender activities;
(v) Facilitate implementation and monitoring of gender activities, including identified community development projects during subproject construction;
(vi) Assist PWD and PMU to establish and support the community advisory committees and grievance redress committees as required under the CPP. Encourage women's participation on all project committees;
(vii) Work with local government officials, including gender officer under the provincial community development office, to finalize and implement identified community development activities and ensure accomplishment of gender and other targets for subproject communities;
(viii) Conduct gender and social awareness seminar for PWD and MIPU staff prior to and during project implementation;
(ix) Collect and analyze data as required for project monitoring and evaluation purposes, prepare and/or contribute to monitoring reports; and
(x) Provide progress status on implementation of gender activities and community development activities in the quarterly progress reports for PWD, MIPU and ADB.

108. **Output**s. The outputs include:

(i) Training and awareness raising on social development and gender aspects delivered;
(ii) Compliance monitoring carried out and compliance report prepared for the QPR;
(iii) Six-monthly compliance monitoring report prepared and publically disclosed.

109. **Qualification and experience.** S/he will have (i) a tertiary qualification in social sciences or related field; (ii) has good understanding of land customary land issues in Vanuatu; (iii) has a good understanding of gender issues in Vanuatu and how to address them in the context of road projects; and (iv) at least 3-5 years working experience, preferably in similar projects and in similar areas funded by ADB or other development partners.

o. Construction Engineering Superintendent (international, construction phase 15 pm)

110. **Construction phase**. The responsibilities of the specialist will include, but not necessarily be limited to the followings:

(i) Under the guidance of Resident/Contract Engineer and TL, provide direct supervision of contractors works;
(ii) Ensure that the contractor complies with the approved CEMP requirements. Work with the NSS to identify issues and identify corrective actions as required;
(iii) Ensure that the works are completed in compliance with the specifications and standards under the contract;

(iv) Oversee quality control of the works of the contractor's personnel including quality of pavement materials, concrete and reinforcing bars, steel, bitumen etc. as per specifications;
(v) Assess construction materials and oversee field and laboratory tests;
(vi) Certify the laboratory tests on materials and concrete;
(vii) Assess contractor's monthly claims;
(viii) Provide training in supervision to national staff or consultants; and
(ix) Provide inputs in Resident /Contract Engineer's monthly progress report.

111. **Outputs**. The outputs are as follows.
(i) Effective supervision and quality assurance of contractor's work in accordance with contract is complied with.
(ii) Contractor's workers comply with the operational, health and safety standards as per the contract.
(iii) Specification and strengths of the construction materials for bridges and roads are complied with as per the contract.
(iv) Education awareness on HIV/AIDS and STIs are well coordinated and undertaken.
(v) Community consultation is effectively implemented.
(vi) PWD engineers and supervisors trained in construction supervision and quality control activities under the contract.

112. **Qualifications and Experience.** S/he will have (i) higher certificate or diploma in construction engineering particularly roads and bridges, (ii) at least 10 years of experience in supervision of the construction of bridges under road structures preferably in Pacific DMCs; and (iii) knowledge of properties of soil and aggregates including construction material and their strengths for roads and bridges is essential.

p. Monitoring and Evaluation (M&E) Specialist (international, design phase 2 pm and construction phase 1 pm, intermittent)

113. **Design phase inputs**. The international M&E specialist (IMES) will develop the monitoring and evaluation system of the project. S/he will build capacity of the PWD assigned staff for M&E as well the staff of Monitoring and Evaluation Unit of the Prime Minister's Office (PMO) on the M&E systems of the project. The outline TOR includes the following tasks:
(i) Examine the existing reporting system by the M&E Unit in PMO, and determine how the project performance monitoring system (PPMS) could be minimally modified for the project. In consultation with PMO staff, PWD and ADB prepare an updated M&E Plan for the project;
(ii) Review performance indicators in the project's Design and Monitoring Framework (DMF) and agree on indicators and targets as well as on definitions of these indicators. Submit proposed revisions, if necessary;
(iii) Establish sex-disaggregated baseline data for the DMF performance indicators, if needed, and other gender-related indicators for regular monitoring and reporting during project implementation period.
(iv) Update the M&E and systems that incorporate agreed indicators and targets and identifies sources of baseline and progress data as well as frequency of reporting;
(v) Based on the M&E framework and M&E Plan, design and document a PPMS that incorporates systems and procedures for collecting, processing and reporting

data, is compatible with the ADB's Project Performance Reporting (PPR), and meets the requirements of PWD and PMO's M&E Unit;

(vi) Implement the PPMS and analyze data collected on key performance indicators ensuring that these activities are sustained within PWD and PMO's M&E Unit by training local counterpart and national consultant, as the case maybe;

(vii) In coordination with the ESS, SRS and SDCCGS, train national counterparts and consultants on gender-sensitive survey methods, collection, analysis and reporting of baseline data for key performance indicators;

(viii) Prepare a training design, training modules and training materials on gender-sensitive survey methods for collecting baseline data including the analysis of survey results, and conduct a training activity for national counterparts and consultants;

(ix) Brief PWD and PMU staff and consultants regularly on the PPMS and its implementation including individual responsibilities for data collection and reporting; and

(x) For all periodic reports, prepare and analyze data on physical progress based on the implementation plan, and on project performance based on indicators and targets for the mid-year and annual reports.

114. **Outputs**. The design phase outputs of the IMES include:

(i) Baseline survey and M&E plan completed by end of March 2016
(ii) Update if any M&E framework that defines the performance indicators
(iii) Establish databases for baseline data for survey end March 2016.
(iv) Submit complete PPMS documentation end April 2016
(v) Populate the PPMS by end June 2016
(vi) PPMS up and running by end December 2016
(vii) Assessment report on transforming PPMS into a transport sector M&E Unit system in PMO.

115. **Qualification and Experience**. S/he will have: (i) a tertiary degree in social science or economics or a closely related field; (ii) at least 8-10 years' experience working in developing countries; (iii) experience in the Pacific countries and experience in Vanuatu will be considered an advantage; (iv) recent and demonstrable experience in preparing and implementing monitoring evaluation aspects of infrastructure development projects in Pacific countries or similar environments

116. **Construction phase**. The main outputs of the IMES during this phase include: (i) PPMs updated quarterly and national M&E specialist (NMES) trained in updating PPMS; and (ii) Quarterly M&E report prepared NMES trained in preparing quarterly M&E reports.

q. Monitoring and Evaluation (M&E) Specialist (national, design phase 2 pm and construction phase 3 pm, intermittent)

117. The national M&E specialist (NMES) will work alongside the IMES in delivering the tasks and outputs in paras. 114 & 116 above. The NMES specialist will be trained to ensure s/he is fully capable of populating the PPMS, implementing it and preparing and reporting on the M&E during the implementation phase.

118. **Outputs.** The main outputs in construction phase include:

(i) PPMS updated quarterly
(ii) M&E quarterly reports prepared.

119. **Qualification and Experience**. S/he will have: (i) a tertiary degree in social science or economics or a closely related field; (ii) at least 3-5 years' experience in undertaking M&E activities including at least two years in a donor funded project.

r. Project Accountant and Administration Officer/Accounts Clerk (national, 30 pm design phase and 30 pm construction phase, full-time)

120. The project accountant and administration officer/accounts clerk will maintain all project accounts and oversee office administration including logistics. The responsibilities of the specialist will include, but not necessarily be limited to the followings:

(i) Ensure that a well-managed project accounts team is established in PWD and ensure they follow sound accounting principles Prepare project accounts for annual audits;
(ii) Review and rationalize project chart of accounts, review financial reporting requirements and improve systems for financial reporting including reconciliation of project accounts;
(iii) Produce monthly cash flow statements, procedures for reconciliation of project accounts;
(iv) Improve written and processing procedures in the review of claims and preparation of withdrawal applications;
(v) Update a comprehensive Financial and Administration Procedures Manual. This manual shall be built on relevant guidelines including *ADB's Guidelines for the Financial Governance and Management of Projects* and *Loan Disbursement Handbook*.
(vi) Manage and facilitate the timely disbursement of project funds in accordance with *ADB's Loan Disbursement Handbook* (2007, as amended form time to time) and the government's *Financial Instructions (2010;*
(vii) Prepare TOR and arrange procedures for the audit of the project accounts;
(viii) Arrange for PWD's accounting staff to be integrated into PMU's financial management and accounting systems and provide training in accounting and, booking and maintaining asset register;
(ix) Conduct on-the-job and informal training, coaching and mentoring of MIPU staff and national consultants in all of the above. Prepare capacity development plans for MID Accounts staff and national consultants in all of the above.
(x) File all the project records; and
(xi) Ensure inventory of MIPU fixed asset register and updating as needed.

121. **Outputs**. The outputs of the accountant include:

(i) Timely and regular financial reports submitted to the TL and PWD.
(ii) Reviewed existing financial management tool, and revise as needed.
(iii) PWD Accounts staff able to organize and facilitate audit preparations
(iv) Updated Financial Management Manual
(v) Three annual audits facilitated (2016-2018)
(vi) Updated fixed PMU asset with signed memorandum receipt per staff.
(vii) Build competencies by PWD Accounts staff on project accounting system, annual budgeting, procurement, internal control and financial monitoring and reporting.
(viii) PWD accounts staff trained in project accounting.

122. **Qualifications and Experience.** The accountant will possess (i) a degree in accounting or equivalent; (ii) at least 3-5 years' experience as an accountant including at least two years in a donor funded project. The Administration Officer/Accounts Clerk will possess a diploma or certificate in accounting or relevant certificate in bookkeeping. S/he will hold at least two years of experience in bookkeeping and have worked for two years in donor funded project.

E. MIPU Counterpart Support and PWD Resources

123. MIPU will provide counterpart support through the Director PWD, MIPU Engineers in PWD, soils laboratory technician and equipment available in the Soils Laboratory. PWD will also provide as built drawings of the damaged structures particularly to the Efate ring road. In addition and in order for PWD to directly involve in financial management and project accounting, MIPU will provide an accounting officer and accounts clerk both intermittently during project period. MIPU will also provide for office space and furniture for DSC. All office equipment for the project and stationary, including office operational costs for the project, have been estimated in the DSC budget.

VII. SAFEGUARDS

124. MIPU, as the implementing agency, will have overall responsibility for compliance with safeguard requirements. Pursuant to ADB's Safeguard Policy Statement (2009) (SPS),[23] ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the SPS.

125. **Environment**. The project is category B for environment. An environmental assessment and review framework (EARF) has been prepared to provide a procedure for the environmental assessment and clearance of subprojects that will be identified and prepared during the course of the project. The EARF covers the selection, screening, assessment, implementation and monitoring of subprojects during design and construction phases of the project. The EARF requires that eenvironmental assessment and clearance of subprojects under the project will comply with the country safeguard system (CSS) of Vanuatu and ADB safeguard policy where there are gaps between CSS and best practice as set out in the Safeguard Policy Statement 2009 (SPS). Based on experience with other projects in the sector, it can be anticipated that most of the impacts will be site-specific, are not particularly significant as road segments and bridges to be repaired will be reconstructed within their existing location, i.e., within the already existing road corridor. Thus, land acquisition and associated issues with regard to disturbance of cultural sites, destruction of significant vegetation or habitats is unlikely to be an issue. If any minor realignment of road sections is proposed as a climate proofing or adaptation measure, they will be screened and assessed as per the EARF.

126. **Involuntary resettlement**. The project is classified as category B for land acquisition and involuntary settlement. The project is within the existing ring road corridor, temporary access to land outside the corridor will be required during construction. Some small areas of additional land (for coastal protection works) may be required at 3-4 locations; this will be through negotiated settlement and/or voluntary donation in accordance with the project's resettlement framework. Civil works will require temporary land use or access during construction and may involve some impacts such as loss of trees and crops on the respective land needed for access or storage areas during construction. Specific impacts will be known

[23] Available at: http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf

only after the feasibility and detailed design according to site specific requirements of the repair works.

127. A resettlement plan or report will be prepared for any land acquisition or other non-land impacts, the plan will ensure that equal compensation and assistance will be provided to male and female affected people. Gender specific outputs, targets and indicators will be integrated into the project's design and monitoring framework.

128. A resettlement framework (RF) has been prepared to address potential land acquisition/resettlement impacts that may arise during construction. The RF describes procedures for (a) screening of land acquisition/resettlement impacts; (b) social impact assessment and preparation of resettlement plan (RP), if needed; (c) negotiation and agreements for land access; (d) resettlement principles and entitlements; and (e) implementation and monitoring arrangements. It is based on applicable laws and regulations of the Government of Vanuatu and the SPS.

129. **Indigenous people**. The project is category C for indigenous people. The project will be confined to the existing ring road corridor and the beneficiaries are the Ni-Van people. The project does not trigger the safeguard policy.

VIII. GENDER AND SOCIAL DIMENSIONS

130. The project is classified with some gender elements. The DSC will be encouraged to recruit both men and women in the project team, aiming to achieve 30% participation by women over the course of design and implementation. Women will be encouraged to take up employment during project implementation (reconstruction) including labor-based road work, traffic control, traffic survey work and other employment opportunities. Equal wages for equal work will be paid to men and women engaged in the project. Various training and awareness activities will be undertaken, including: training on traffic control at construction sites and safeguards; education awareness on HIV/AIDS and prevention (coordinated with HIV Coordinator of Ministry of Health); and awareness on gender sensitive transport and road safety issues. Resettlement and community meetings will involve women and will be conducted by both male and female facilitators (at least 40% of participants are women and 50% female facilitators). Grievance redress committees will include both women and men (target 20% women).

X. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Project Design and Monitoring Framework

Impact the Project is Aligned with:

Accelerated economic and social recovery in Vanuatu's Cyclone Pam affected provinces (defined by the project)

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Socioeconomic activities restored to pre-cyclone levels	**By 2017** a. GDP growth projection increased to 3.6% Baseline 2015 GDP growth is expected to decline to 1.4% from 4.6% b. 130 km of road connected for road users to facilitate trade	a. ADB Outlook, Pacific Economic Monitor database and Vanuatu national Statistics Office b. Quarterly progress reports from MIPU	Extreme weather event occurs during reconstruction
Outputs 1.Transport infrastructure in damaged locations on Efate ring road reconstructed, and climate and disaster-proofed	**By 2018** 1a. about 10 km of road rehabilitated 1b. about 8 stream crossings and their approach roads, abutments, piers repaired and protected 1c. about 9 bridges, box culverts and causeways repaired for minor damages and debris cleared 1d. about 200 m of river channel realigned at upstream and downstream and river training structures constructed 1e. about 1000 m of sealed pavement protected against erosion from storm surges 1f. about 8 km of road side and cross road drainage improved 1h. about 6 culvert headwalls reconstructed 1i. about 250 m of guard rail reconstructed 1j. about 180 m of river banks protected	Quarterly progress reports from MIPU	Delays in implementation caused by MIPU staff occupied in other infrastructure sectors such as reconstruction of public buildings

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	1k. about 100 m by 50 m of land slide at Klems hill reinstated 1l. about 600 m long concrete longitudinal road side drain at Klems hill improved 1m. 100% of construction workers and at least 80% of roadside inhabitants receive education in gender equality and HIV/AIDS awareness by the end of the project. 1n. all community consultations will include at least 30% participation by women.		

Key Activities with Milestones

1. Project management and supervision
1.1 Recruit design supervision consultants (Q4 2015)
1.2 Prepare inception report and an implementation plan (Q1 2016)
1.3 Prepare communication strategy and communication plan and implement (2016-2017)
1.4 Oversee environment management activities (2016-2017)
1.5 Prepare project completion report (Q1 2018)

2. Reconstruction of damaged infrastructure
2.1 Conduct topographical survey of all subprojects (Q1 2016)
2.2 Conduct feasibility study of all subprojects (Q1-Q2 2016)
2.3 Prepare detailed engineering designs of all subprojects (Q2-Q3 2016)
2.4 Prepare bid documents (Q4 2016)
2.5 Carryout bidding and bid evaluation (Q1 2017)
2.6 Award civil works contracts (Q1 2017)
2.7 Reconstruct civil works (Q1 2017- Q4 2017)

Inputs

ADF: $3,805,000 loan
ADF: $9,805,000 grant
GEF: $2,680,000 grant (fully administered by ADB)
Government: $1,910,000 in taxes and duties that the government will exempt and in-kind contribution of $300,000 in audit fees and counterpart staff.

Assumptions for Partner Financing

Additional cofinancing may be confirmed and added to the project after for any additional or upscaling of the performance targets for the output.

ADF = Asian Development Fund, GDP = gross domestic product, GEF= Global Environment Facility, km = kilometer, m = meter, MIPU = Ministry of Infrastructure and Public Utilities, Q = quarter.
Source: Asian Development Bank.

B. Monitoring

131. **Project performance monitoring.** The PMU through the DSC will be tasked to perform a monthly progress review of activities as agreed per work plan deliverables. This will include (i) initially the design work and (ii) community consultation and (iii) subsequently the reconstruction of the civil works. In close coordination of the Government's monitoring and evaluation units at Prime Minister's Office, a simple monitoring and evaluation system will be established with baseline data at the PMIU which will include targets and indicators from the DMF. Data collected will be sex-disaggregated. Achievement of work plan deliverables, milestones and as well as respective indicators will be reporting in the quarterly progress report and after each ADB review mission. These reports will provide information necessary to update ADB's project performance reporting system

132. **Compliance monitoring.** Compliance with project covenants will be monitored through the quarterly progress reports and after each ADB review mission. The PMU through the DSC and will be responsible for monitoring compliance in accordance with the ADB-government grant agreement, issuing warnings to the government and or consulting firms/contractors when covenants are breached, and informing ADB.

133. **Safeguards monitoring.** Environment and social safeguards will be monitored by international and national specialists within the PMU, in accordance with the IEE and any resettlement plan and/or due diligence report. The results of safeguards activities and monitoring will be reported in the PMU quarterly progress reports. Additionally, review missions and semi-annual safeguards monitoring reports will report on safeguard compliance. Review missions will be guided by the checklists contained in Appendix 1. The outline table of contents for semi-annual monitoring reports is also contained in Appendix 1. The semi-annual safeguards monitoring reports once accepted to ADB will be publically disclosed to ADB'sand government's websites.

134. **Gender and social dimensions monitoring.** The DMF indicators require measurement of the number of women included in consultations and training of construction workers and communities. Project performance against these indicators will be monitored through the M & E system of quarterly and annual reporting. PMU quarterly progress reports will also include reporting of progress against all identified gender activities, including opportunities, challenges and lessons learned related to integration of gender activities into the project.

C. Evaluation

135. Once the loan and grant are effective, ADB will field an inception mission for MIPU to agree on a checklist on project implementation requirements. ADB and the government will undertake semiannual review mission with the government to review overall implementation of the project. The mission will (i) examine any implementation problems that the project is encountering or is likely to encounter, and work out measures with the EA and IA to resolve them; (ii) review actions required in terms of poverty reduction, environmental impact assessments, gender activities and resettlement plans, and where required, consult with nongovernment organizations; (iii) check on availability and timeliness of budgetary allocations and counterpart staff and funding; (iv) review project expenditures, and estimate whether the project can be completed within the original cost estimates; (v) identify any cost overruns or savings that may materialize under the project, and ascertain the need to reallocate grant and loan proceeds between categories or cancel surplus grant and loan proceeds; (vi) review progress with procurement and disbursement; and verify, based on a comparison of ADB's and

the MIPU's records, the contracts awarded, and commitments and disbursements made; (vii) review the recipient's compliance with particular grant covenants and, where there is any noncompliance or delay, discuss proposed remedial measures with the recipient (including discussions with the external auditor where relevant); (vii) assess the likelihood of attaining the project's immediate development objectives as indicated in the project performance report (PPR); (ix) examine the need to extend the grant and loan closing date, and where required, work out with MFEM the most suitable grant and loan closing date based on a revised implementation schedule, and advise the MFEM and borrower to submit a formal request for extension to ADB; and (x) examine any other matter related to the project that requires ADB's attention. The midterm review will be made after 1 year of the grant effectiveness date.

D. Reporting

136. MIPU will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months; and (ii) a project completion report within 3 months of physical completion of the Project.[24] To ensure projects continue to be both viable and sustainable, project accounts and the executing agency AFSs, together with the associated auditor's report, should be adequately reviewed.

E. Stakeholder Communication Strategy

137. At the outset of the design phase, the PMU will prepare a communications and consultation plan (CCP) for the project. The CCP will be based on methods used in similar projects and follow custom and tradition for communication requirements. Once the process for dialogue with stakeholders at different levels has been established, consultations will be undertaken to share information about the project, receive information from communities and beneficiaries, and discuss potential impacts and mitigation measures. Disclosure of project documents including safeguards assessments and plans will comply with ADB Public Communications Policy 2011 and relevant requirements of laws of Vanuatu (Environmental Protection and Conservation Act). The CPP will also set out the grievance redress mechanism that will be implemented to resolve any project-level complaint or issue. Consultations and communications will be recorded, reported and be subject of monitoring.

XI. ANTICORRUPTION POLICY

138. ADB reserves the right to investigate, directly or through its agents, any violations of the *Anticorruption Policy* (1998, as amended to date) relating to the project.[25] All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.[26]

[24] Project completion report format is available at: http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar

[25] Available at: http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf.

[26] ADB's Integrity Office web site is available at: http://www.adb.org/integrity/unit.asp.

139. To support these efforts, relevant provisions are included in the financing agreement/regulations and the bidding documents for the project. Procurement will follow ADB's *Procurement Guidelines* (2015, as amended from time to time), consultant selection will adopt ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time), and disbursement will be made in accordance with ADB's *Loan Disbursement Handbook* (2012, as amended from time to time).

140. Any suspect of fraud, waste; or misuse of project resources or property will be established through the Ombudsman's Office, Transparency International, government's internal auditors within MFEM, as well the Vanuatu Office of the Auditor General. ADB should be notified immediately in the event or suspicion of fraud, waste or misuse of project resources.

141. To ensure transparency and good governance, MIPU will publicly disclose the use of the loan and grant proceeds on the government's website. For each procurement contract, MIPU will disclose (i) the list of participating bidders, (ii) the name of the winning bidder, (iii) basic details on the bidding procedure adopted, (iv) the amount of the contract award, (v) the list of goods or services purchased, and (vi) the intended and the actual amount of loan and grant proceeds under each contract. d MIPU will see to it that all of its consultants, contractors, and staff are fully aware of, and comply with, the procedures of the government and ADB, including those for implementation, procurement, use of consultants, disbursements, reporting, and prevention of fraud and corruption.

XII. ACCOUNTABILITY MECHANISM

142. People who are, or may in the future be, adversely affected by the project may address complaints to ADB, or request the review of ADB's compliance under the Accountability Mechanism.[27] The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department.

143. A procedure for managing complaints and problems will be established by MIPU to (i) review and redress grievances and complaints of project stakeholders in relation to the project, any service provider, or any person responsible for carrying out the project; (ii) set the threshold criteria and procedures for handling such grievances, for proactively addressing them, and for notifying stakeholders about the mechanism or course of action chosen; and (iii) maintain the records on the above. The DSC will assist MIPU in the establishment of these procedures, proactively addressing them as well as keeping of the records.

XIII. RECORD OF PAM CHANGES

144. {All revisions/updates during course of implementation should retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.}

[27] For further information see: http://compliance.adb.org/.

Appendix 1: Safeguards Compliance Checklists and Outline Contents of Monitoring Reports

Heading/Section	Contents
Introduction	Brief background on the project and subproject; Institutional arrangements for project management and environmental management;
Monitoring Activities	Who participated in the monitoring; Methodology for monitoring (whether checklists prepared etc); When the monitoring was undertaken and what period it covers; Summary of other monitoring undertaken in the period (i.e. form contractor's monthly reports and if any survey/sample monitoring undertaken); Main activities – observations/inspections, consultations, interviews with contractor staff etc
Works in Progress	Details of the works being undertaken, (with photographs); Include whether any environmental training/awareness has been provided to contractor staff in the period (what, by whom etc)
Monitoring Results and Actions Required	Whether works and measures comply with the approved EMP/CEMP and RP; Should follow sequence of items identified in EMP/CEMP and RP and verify that all mitigations measures noted are being implemented; Corrective actions cited (date to be resolved and person responsible on contractor team and verification by IA/PMU)
Summary and Conclusions	Summary of main findings; Main issues identified and corrective actions noted; Can include summary table which can be updated each period to track completion of actions required
Attachments	Monitoring checklist (based on items identified in the EMP/CEMP and RP) refer annex 1 Additional photographs Additional information as required

Checklist for Safeguard Supervision/Monitoring (Environment)

PARD Safeguards Implementation Checklist: Environment

Date:

PROJECT INFORMATION

Loan/Grant No.:	Project Name:	
Approval Date:	Closing Date:	Cumulative Progress (%):
Project Team Leader(s):		Implementing Agency

1) Categorization

(Original)	A	☐	B	☐	C	☐	FI	☐
(additional financing, if any)	A	☐	B	☐	C	☐	FI	☐

(Please complete the following sections if the project has been categorized as A, B or FI)

2) Planning

Documents: EARF ☐ IEE/EIA ☐ No. of IEE/EIA _____ EMP ☐

IEE/EIA Disclosed and Posted on ADB Website: Yes ☐ No ☐ If no, actions? _____

EMP Finalizeded or Updated after Detailed Desig Yes ☐ No ☐ If no, actions? _____

CEMP submitted, reviewed and approved: Yes ☐ No ☐ If no, actions? _____

(Attach a list of subprojects and status if necessary.)

3) Institutional Setup

PIU/PMU Environment Staff Assigned: Yes ☐ No ☐ If no, actions? _____

If yes, Name: _____ Since: ___/___ (month) (year)

Environmental Specialist/Consultant Mobilized: Yes ☐ No ☐ If no, actions? _____

If yes, National Specialist's Name: _____ Since: ___/___ (month) (year)

If yes, International Specialist's Name: _____ Since: ___/___

articipation of Gov. Environment Agency/Division: Yes ☐ No ☐ If no, actions? _____

If yes, Name: _____ Since: ___/___ (month) (year)

Grievance Redress Mechanism Established: Yes ☐ No ☐ If no, why? _____

Allocation of Government Budget: Yes ☐ No ☐ If no, actions? _____

If yes, amount$: ☐

4) Monitoring and Reports

Internal Monitoring System Established: Yes ☐ No ☐ If no, actions? _____

Compliance monitoring incorp. into Q Progress Reports: Yes ☐ No ☐ If no, actions? _____

External Monitor Engaged (if needed): Yes ☐ No ☐ If no, actions? _____

If yes, Name: _____ Since: ___/___ (month) (year)

Monitoring Report Submitted to ADB: Yes ☐ No ☐ If no, actions? _____

If Yes, provide information below

	Baseline Report	Report 1	Report 2	Report 3	Report 4
Submission Date (m/yr)					
ADB Review Date (m/yr)					
Web-posting Date (m/yr)					
Name of ADB Reviewer					

5) Field Review with Participation of Safeguard Specialist/Officer/Staff Consultant Yes ☐ No ☐ If no, actions? _____

If Yes, provide information below _____

Mission Date (m/yr)							
Type of mission:							
Participants (safeguard specialist/officer/staff consultants)							

6) Compliance with Loan Covenants

List of key covenants in loan and project agreement

Item #	Covenant	Compliance rating*	Describe status of compliace

*Note: Yes ; No; Not yet due

Overall safeguard rating (e-Operation):

S = Satisfactory; PS = Partly Satisfactory; US = Unsatisfactory

7) Status of Implementation of EMP Activities (Please provide a cross reference if it is already covered under Section 6 above)

	Items	Yes/No	Describe Implementation Status

8) Major Issues or Complaints (Cumulative)

	Item	Description
1	Issue	
	Proposed Action(s)	
	Follow-up Issues/Actions	
	Final Resolution of Issue	
2	Issue	
	Proposed Action(s)	
	Follow-up Issues/Actions	
	Final Resolution of Issue	

*Add rows as needed.

Prepared by:

Date:

Confirmed by:

Team Leader:

Date:

Confirmed by:

Safeguard Specialist/Officer:

Date:

To: Sector Director/Country Director

cc: Project Team Leader; PARD Safeguard Specialist

IEE = initial environmental examination; EIA = environmental impact assessment; EMP = environmental management plan; FI = financial intermediary; MTR = mid-term review; PCR = project completion review; PIU/PMU = project implementation/management unit; TL = team leader; EARF = environmental assessment and review framework; SS = safeguard specialist

Checklist for Safeguard Supervision/Monitoring (Resettlement)

Checklist for Safeguard Supervision: Involuntary Resettlement

PROJECT INFORMATION

Loan/Grant No.:	Project Name:	
Approval Date:	Closing Date:	Cumulative Progress (%):
Project Team Leader(s):		Project Analyst:

1) Resettlement Categorization

	(Original)	A		B		C		FI	
	(additional financing, if any)	A		B		C		FI	

(Please complete the following sections if the project has been categorized as A, B or FI involving land acquisition/resettlement issues)

2) Resettlement Planning

Resettlement Planning Documents: RF ☐ RP ☐ Number of RPs_____ ESMS ☐

RP Finalized or Updated after Detailed Design: Yes ☐ No ☐ If no, actions?

(Attach a list of subprojects and status if necessary.)

Final/Updated RP Disclosed and Posted on ADB Website: Yes ☐ No ☐ If no, actions?

Compensation Rates Approved by the Government: Yes ☐ No ☐ If no, actions?

3) Institutional Setup for Resettlement

PMU Resettlement Staff Assigned: Yes ☐ No ☐ If no, actions?

If yes, Name: Since: (month) / (year)

Resettlement Specialist Consultant Mobilized: Yes ☐ No ☐ If no, actions?

If yes, Name: Since: (month) / (year)

Grievance Redress Mechanism Established: Yes ☐ No ☐ If no, why?

Allocation of Government Budget: Yes ☐ No ☐ If no, actions?

If yes, amount$:

4) Resettlement Monitoring and Reports

Internal Monitoring System Established: Yes ☐ No ☐ If no, actions?

External Monitor Engaged (if needed): Yes ☐ No ☐ If no, actions?

If yes, Name: Since: (month) / (year)

Monitoring Report Submitted to ADB: Yes ☐ No ☐ If no, actions?

If Yes, provide information below

	Baseline Report	Report 1	Report 2	Report 3	Report 4
Submission Date (m/yr)					
ADB Review Date (m/yr)					
Web-posting Date (m/yr)					
Name of ADB Reviewer					

5) Resettlement Field Review with Participation of Safeguard Specialist/Officer/Staff Consultant Yes ☐ No ☐ If no, actions?

If Yes, provide information below

Mission Date (m/yr)							
Type of mission							
Name of safeguard specialist/officer/staff consultants							

6) Compliance with Loan Covenants

List of key covenants in loan and project agreement

Item #	Covenant	Compliance rating*	Describe status of compliance

*Note: Yes ; No; Not yet due

Overall safeguard rating (e-Operation):

S = Satisfactory; PS = Partly Satisfactory; US = Unsatisfactory

7) Status of Implementation of Resettlement Activities (Please provide a cross reference if it is already covered under Section 6 above)

	Items	Yes/No	Describe Implementation Status
1	**Satisfactory Consultation**: clear responsibility; identification of stakeholders; consultations undertaken; and documentation		
2	**Information of APs**: database/inventory; ID cards		
3	**Land Acquisition:** Notification, survey, approvals		
4	**Payment of compensation** and allowances		
5	**Relocation of affected assets and structures**		
6	**Rehabilitation** income generation, employment		
7	……		

8) Major Resettlement Issues or Complaints (Cumulative)

	Item	Description
1	Issue	
	Proposed Action(s)	
	Follow-up Issues/Actions	
	Final Resolution of Issue	
2	Issue	
	Proposed Action(s)	
	Follow-up Issues/Actions	
	Final Resolution of Issue	

*Add rows as needed.

Prepared by:	**Confirmed by:**	**Confirmed by:**
Project Analyst:	Team Leader:	Safeguard Specialist/Officer:
Date:	Date:	Date:

To: Sector Director/Country Director

cc: PAU Head; PARD Safeguard Specialist

ESMS = environmental and social management system; FI = financial intermediary; MTR = mid-term review; PCR = project completion review; PAU = Project Administration Unit; PIU/PMU = project implementation/management unit; TL = team leader; RP = resettlement plan; RF = resettlement framework; SS = safeguard specialist

Appendix 2: Subproject Selection and Eligibility Criteria

1. The Cyclone Pam Road Reconstruction Project (the Project) will be provided through a sector approach to reconstruction and 'building back better' transport infrastructure damaged by the floods as well as storm surges by Cyclone Pam. The Project will include repairs to roads, bridges, bridge approaches, culverts and drainage systems, land slide stabilization and road and river bank protection works including disaster and climate proofing on the Efate ring road. The sector approach allows the government to take lead in identifying, prioritizing, appraising, designing, and implementing prioritized segments of road network as 'subprojects'.[1] The Ministry of Infrastructure and Public Utilities through Public Works Department and the design and supervision consultants (DSC) in the project management unit (PMU) will prioritize the subprojects on behalf of the government. The approval of the subprojects will be based on satisfactory technical, economic, safeguards screening following compliance with eligibility criteria.

2. Subprojects will meet the following general eligibility criteria. The subprojects will reconstruct, with appropriate climate and disaster proofing, transport infrastructure damaged by the floods and storm surges, and assessed as high development priorities based on their contribution to the regular connectivity to the national capital of Port Vila, central market, business centers and hospital, particularly:

(i) improved accessibility to social services to rural households, including schools, health facilities, and government extension services;
(ii) potential for increased private sector participation in civil works activities;
(iii) potential to catalyze development around the Efate Island particularly in tourism; and
(iv) reduce vehicle operating costs, travel related time and improved reliability of access to social services

3. Subprojects will be economically viable, and will demonstrate an economic internal rate of return (EIRR) not less than 10%. An economic analysis will be conducted in accordance with Asian Development Bank's (ADB) guidelines for the economic analysis of projects.[2] Road segments with damaged infrastructure will be selected for the economic analysis. The economic due-diligence will cover cost-benefit analysis as well as alternative and least cost analysis, sensitivity analysis, and sustainability analysis, among other areas of the economic due diligence.

4. Environmental screening will be conducted for all subprojects. No subproject classified as Category A in accordance with ADB's Safeguard Policy Statement 2009 (SPS),[3] will be eligible for funding under the Project. If any of the following are found applicable to the site or proposed works, the subproject will not be accepted as part of the Project:

(i) roads in or adjacent to areas determined as critical or natural habitat, protected areas, or ecologically sensitive;
(ii) requirement for major re-alignment of the existing road;
(iii) significant loss or damage to near-shore marine environments, such as reefs, mangroves, or other sensitive coastal areas;
(iv) permanent negative effect on a known rare, threatened or endangered species;

[1] The individual site damages are not individual subprojects.
[2] ADB. 1997. *Guidelines for the Economic Analysis of Projects.* Manila.
[3] ADB. 2009. *Safeguard Policy Statement.* Manila.

(v) permanent damage to cultural relics and tambu sites or other physical cultural resources.

5. Screening for land acquisition and resettlement impacts will be conducted for all subprojects. No subproject that would entail significant land acquisition/involuntary resettlement impacts according to Department of Environment Protection and Conservation Act (2010) and ADB's SPS (2009) will be eligible for funding under the Project.[4]

6. Most of the potential subprojects on Efate ring road except the damaged road sections and the protection works have been identified in the Impact Assessment Report on Efate and Epi Islands Transport Infrastructure[5] and listed in the Project Administration Manual. The damaged sites have been identified in consultation with the government and all the civil works for rehabilitation at these sites are included for financing under the project.

7. The MIPU assisted by the PMU will conduct and document an assessment of each subproject based on the criteria. Each assessment will involve collecting and analyzing baseline data to determine the detailed feasibility and impacts expected, using generally accepted transport planning methods. Community consultations will be conducted to (i) validate baseline data; (ii) identify positive and negative impacts; and (iii) evaluate technical, social, and environmental risks. Throughout the process, particular attention shall be paid to data collection to enable benefit monitoring.

8. Each subproject assessment will include (i) a technical feasibility assessment (engineering, hydraulics and hydrology, climate change adaptation and disaster risk reduction); (ii) an economic impact analysis; and (iii) safeguards assessments, plans or reports following the project's environmental assessment and review framework and resettlement framework. Technical specifications, design and construction standards will be elevated to appropriate levels. The flood frequencies and levels of rivers or natural streams or drainage channels shall be considered during the design. Wherever applicable, geotechnical investigations shall be undertaken and slope protection and stabilization measures considered for land slide areas. Details of geotechnical investigations and protection of the road including drainage improvement are provided in the report in footnote 4 below.

9. Each component of the assessment will confirm acceptable ratings against the criteria, or recommend further work to complete the assessment. Before the detailed engineering design of any subproject, and its inclusion for financing under the Project, proposed subprojects are subject to approval by the Government's Program Recovery Committee and ADB.

[4] The involuntary resettlement impacts are considered significant if 200 or more persons will experience major impacts, which are defined as (i) being physically displaced from housing, or (ii) losing 10% or more of their productive assets (income generating). "Involuntary resettlement" includes both physically displacement (relocation, loss of residential land, or loss of shelter) and economically displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of involuntary acquisition of land, or involuntary restrictions on land use or on access to legally designated parks and protected areas.

[5] Government of Vanuatu. 2015. *Tropical Cyclone Pam-Vanuatu Impact Assessment Report-Structural Engineer (Bridges) for Emergency Response and Recovery Assessments*. Port Vila; Pacific Region Infrastructure Facility. 2015. Scoping Study for Klems Hill Land Slide and Drainage Improvement. Sydney.