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January 3, 2020

Closing Date: Thursday, January 23, 2020 at 6:00 p.m.

FROM: Acting Vice President and Corporate Secretary

Vanuatu - Vanuatu Climate Resilient Transport Project under the Pacific Climate Resilient Transport Program

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed credit and grant to Vanuatu for a Vanuatu Climate Resilient Transport Project under the Pacific Climate Resilient Transport Program (IDA/R2020-0001), which is being processed on an absence-of-objection basis.

Distribution:
Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
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Report No: PAD3361

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED CREDIT
IN THE AMOUNT OF SDR 25.9 MILLION
(US$35.5 MILLION EQUIVALENT)

AND A
PROPOSED GRANT
IN THE AMOUNT OF SDR 22.3 MILLION
(US$30.5 MILLION EQUIVALENT)

TO THE

REPUBLIC OF VANUATU

FOR A

VANUATU CLIMATE RESILIENT TRANSPORT PROJECT
UNDER THE PACIFIC CLIMATE RESILIENT TRANSPORT PROGRAM

December 31, 2019

Transport Global Practice
East Asia And Pacific Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective November 30, 2019)

Currency Unit =	Vanuatu Vatu (VUV)
VUV117 =	US$1
US$1.3729 =	SDR 1

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Victoria Kwakwa
Country Director:	Michel Kerf
Regional Director:	Ranjit Lamech
Practice Manager:	Almud Weitz
Task Team Leaders:	Dung Anh Hoang, Naoki Kakuta

ABBREVIATIONS AND ACRONYMS

AFD	Agence Française de Développement (French Development Agency)
ARAP	Abbreviated Resettlement Action Plan
ASA	Advisory Services and Analytics
CAT-DDO	Catastrophe-Deferred Drawdown Option
CBR	California Bearing Ratio
CCA	Community Conservation Area
CERC	Contingent Emergency Response Component
CESMP	Contractor's Environmental and Social Management Plan
DA	Designated Account
DBST	Double Bituminous Surface Treatment
DCP	Dynamic Cone Penetrometer
DFAT	(Australian) Department of Foreign Affairs and Trade
DRM	Disaster Risk Management
DSC	Design and Supervision Consultant
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EU	European Union
FMIS	Financial Management Information System
GAP	Gender Action Plan
GBV	Gender-Based Violence
GCF	Green Climate Fund
GDP	Gross Domestic Product
GESI	Gender Equality and Social Inclusion
GFDRR	Global Facility for Disaster Reduction and Recovery
GIS	Geographic Information System
GOV	Government of Vanuatu
GRM	Grievance Redress Mechanism
GRS	Geosynthetic Reinforced Soil
GRS	Grievance Redress Service
GRSF	Global Road Safety Facility
IDA	International Development Association
IMF	International Monetary Fund
IPF	Investment Project Financing
JICA	Japan International Cooperation Agency
M&E	Monitoring and Evaluation
MCCA	Ministry of Climate Change Adaptation
MFAT	(New Zealand's) Ministry of Foreign Affairs and Trade
MFEM	Ministry of Finance and Economic Management
MIPU	Ministry of Infrastructure and Public Utilities

NDMO	National Disaster Management Office
NGO	Non-Governmental Organization
NSDP	National Sustainable Development Plan
OM	Operations Manual
PAD	Project Appraisal Document
PCRTP	Pacific Climate Resilient Transport Program
PDO	Project Development Objective
PIC	Pacific Islands Countries
PISR	Project Implementation Status Report
PIU	Project Implementation Unit
PLTA	Public Land Transport Association
POM	Project Operations Manual
PPA	Project Preparation Advance
PPSD	Project Procurement Strategy for Development
PST	Project Support Team
PWD	Public Works Department
RCC	Reinforced Cement Concrete
R4D	Roads for Development
RIMS	Road Inventory Management System
RPF	Regional Partnership Framework
RSSAT	Road Safety Screening and Appraisal Tool
RTSIDS	Resilient Transport in Small Island Developing States
SCD	Systematic Country Diagnostic
SIDS	Small Island Developing States
SOP	Series of Projects
STEP	Systematic Tracking of Exchanges in Procurement
TA	Technical Assistance
VAC	Violence against Children
VCRTP	Vanuatu Climate Resilient Transport Project
VIRIP	Vanuatu Infrastructure Reconstruction and Improvement Project
VISIP	Vanuatu Infrastructure Strategic Investment Plan
VMGD	Vanuatu Meteorology and Geo-hazards Department
VNAO	Vanuatu National Audit Office
VUV	Vanuatu Vatu
VWC	Vanuatu Women’s Center
WHO	World Health Organization

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Vanuatu	Vanuatu Climate Resilient Transport Project	
Project ID	**Financing Instrument**	**Environmental Assessment Category**
P167382	Investment Project Financing	B-Partial Assessment

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[✓] Contingent Emergency Response Component (CERC)
[✓] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-linked Indicators (DLIs)	[✓] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
23-Jan-2020	31-Dec-2025

Bank/IFC Collaboration

No

Proposed Development Objective(s)

To improve the climate resilience of the Recipient's road network, with emphasis on the selected project road, and in the event of an Eligible Crisis or Emergency, to provide an immediate response to the Eligible Crisis or Emergency.

Components

Component Name	Cost (US$, millions)

Component 1: Sectoral and Spatial Planning Tools	0.28
Component 2: Climate Resilient Infrastructure Solutions	60.75
Component 3: Strengthening the Enabling Environment	4.97
Component 4: Contingent Emergency Response	0.00

Organizations

Borrower:	Republic of Vanuatu
Implementing Agency:	Ministry of Infrastructure and Public Utilities

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	66.00
Total Financing	66.00
of which IBRD/IDA	66.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	66.00
IDA Credit	35.50
IDA Grant	30.50

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount
Vanuatu	35.50	30.50	0.00	66.00
National PBA	35.50	30.50	0.00	66.00
Total	**35.50**	**30.50**	**0.00**	**66.00**

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2020	2021	2022	2023	2024	2025	2026
Annual	0.59	3.77	5.19	8.76	15.63	20.09	11.97
Cumulative	0.59	4.36	9.55	18.31	33.94	54.03	66.00

INSTITUTIONAL DATA

Practice Area (Lead)

Transport

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	High
2. Macroeconomic	High
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other	
10. Overall	High

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04	✓	
Forests OP/BP 4.36		✓
Pest Management OP 4.09		✓
Physical Cultural Resources OP/BP 4.11		✓
Indigenous Peoples OP/BP 4.10	✓	
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Sections and Description

The Recipient shall, by no later than three months after the Effective Date, establish and thereafter maintain, until the Closing Date, a Project Implementation Unit within the Ministry of Infrastructure and Public Utilities, with a mandate, composition and resources satisfactory to the Association, which shall be responsible for day to day implementation of the Project. The Recipient shall ensure that Project Implementation Unit includes the following minimum personnel: (i) a Project Implementation Unit head; (ii) a finance manager; and (iii) a community liaison officer; each with terms of reference, qualifications and experience satisfactory to the Association. (Section I.A.1 and I.A.2 of Schedule 2 to the Financing Agreement)

Sections and Description

The Recipient shall, by no later than six months after the Effective Date, establish and thereafter maintain, until the

Closing Date, a Project Support Team within the Project Implementation Unit, with a mandate, composition and resources satisfactory to the Association, which shall be responsible for supporting the Project Implementation Unit to implement the Project. The Recipient shall ensure that Project Support Team includes the following minimum personnel: (i) a road and bridge engineer/Project Support Team coordinator; (ii) a procurement specialist; (iii) a financial management specialist; and (iv) an environmental safeguards specialist; each with terms of reference, qualifications and experience satisfactory to the Association. (Section I.A.3 and I.A.4 of Schedule 2 to the Financing Agreement)

Sections and Description

The Recipient shall: (a) by not later than six months after the Effective Date, prepare and adopt a Project Operations Manual; and (b) thereafter ensure that the Project is carried out in accordance with the Project Operations Manual. (Sections I.B.1 and I.B.2 ofSchedule 2 to the Financing Agreement)

Sections and Description

The Recipient shall, by no later than twelve months after the Effective Date, execute a Memorandum of Understanding, under terms and conditions satisfactory to the Association, between the Ministry of Infrastructure and Public Utilities Public Works Department and the Vanuatu Meteorology and Geo-Hazards Department and National Disaster Management Office within the Ministry of Climate Change Adaptation. (Section I.C.1 of Schedule 2 to the Financing Agreement)

Sections and Description

The Recipient shall carry out, jointly with the Association, not later than three years after the Effective Date, or such other period as may be agreed with the Association, a mid-term review of the Project. (Section II.2 of Schedule 2 to the Financing Agreement)

Sections and Description

The Recipient shall prepare and furnish to the Association, by not later than six months from the Effective Date and July 31 of each subsequent year during the implementation of the Project, for the Association's review and no-objection, an Annual Work Plan and Budget for the Project. The Recipient shall ensure that the Project is implemented in accordance with the Annual Work Plan and Budget accepted by the Association for the respective fiscal year. (Sections I.D.1 and I.D.2 of Schedule 2 to the Financing Agreement)

Conditions

Type	Description
Disbursement	No withdrawal shall be made for Emergency Expenditures under Category (2) unless and until the Association is satisfied that all of the conditions listed in Section I.E.2 of Schedule 2 to the Financing Agreement have been met in respect of the said expenditures. (Section III.B.1(b) of Schedule 2 to the Financing Agreement)

I. STRATEGIC CONTEXT

A. Country Context

1. **Vanuatu is a small island nation located in the South Pacific about 2,000 kilometers to the east of Australia.** Comprised of 83 islands, it has a total land area of some 12,200 square kilometers scattered over an exclusive economic zone of about 827,000 square kilometers. With an almost entirely Melanesian population of 272,459 in 2016,[1] Vanuatu is the fourth largest country in the Pacific following Papua New Guinea, Fiji, and Solomon Islands. The country is administratively divided into six provinces – Malampa, Penama, Sanma, Shefa, Tafea, and Torba. Shefa Province includes Efate Island with the capital Port Vila, and Sanma Province mostly consists of Santo Island (also known as Espiritu Santo), the largest island with the city of Luganville. With international ports and airports, these two cities are the gateways for most visitors to Vanuatu.

2. **Vanuatu's per capita gross domestic product (GDP) in 2017 was US$3,159,[2] which sits at the lower end for countries in the region.** The service sector contributes about 60-65 percent of Vanuatu's GDP, with the largest portion coming from tourism. Agriculture, fishing and forestry contributes around 22 percent of Vanuatu's GDP. The country's economy was hit significantly by Cyclone Pam in March 2015 especially tourism, agriculture and forestry, causing economic damage equivalent to 64 percent of the country's GDP. Over the past four years, the economy has recovered well from the cyclone and is on track for slow but sustainable growth. The construction industry has been particularly boosted due to the heavy demand for post-cyclone reconstruction. According to the October 2019 forecast by the International Monetary Fund (IMF), the GDP is expected to increase at an annual average rate of 3.1 percent between 2018 and 2024.

3. **The country's poverty rate, based on the national basic needs poverty line, has barely changed from 13.0 percent of the population in 2006 to 12.7 percent of the population in 2010.[3]** A large proportion of the population (20-50 percent) is concentrated marginally above the poverty line and is highly vulnerable to falling back into poverty. The poverty rate is higher in urban areas, at 18.4 percent of the population in Port Vila and 23.6 percent of the population in Luganville, compared to 10.0 percent of the population in rural areas. The country ranks 138th out of 189 on the 2017 United Nations Human Development Index, placing it in the 'medium human development' category.[4]

4. **Vanuatu is one of the most vulnerable countries in the world to climate change and natural disaster risks.** The island nation suffers from cyclones, drought, extreme precipitation and flooding, and subsequent landslides. These climatic risks are likely to become more intense because of climate change. Around Vanuatu the rate of sea level rise has been on average 6 millimeter annually over the last two decades based on satellite observations.[5] This has made storm surges, cyclones, strong winds, and tsunamis more damaging than ever before. Among countries which suffer average annual losses ranging between 1 and 10 percent of GDP when extreme events strike, Vanuatu ranks second with annual losses of almost 7 percent. Located in the "Pacific Ring of Fire" and the center of the Pacific "cyclone belt", Vanuatu is also highly exposed to geophysical threats such as volcanic eruptions, earthquakes and tsunamis. In May

[1] Vanuatu National Statics Office, Vanuatu: 2016 Post-TC Pam Mini-Census Report, Volume 1, July 2017.
[2] IMF, World Economic Outlook Database, October 2019.
[3] United Nations Development Program (UNDP), Vanuatu Hardship and Poverty Report, Analysis of the 2010 Household Income and Expenditure Survey, 2013. It should be noted that the 2010 Household Income and Expenditure Survey data is the most recent poverty estimates for Vanuatu. A 2018/2019 Household Income and Expenditure Survey is ongoing.
[4] UNDP, Human Development Indices and Indicators, 2018 Statistical Update.
[5] Pacific Climate Change Science Program 2013:4.

2018, the Government of Vanuatu (GOV) was forced to consider permanently evacuating the entire population of Ambae Island due to volcanic eruptions.

5. **Gender constraints in Vanuatu are wide-ranging and entrenched in cultural and historical factors.** Vanuatu is a traditionally male-dominated and largely patriarchal society. In terms of total population, the sex ratio is 105 males to 100 females. Traditional customary law administered by Chiefs and recognized by Vanuatu's Constitution can operate to discriminate against women. Despite ratification of the Convention Against all Forms of Discrimination against Women, several of Vanuatu's laws continue to discriminate against women, for example in relation to matrimonial property, inheritance, and citizenship. Women's political representation in Vanuatu is low, with no women currently represented in national parliament. Only 1.4 percent of members ever elected to parliament have been women. Women and girls do much of the country's agricultural work, representing 96 percent of open-air market vendors, but are under-represented in formal sector employment (36 percent). Current statistics in Vanuatu estimate that 60 percent of Ni-Vanuatu women have experienced physical and/or sexual abuse in their lives. The child sexual abuse rate stands at 30 percent and about 40 percent of young people report that they have exchanged sex for money or gifts.[6] Women and girls are at high risk of assault on public transport. The main service provider to women experiencing or fleeing situations of violence is the Vanuatu Women's Centre (VWC) which currently only has refuges in more populated areas; thus, challenges remain in terms of access for women and girls in remote areas.

6. **Located in the north of Vanuatu, Santo is the largest island in land area and the second largest in population with a total land area of approximately 4,000 square kilometers and a population of 47,899 as of the 2016 mini census.** The island's population has increased at an average rate of 2.0 percent per year between 2009 and 2016. In 2016, the population density of Santo was 12 persons per square kilometer, which is much lower than that of Efate with 93 persons per square kilometer. While the eastern coast of Santo is relatively flat, the western and southern coasts of the island have extensive mountain ranges with several rivers and waterways. Mount Tabwemasana, located on the west coast of Santo, is Vanuatu's highest peak at 1,879 meters. The village of Tasiriki, the western end of the project road, is on the route to the mountain. The annual average rainfall on Santo is approximately 2,300 millimeters with the rainy season from November to April. Santo is a popular tourist destination with 10,349 visitors having travelled to the island in 2018.[7]

B. Sectoral and Institutional Context

7. **The transport sector is under the overall jurisdiction of the Ministry of Infrastructure and Public Utilities (MIPU).** Established in 2005, the Ministry has the mandate to develop, maintain, and manage the key national infrastructure assets in the areas of land transport, maritime transport, aviation and water supply. MIPU consists of: Public Works Department (PWD); Ports and Maritime Department; Civil Aviation Authority; and Corporate Services Unit.[8] PWD is responsible for the road network (including vehicle carriageways, bridges, watercourse crossings, footpaths and drainage systems), outer island air strips, and some water and sanitation facilities. PWD has a total of 153 staff positions, of which 31 are based at the Head Office in Port Vila and 122 are spread across the six PWD's Provincial Divisions. About 20 percent of positions are vacant. MIPU is implementing the ongoing World Bank-funded Vanuatu Infrastructure Reconstruction and Improvement Project (VIRIP).[9]

[6] Pacific Women Shaping Pacific Development.
[7] Vanuatu National Statistics Office, Statistics Update: International Visitor Arrivals, October 2019.
[8] There are also six statutory bodies attached to MIPU, including: (i) Airports Vanuatu Limited; (ii) Vanuatu Post; (iii) Ifira Wharf and Stevedoring; (iv) Vanuatu Maritime College; (v) Office of the Maritime Regulator; and, (vi) Commissioner of Maritime Affairs Office.
[9] VIRIP (P156505) was approved on June 17, 2016 with US$25 million equivalent IDA credit and US$25 million equivalent IDA grant. The

8. **The Ministry of Climate Change Adaptation (MCCA) is the primary government entity in charge of climate change and disaster risk management.** Established in 2013 as one of the very first ministries of climate change in the Pacific region, MCCA consists of: Vanuatu Meteorology and Geo-hazards Department (VMGD); National Disaster Management Office (NDMO); Department of Energy; Department of Environmental Protection and Conservation; and, Corporate Services Unit. VGMD and NDMO are particularly relevant for the resilience agenda. The objective of VMGD includes 'improve communication and delivery of weather, climate, climate change, flood, volcano, earthquake information, forecasts, services and warnings'; and the NDMO is mandated to 'enhance Disaster Risk Management (DRM) operations preparedness, response and recovery for a safer, secure and resilient Vanuatu'.[10]

9. **MIPU is currently developing the Transport Sector Strategy.** The National Sustainable Development Plan (NSDP) 2016 to 2030[11] sets out fifteen goals within society, environment and economy pillars to achieve the National Vision of a stable, sustainable and prosperous Vanuatu. One goal is to improve infrastructure, another to develop climate and disaster resilience, while others refer to improvements in access to markets and services. The Vanuatu Infrastructure Strategic Investment Plan (VISIP) 2015-2024[12] sets out a costed program of works using government and development partner funds to improve transport and other infrastructure. Rehabilitation of South Santo Road is listed in VISIP among the first priority road investments. In the 2018–2020 Corporate Plan,[13] MIPU has formulated an initial program of actions to achieve the NSDP goals and deliver the works in VISIP. The Corporate Plan notes that the implications of the NSDP for transport are that transport systems provide access to services and employment opportunities, and that infrastructure must be resilient and not damage the environment. The actions listed in the Corporate Plan include the development of a Transport Sector Strategy, and the formulation or upgrading of the policies for individual modes, including expansion of the rural roads access policy to cover urban roads and declaration of a national road network, all of which are underway. Other actions in the Corporate Plan include the mainstreaming of gender into infrastructure works and services, revision of the road planning framework to include safety, and development of an asset management system. These are all actions that will be supported by the project. Revision of the organizational structure to better deliver MIPU functions is also listed in the Corporate Plan but is progressing slowly.

10. **The Vanuatu Public Roads Act No. 35 of 2013 classifies public roads that are the responsibility of MIPU.** This classification identifies arterial roads, feeder roads and urban roads.[14] While arterial and feeder roads are found in rural areas on all islands, urban roads are found only in Port Vila and Luganville. As summarized in Table 1, the 2,609 kilometers of rural road network consists of 209 kilometers of sealed road network (8 percent), 1,284 kilometers of gravel road network (49 percent), 1,080 kilometers of earth road network (41 percent), and 35 kilometers of concrete road network (1 percent). Approximately 43 percent of the rural road network (including almost all the sealed road network) are in Sanma Province (with Santo Island) and Shefa Province (with Efate Island), which are Vanuatu's two largest provinces. In Sanma, a total of 703 kilometers of road network exists, of which 73 kilometers (10 percent) are sealed, 537 kilometers (76 percent) are gravel, 90 kilometers (13 percent) are earth, and 3 kilometers (0 percent) are concrete roads. There is a clear need for investment in Sanma's road network: Sanma accounts for 20 percent of the national population and 26 percent of the country's road network, but only 10 percent of Sanma's roads are sealed,

PDO is to (i) reconstruct and/or improve the disaster and climate resilience of selected public-sector assets in provinces impacted by Tropical Cyclone Pam; and, (ii) provide immediate and effective response to an Eligible Crisis or Emergency.

[10] Vanuatu Ministry of Climate Change and Adaptation Corporate Plan 2016-2018.

[11] Department of Strategic Policy, Planning and Aid Coordination, National Sustainable Development Plan 2016 to 2030 – Vanuatu 2030 The Peoples Plan, November 2016.

[12] GOV, Vanuatu Infrastructure Strategic Investment Plan 2015–2024.

[13] MIPU, Corporate Plan 2018–2020, December 2017.

[14] The Act provides for the declaration of public roads along with a fixed road reserve of (i) 15 meters either side of the center line for an arterial road; or, (ii) 10 meters either side of the centerline for a feeder road or an urban road.

compared with 28 percent in Shefa. The sealing of the project roads aims to avoid damage due to high rainfall intensities, ensuring year-round access for road users and reducing the need for frequent regrading and regravelling.

Table 1: Vanuatu Rural Road Network as of December 2018

Province	Sealed	Gravel	Earth	Concrete	Total
Malampa	0.00	268.30	237.42	3.99	**509.70**
Penama	0.00	232.34	210.60	9.89	**452.83**
Sanma	73.35	536.76	89.91	3.40	**703.42**
Shefa	115.80	118.72	166.99	5.42	**406.93**
Tafea	19.92	112.25	338.70	8.97	**479.84**
Torba	0.00	15.68	36.79	3.82	**56.29**
Total	**209.07**	**1,284.05**	**1,080.41**	**35.49**	**2,609.01**

Source: PWD, Road Inventory Management System (RIMS)
Note: This does not include the length of urban roads in Port Vila (171 kilometers) and Luganville (131 kilometers).

11. **Nationwide traffic data collected for the first time in 2016 shows that the road in front of the Vanuatu Agriculture College in Luganville (outside of South Santo Road) has the highest traffic volume on Santo with 1,269 vehicles per day.**[15] Higher traffic volumes (200-500 vehicles per day) are also found in the road corridors near Luganville, including the East Coast Road up to Loreviakarkar and South Santo Road up to Tanovoli. The rest of the road network had low traffic volumes of less than 200 vehicles per day, mostly consisting of small commercial vehicles (pickups).

12. **Due to the overall climatic and geographic features of Vanuatu, the country's road infrastructure is heavily exposed to climate and natural disasters.** This is compounded with the high sensitivity of the road network in Vanuatu towards extreme hazards such as heavy rainfall, flooding, and landslides due to poor structural characteristics and inadequate road maintenance. Out of 2,609 kilometers of rural road network, nearly 90 percent is not sealed, making these roads impassable during heavy rains. Once damaged, gravel roads often do not get timely and adequate maintenance or rehabilitation due to budgetary constraints. In addition, much of the road network is situated on the perimeter of the islands and is only a few meters above sea level, hence extremely vulnerable to cyclones and storm surges. Flood-related disruptions of the road network have significant socioeconomic consequences partly because the existing road network has no alternative route in the event of disruptions.[16]

13. **Vanuatu's poor road infrastructure condition – part of which is due to high exposure to frequent natural and climate change disasters – make road safety measures paramount for the well-being of road users.** In 2016, according to the World Health Organization (WHO), the road safety fatality rate was 15.9 fatalities per 100,000 population,[17] with 43 estimated road traffic deaths in Vanuatu that year.[18] According to the Vanuatu Police Force, the primary cause of road accidents in Vanuatu is speeding. Considering strong growth in vehicle registrations, which are increasing at 12.8 percent per year from 2016 to 2018,[19] the number of road deaths and serious injuries will likely increase without

[15] PWD, Traffic Data Collection – Survey Report, March 2017.
[16] For example, the approximately 200-meter water crossing at Navaka River on South Santo Road never had a bridge. The crossing becomes impassable during heavy rains (it has an even wider floodplain evidenced by banks set well back from the braided channel). When Cyclone Hola hit the area in February 2018, two children were reportedly swept away by the fast-moving river when returning home from school.
[17] The road fatality rate is below that in Tonga (16.8) and the Solomon Islands (17.4) but higher than that in Fiji (9.6), Samoa (11.3), and Papua New Guinea (14.2).
[18] WHO, Global Status Report on Road Safety 2018, Geneva.
[19] According to the National Statistics Office, Quarterly Statistical Indicator January–March 2019, the registration of new motor vehicles in Port Vila and Luganville increased from 1,300 vehicles in 2016 to 1,653 vehicles in 2018.

mitigating measures being out in place. There is no database on road safety, and WHO highlighted that data is seriously underreported. A Global Road Safety Facility (GRSF)-funded road safety management capacity assessment is currently underway to start to address this issue which includes the need to improve road safety audit practices throughout the road lifecycle. Road safety audits are being introduced on road projects funded by some development partners, including for this project.

14. **Effective road maintenance is crucial to reduce vulnerability to climate change and natural disasters and prevent high costs for rehabilitation and reconstruction.** Road maintenance in Vanuatu is currently insufficient. In 2017, GOV allocated VUV 173.7 million to routine maintenance of rural roads, and VUV 174.5 million to periodic maintenance of rural roads. The annual work programs for maintenance are developed through a consultative selection process for the road sections to be maintained, conducted by PWD provincial and head office engineers using data from RIMS supported by embedded international advisers. With the limited budget available, the focus is on ensuring the roads are passable in all weather conditions and improving the resilience of steep sections and water crossings, to increase the percentage of the population that has year-round vehicular access to markets, services and transport hubs. Traditionally, PWD conducted routine and periodic maintenance through force account. The force account share has been reducing over time and in 2017 only about 14.6 percent of the work value was expected to be carried out through the force account, down from 63 percent in 2013.[20] The bulk of the maintenance is now procured through island-based contractors, with community-based contractors undertaking most of the routine maintenance. Contract values are low and for one year due to the GOV procurement conditions, although an administrative process is underway to increase contract values and permit three-year contracts. It is accepted by PWD that there is a need to incrementally migrate to a road asset management system based on life cycle costing, to increase resilience and provide an evidence-based case for increased budget funding for maintenance.

15. **For the proposed World Bank support under VCRTP, GOV has given priority to South Santo Road[21] which is the only road connecting the southern and western part of the island with Luganville.** South Santo Road plays an important role for Santo, linking its east to its west, while also serving transit traffic between its northwest via Tasiriki and Luganville, which functions as a gateway for the northern part of the country (i.e., Torba, Penama, and Sanma Provinces). The road is critical for transportation of fishery and agriculture produces to market in Luganville, as well as for access to employment, health, education, and social services. There are also several tourist sites accessible via the road. Of Sanma's two main arterial roads, East Coast Road between Luganville and Port Olry has been upgraded from gravel to paved road in 2010 with assistance from the Millennium Challenge Corporation, while no major upgrading work has been undertaken for South Santo Road. Upgrading of South Santo Road has therefore been given a high priority in VISIP.

C. Relevance to Higher Level Objectives

16. **VCRTP is consistent with the World Bank Group's Regional Partnership Framework (RPF) Report for nine Pacific Island Countries (PIC9) FY2017–2021 (Report No. 120479).** Using the Systematic Country Diagnostic (SCD), which focuses on the need for interventions that will strengthen preparedness and resilience to climate change and natural disasters, the RPF defines the following four focus areas: (i) fully exploiting the available economic opportunities; (ii) enhancing access to economic opportunities; (iii) protecting incomes and livelihoods; and, (iv) strengthening the enablers of growth and opportunities (macroeconomic management, infrastructure and addressing knowledge gaps). Investments in the road sector will help build resilience to extreme weather events and improve the reliability of the

[20] DFAT, Vanuatu Roads for Development Phase Two, Investment Design Document, September 2018.
[21] The Official Gazette No. 42 dated August 27, 2019 indicates that the road between Luganville and Tasiriki (i.e., South Santo Road) has been declared and classified as an arterial public road under the Public Roads Act No. 35 of 2013.

network. The proposed activities included within VCRTP will contribute to enhancing access to employment opportunities and social services, which will help protect incomes and allow people to exploit available economic opportunities.

17. **VCRTP supports the World Bank Group's twin goals of eliminating extreme poverty and boosting shared prosperity by providing a large share of population with improved road access and contributing to more efficient access to market and services, as well as faster, safer and more affordable road transport.** As indicated in the RPF, investments in public infrastructure, especially connective infrastructure would be essential for the wider economy. Improved climate resilience of Vanuatu's road network will help a large share of population access to market and services, while also helping MIPU-PWD manage and maintain the road network effectively, contributing to long-term economic development in the country.

18. **VCRTP is consistent with the NSDP 2016 to 2030 and VISIP 2015–2024 that have been approved and accepted by GOV.** The proposed project supports the NSDP's objectives, particularly in terms of enhancing infrastructure governance, legislative frameworks and standards for resilient infrastructure and maintenance; and strengthening resilience and adaptive capacity to climate related, natural and man-made hazards. The proposed investments are also aligned with VISIP that lists the rehabilitation of South Santo Road among the first priority road investments.

19. **VCRTP will contribute to the implementation of Vanuatu's Nationally Determined Contributions to the Paris Agreement and National Action Plan for Adaptation**, particularly in terms of building climate resilience across sectors and integrating climate change and disaster risk reduction in key sectors such as transport.

20. **The proposed intervention is complementary to other ongoing and planned activities in Vanuatu**, including: (i) VIRIP (P156505), which includes a major road component that finances a range of road works to undertake spot improvements to road assets; (ii) the Climate and Disaster Resilient Transport in Small Island Developing States (RTSIDS, P164157) Advisory Services and Analytics (ASA), which provides guidance and develop strategies to establish climate and disaster risk-informed road asset management systems (recommendations for a strengthened Climate and Disaster Resilient Road Asset Management System from this study will be utilized to propose the activities to be included under VCRTP);[22] (iii) the Implementation of Innovative and Efficient Bridge Technologies (TF0A6892) ASA, which undertakes an assessment and pilot program to support implementation of two types of innovative bridge construction technologies;[23] (iv) the Road Safety Management Capacity Assessment (TF073163) ASA, which undertakes a national level road safety management capacity assessment, with a focus on crash data collection, recording and analysis;[24] and, (v) the Vanuatu DRM Development Policy Grant with a Catastrophe-Deferred Drawdown Option (CAT-DDO, P168749) to reduce disaster and climate risk and better manage the socioeconomic and fiscal impacts of natural disasters.

[22] Bank-executed trust fund from the GFDRR Japan–World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries was obtained for the programmatic ASA under RTSIDS. The US$1 million grant will be used for the selected countries to (i) assess the climate and natural disaster vulnerability of road assets; (ii) support develop strategies and transition plans to strengthen the resilience of road systems; and, (iii) provide capacity building to counterparts through knowledge exchange events and/or online platforms.

[23] This activity is being conducted under the Solomon Islands Roads and Aviation Project (P166622) and is financed through the Quality Infrastructure Investment Partnership sponsored by the Government of Japan. The US$0.19 million grant is used to demonstrate the application of: (i) pre-fabricated modular bridges that can be shipped to a site and rapidly installed; and, (ii) geosynthetic reinforced soil abutments that can be constructed without specialized equipment.

[24] This activity is being conducted under the Samoa Climate Resilient Transport Project (P165782). The US$0.19 million Bank-executed trust fund from the GRSF was obtained as part of project preparation.

21. **VCRTP will be the fourth project under the Pacific Climate Resilient Transport Program (PCRTP) Series of Projects (SOP),[25] which follow a four-pillared framework for enhancing transport resilience.[26]** Vanuatu's geographical features that have exposed the country to the impacts of climate change and natural disasters, as well as the occurrence of extreme weather events means that it is a priority country for the PCRTP SOP. Through adopting the four-pillared framework of the SOP, VCRTP includes activities that will help to systematically strengthen climate resilience within Vanuatu through: (i) sectoral and spatial planning tools; (ii) climate resilient infrastructure; (iii) strengthening the enabling environment; and, (iv) contingent emergency response. The project components described below are aligned with these four activity pillars. The value of the programmatic approach is that it will support the systematic improvement of resilience across the countries included within the program to address commonly shared issues. In addition, the program offers a multi-pronged approach to support Vanuatu through considering risks in a holistic manner, through the integration of resilient transport interventions into decision-making and implementation. Annex 7 provides further details on the PCRTP SOP.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

22. The Project Development Objectives (PDO) are to improve the climate resilience of the Recipient's road network, with emphasis on the selected project road, and in the event of an Eligible Crisis or Emergency, to provide an immediate response to the Eligible Crisis or Emergency.

PDO Level Indicators

23. Progress will be measured against the following PDO-level results indicators:
(a) Identified planning tools adopted and being used to improve climate resilience of roads (Number);
(b) Length of road upgraded with climate resilience measures (Kilometers);
(c) Number of bridges constructed with climate resilience measures (Number); and,
(d) Identified enabling environment solutions adopted and implemented (Number).

B. Project Components

24. VCRTP consists of the following four components that incorporate the four pillars of the PCRTP SOP (see Annex 2 for more details on project components).

25. **Component 1: Sectoral and Spatial Planning Tools (estimated cost US$0.28 million equivalent).** This component will upgrade the existing RIMS at PWD and its affiliated data collection tools to a Road Asset Management System (RAMS) to enable MIPU better capture, store, update, and utilize road asset data for effective decision making. The RAMS will introduce a system module that systematically integrates climate and disaster risk profiles of the road network as a part of asset inventory (e.g., criticality). These risk profiles will enable PWD to prioritize road maintenance investment based

[25] The first phase includes a series of projects for Samoa, Tuvalu and Tonga. VCRTP will be the fourth project in the programmatic approach and the first project under a second phase of PCRTP.
[26] The framework was adopted by the World Bank's Transport Global Practice (GP) and subsequently incorporated into the GP's flagship report on Moving Towards Climate Resilient Transport that was delivered at the Conference of Parties (COP) 21 in December 2015.

on the level of exposure and sensitivity of road assets to climatic and seismic hazards along with conventional parameters such as road conditions. The RAMS (including the data collection tools) will equip MIPU's budgeting and planning process with accurate and up-to-date asset information, hence increasing the effectiveness of its resource deployment. This component will be informed by the ongoing Global Facility for Disaster Reduction and Recovery (GFDRR)-funded RTSIDS, which assesses the existing road asset management system in Vanuatu and prepares a transition plan to transform the current RIMS into a modernized and risk-informed RAMS.

26. **Component 2: Climate Resilient Infrastructure Solutions (estimated cost US$60.75 million equivalent).** This component will finance design, physical works, and maintenance of South Santo Road to improve its resilience to climate-related hazards and seismic disasters using innovative materials, technologies, and adaptation measures. The investments will include: (i) sealing of the existing 60 kilometers of gravel road between Saint Michel and Tasiriki to enhance road resilience and connectivity during rainy seasons; (ii) construction of ten new bridges to address loss of connectivity issues resulting from previous climatic and seismic disasters; (iii) repair of four existing bridges with improved traffic safety; (iv) construction of 102 single and multicellular box culverts to adapt to the forecasted increases in rainfall volumes and intensities; (v) construction of other ancillary structures to improve climate resilience, such as coastal protection, masonry covered drains, unvented drifts, and gabion retaining walls; and, (vi) procurement of Bailey bridges for traffic diversion and emergency response. The investments will be accompanied by consulting services for detailed design and supervision of civil works (including the establishment of a small-sized quality control laboratory near the project site); and, conducting maintenance on South Santo Road through piloting multi-year performance-based maintenance contracts after the defect liability period.

27. **Component 3: Strengthening the Enabling Environment (estimated cost US$4.97 million equivalent).** This component will strengthen the MIPU-PWD's institutional and regulatory functions for road sector asset management using an asset lifecycle-based approach, and thereby systematically improve the climate resilience of Vanuatu's road network. This will also provide project management support to MIPU-PWD. Proposed sub-components include:

(a) **Sub-component 3.1: Technical Assistance (estimated cost US$1.52 million equivalent).** This will include technical support to MIPU-PWD to: (i) undertake a road condition assessment on the selected road network to assist the MIPU/PWD with monitoring, planning and programming of road works using the RAMS; (ii) update technical specifications based on the 2016 Vanuatu Resilient Road Manual; (iii) improve its construction material testing laboratory in Port Vila, facilitating the utilization of local materials and accreditation of the laboratory for improved quality assurance; (iv) implement the transition plan to put the RAMS into operation; (v) strengthen road maintenance supervision capacity of PWD; (vi) improve practical road management capacity of PWD through piloting the lifecycle-based asset management and undertaking road safety audits and road safety awareness-raising on the Santo's road network outside South Santo Road; and (vii) build climate change capacity within MIPU in collaboration with MCCA through the hiring of a Climate Change Specialist to MIPU-PWD. This subcomponent will also support activities to address the identified gender gap and gender-based violence (GBV)/violence against children (VAC) by implementing the Gender Action Plan (GAP) and the GBV/VAC Strategy prepared for VCRTP (see paragraphs 73-82 for details).

(b) **Sub-component 3.2: Project Implementation Support (estimated cost US$3.45 million equivalent).** This sub-component will finance Project Implementation Unit (PIU)/Project Support Team (PST) contracted staff and operating costs associated with implementation of the project, and yearly audits of the project accounts that MIPU will submit to the World Bank. It is proposed that a PIU, will be established in PWD from the unit currently implementing the World Bank-funded VIRIP as well as several projects funded by other development partners, to

implement VCRTP. A PST will be set up and embedded in the PIU to support MIPU in the implementation of the project.

28. **Component 4: Contingent Emergency Response (US$0 million).** Since Vanuatu will remain vulnerable to climate change and severe weather events, even with the successful implementation of the first three components, supporting post-disaster recovery is an important feature of VCRTP. This zero-dollar component is designed to provide swift response in the event of an Eligible Crisis or Emergency,[27] by enabling GOV to request the World Bank to reallocate project funds to support emergency response and reconstruction.

C. Project Beneficiaries

29. **Consumers, producers and traders along South Santo Road will benefit from: (i) a reduction in transit costs and times for goods and passengers; and (ii) an increase in agricultural and tourism activities.** The direct beneficiaries of the proposed project will be the nearly 29,700 people (male: 15,300, female: 14,400), accounting for 11 percent of the total population, living in the three area councils (Luganville, Canal-Fanafo, and South Santo) connected by South Santo Road, as well as up to 9,100 (male: 4,600, female: 4,500) in four additional area councils (West Santo, North West Santo, East Malo, and West Malo) that connect to the project road by boat. These people will benefit from improved road access to markets and services in Luganville and onward connections to Port Vila, with better road conditions resulting in reduced travel times and lower transport costs. In some cases, the public transport options will likely also be improved as a result of the improved road, with taxis and minibuses complementing the pick-up or four-wheel drive vehicles on some routes, thereby increasing the safety and comfort of passengers using these services.

30. **VCRTP will benefit MIPU-PWD by equipping it with a modern and user-friendly road asset management system and providing fit-for-purpose capacity building for effectively utilizing the asset management system to better perform MIPU-PWD's mandate as the manager of the road networks in Vanuatu.** As a first outcome, the system will enable a more focused investment strategy for areas with the most need. Specifically, by managing road assets using a life-cycle perspective through the asset management system, MIPU-PWD will be able to spend its limited budgets more effectively while improving the overall performance of the road network. Climate change and disaster resilience will be fully embedded into the systems planning, engineering and design, and operations and maintenance of road assets, thereby considerably reducing the costs for reconstruction and rehabilitation from asset deterioration.

31. **The project will support the implementation of Vanuatu's agriculture, fisheries and tourism sector policies through improved road and bridge infrastructure to better facilitate Santo's agriculture production, fish farming and tourism product development and markets.** The proposed project road runs along the areas that produce various crops and livestock. The main cash crops include but are not limited to coconut, cocoa, spices, food crops and forest products such as sandalwood. Cattle farming is also one of the key industries on Santo, and South Santo is one of the main suppliers of beef in terms of volume and quality for the export market. Most cattle farms are particularly concentrated on the flat terrain of South Santo Road between Saint Michel and Maniao River. South Santo is also generating community aquaculture products such as fish farming (tilapia) and prawns with support from the Department of Fisheries. Similarly, the Department of Tourism is reviewing its Provincial Sustainable Tourism Management Plan, which aims to promote Vanuatu's unique environment, culture, customs and people. South Santo holds some unique and pristine ecological and culturally sensitive areas, community conservation areas, local marine management areas,

[27] Defined as "an event that has caused, or is likely to imminently cause, a major adverse economic and/or social impact associated with natural or man-made crises or disasters", OP/BP 8.00, *Rapid Response to Crises and Emergencies.*

kastom taboo areas and areas of high biodiversity. It is anticipated that improved road access will generate traffic associated with agricultural productivity, enhance the fishery industry and boost visitor numbers to South Santo as a destination with massive potential in tourism, and these will directly improve the livelihood of South Santo communities through higher value products from agriculture, fisheries and tourism, and as a result bring better income to rural households.

32. **VCRTP will improve access to markets and social services, which will have a positive impact on women who rely on public transport for their mobility.** Improvements in women's mobility will also contribute to their empowerment as family duties are a major constraint to women's participation in the labor force. These family duties may include subsistence agriculture activities where women are producing food for the family. Due to the improved road, public transport services will become both safer and more frequent, thus allowing women to access markets more efficiently and affordably and increase their income from selling their agricultural products. Safety is a major issue to pedestrians, especially women and children who tend to walk mostly as their main mode of transport. The project will improve safety of pedestrians through the provision of speed reduction measures, sidewalks and signalized crossings near schools, markets and health facilities. In addition, the project will incorporate bus shelters in the project design. Furthermore, women and girls are at considerable risk of harassment and assault in public transport in Port Vila; thus, the project will put in place measures to mitigate this risk including anonymous reporting and data gathering, and women-friendly safe transportation. The participation of women in all community consultations will be ensured and promoted.

D. Results Chain and Theory of Change

Activities	Outputs	Outcomes	Impact
Upgrading RIMS to integrate climate and disaster risk profiles and simple analytics	RIMS upgraded to integrate climate and disaster risk profiles and programs	Identified planning tools adopted and being used to improve climate resilience of roads	**Vanuatu's road networks, with emphasis on the selected project road, are systematically made more resilient to climate and natural disasters**
• Upgrading gravel to paved roads • Constructing/repairing bridges • Installing box culverts • Piloting multi-year performance-based maintenance contracts • Undertaking design and post-construction road safety audits	• Gravel roads paved • Bridges constructed/repaired • Box culverts installed • Multi-year performance-based maintenance contracts piloted • Satisfactory design and post-construction road safety audits completed	Length of road upgraded with climate resilience measures Number of bridges constructed with climate resilience measures	
• Updating technical specifications • Accrediting PWD construction material testing laboratory • Undertaking asset management, road safety support for MIPU-PWD • Implementing GAP and GBV/VAC Strategy • Signing a MOU between MIPU (PWD) and MCCA (VMGD/ NDMO) for data sharing and inter-ministerial collaboration	• Technical specifications updated • PWD construction material testing laboratory accredited • MIPU-PWD's capacity on asset management and road safety improved • Awareness of gender gap and GBV/VAC raised • Data sharing and overall inter-ministerial collaboration enhanced between MIPU and MCCA	Identified enabling environment solutions adopted and implemented	
Including Contingent Emergency Response Component (CERC)	CERC OM adopted and appropriate training undertaken	Improved ability to respond to disasters	

E. Rationale for Bank Involvement and Role of Partners

33. Road transport is one of the most important transport modes for Vanuatu and accounts for the largest budget share under MIPU. Economic development and community livelihood largely rely on road networks, from boosting tourism by connecting international airports to local attractions, to transporting key agriculture products from inland production areas to ports and jetties. However, due to the ineffective asset management and lack of financial resources, road networks in Vanuatu are underdeveloped and poorly maintained. This is further exacerbated by the increasing frequency and severity of climate and natural disasters, which consistently disrupt the connectivity of road networks, jeopardizing the development and livelihood of communities and households. South Santo Road is a typical example. Facing these overlapping challenges, MIPU needs support to improve its road asset management capacity with modernized tools and platforms, utilizing its limited resources more effectively to improve the resilience of Vanuatu's road network against climate and natural disasters. With the considerable experience in both strengthening transport infrastructure and the institutional capacity for better governance in transport sector, the World Bank is well positioned to support GOV to address these challenges.

34. **Existing Relevant Efforts from GOV and Other Development Partners**. GOV has been working to improve the governance and planning of the road sector as well as climate change and disaster management with support from multiple development partners. The following programs are particularly relevant to VCRTP, given their complementary objectives and areas of focus. VCRTP will leverage existing efforts from these programs and maximize the synergy increasing an enabling environment for climate and disaster informed road asset management.

(a) **Asian Development Bank (ADB):** ADB has recently developed a Transport Plan 2030[28] for MIPU, which is under review. It is also supporting the rehabilitation of Efate ring road damaged by the Cyclone Pam floods and storm surge through the Cyclone Pam Road Reconstruction Project.

(b) **Australian Department of Foreign Affairs and Trade (DFAT):** DFAT has a long-term program of ongoing funding and delivery support for MIPU-PWD through the Roads for Development (R4D) program. This started out in 2009 as the Vanuatu Transport Sector Support Program and was renamed R4D in 2010. R4D program is primarily focused on increasing rural road accessibility. It also aims to support PWD to transit from a workforce unit to a road network manager. The R4D program has been integrated into PWD's 2018 work program. The program has been working to introduce some asset management functions into PWD, including establishing a RIMS and a Rural Road Access Framework to guide the planning and operation processes for rural road management. It has also assessed different types of pavement options to optimize the available local road construction material. The second stage of R4D (known as R4D2) has engaged a Gender and Social Inclusion (GESI) Specialist to develop and implement a GESI Strategy. R4D2 which started in early 2019 continues these activities.

(c) **New Zealand Ministry of Foreign Affairs and Trade (MFAT):** MFAT has been supporting MCCA to better understand the impacts of natural hazards through the Pacific Risk Tool for Resilience project. The project aims to tailor the RiskScape tool[29] for application to DRM in PICs and is being piloted in Vanuatu and Samoa. It is managed by the National Institute of Water and Atmospheric Research Limited in collaboration with VMGD, NDMO, the Samoa Disaster Management Office, GNS Science, and Geoscience Division of the Pacific Community.

(d) **Japan International Corporation Agency (JICA):** JICA has historically assisted with bridge infrastructure in Efate

[28] In practice, this could be considered as the Transport Sector Strategy mentioned in the MIPU Corporate Plan 2018–2020.
[29] It is a free software that estimates impacts and losses from natural hazards without needing specialist modelling knowledge.

Island (e.g., Teouma Bridge). In the disaster management space, JICA has recently launched a program to support MCCA to better utilize technologies such as remote sensing and early warning systems to predict and capture seismic activities in Vanuatu. It is also supporting GOV to construct evacuation routes in the events of disasters.

(e) **Green Climate Fund (GCF):** GCF is supporting MCCA to standardize the use of science-based climate information. This is seen as a necessary base to underpin awareness raising and long-term policy planning around climate change. VCRTP will support expansion of the use of climate information services in the road sector. Specific project goals include building technical capacity to harness and manage climate data, developing practical climate information services tools, fostering their use and disseminating tailored climate information.

F. Lessons Learned and Reflected in the Project Design

35. The project draws upon the experiences of the recent World Bank-funded infrastructure projects in Vanuatu, as well as those of recent road projects in the Pacific. Lessons specifically applicable to VCRTP include:

(a) **To address climate change risks, it is necessary to ensure appropriate standards for constructing and maintaining roads, bridges, and culverts are adopted and applied in practice.** The project will draw upon recent work such as the 2016 'Vanuatu Rural Roads Design Guide',[30] as well as other good practice, to improve the overall resiliency of the investments, as well as to build capacity in MIPU-PWD.

(b) **Activities to address climate change need to be undertaken in a holistic manner, including through infrastructure, legislative policies, technology, access to information and capacity building** (human resources, technical and financial capacity) within a range of key government roles and institutions. Effective information sharing between sectoral ministries such as MIPU and the climate change ministry such as MCCA is paramount for building long-term climate resilience in infrastructure including transport. Climatic information needs to be regularly updated, shared, and tailored to inform sectoral planning and budgeting process. The inter-governmental collaboration between the climate change ministry and sectoral ministry goes beyond simple data sharing and includes tailoring and analyzing climate information to be fit-for-purpose to the specific sector, in this case, the road sector.

(c) **Unclear technical requirements in the bid documents for civil works are likely to lead to a prolonged process in awarding the contract to a Contractor; separate contracting with a Designer and Supervision Engineer may lead to prolonged delays in contract implementation due to even small changes in the design document.** All these lessons from the Vanuatu Aviation Investment Project will be drawn under VCRTP with measures to improve the procurement process, including: (i) strengthened requirements specified in the bid documents for civil works; (ii) combining detailed design and construction supervision into a single contract, under which the same consultant is liable for the design during the whole life of the project; and, (iii) strengthened discussion between GOV and the World Bank during bid evaluation to clear any gaps in understanding before submitting to both GOV and the World Bank for final approval/no-objection, etc.

(d) **Poor contract management in similar projects in Vanuatu has impacted the timelines and quality of deliverables by consultants**, including: (i) the unplanned expiry of contracts; (ii) untimely and poor-quality deliverables; and, (iii) difficulties with consultants' staff inputs. VCRTP will hire a Road and Bridge Engineer/PST Coordinator (who

[30] PWD, Vanuatu Rural Roads Design Guide, Incorporating Climate Resilient Design, September 2016, Version No: 2.0.

can also work as an Independent Technical Reviewer) to ensure the quality of the civil works and avoid delays in the implementation of civil works contracts. In addition, a Financial Management (FM) Specialist assisted by a Project Accountant will ensure contract management process meets the project's operational and functional objectives to reduce the risk.

(e) **Land access can be a major impediment to project progress.** All investments are planned within the right of way except for the three locations where realignment of the water crossing is proposed. Paving solutions will be based on local aggregate availability and properties. The project will employ two Social Safeguards Specialists to ensure that the community is appropriately engaged and involved with the project. An International Environmental Safeguards Specialist (with a local Environmental Safeguards Specialist) will help coordinate with them to ensure that safeguards are addressed accordingly.

(f) **The project's approach to mitigate and address GBV/VAC risks is based on previous activities developed in similar country contexts and lessons learned from prior projects and international experience.** GBV is a significant issue in Vanuatu. GBV activities, ranging from prevention to providing support services to survivors of any GBV incidents, will be based on the approach recommended by the "Good Practice Note for Addressing Gender-Based Violence in Investment Project Financing involving Major Civil Works" issued by the World Bank in September 2018.

(g) **An additional layer such as a project steering committee established to provide oversight to the previous projects may lead to delays in making required decisions.** Taking this lesson, implementation arrangements under VCRTP have been designed with emphasis on the following: (i) the project will be implemented using the existing GOV governance structure without adding an additional layer such as a project steering committee; (ii) accountability of MFEM and MIPU will be strengthened with MFEM responsible for overall project execution (including funding control), while MIPU is responsible for overall project implementation; and, (iii) project reporting system will be strengthened to ensure that GOV concerned agencies will be well informed on project implementation status and if any issue/matter arises, a meeting will be called to discuss potential solutions. In addition, MFEM will chair bi-annual meetings to review project implementation status.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

36. Annex 1 gives details on the implementation arrangements. MFEM will be the Executing Agency for VCRTP, while MIPU will be the Implementing Agency. MIPU will implement the project through a PIU to be established within PWD.

37. MCCA will be supporting MIPU with the climate change aspects of the project, including the collection, analysis and sharing of data and in the development of a disaster response and recovery mechanism for the road sector. A memorandum of understanding (MOU) will be signed between MIPU (PWD) and MCCA (VMGD/NDMO) covering these aspects in a form satisfactory to the Association, within 12 months of the effective date of the Financing Agreement, as MCCA has done for inter-ministerial collaboration on other climate change initiatives, including under an ongoing GCF-funded Climate Information Services for Resilient Development Project to improve the use of climatic information service for key sectoral planning.[31] It is noted that there is an existing MOU between departments within MCCA and

[31] The accredited entity for the work is the Secretariat of the Pacific Regional Environment Programme (SPREP).

MIPU under the GCF-funded project. The ongoing GFDRR-funded RTSIDS will also provide recommendations and data to inform activities to be implemented under VCRTP. A CERC Operations Manual (OM), harmonized wherever reasonable with the CERC OM for VIRIP, is being prepared to assist in the implementation of Component 4. The CERC OM must be adopted before implementation of contingent emergency response activities under Component 4.

38. As noted, a PIU will be established within PWD to implement the project within three months of the effective date of the Financing Agreement. The PIU will be developed from the unit currently implementing VIRIP, as well as several projects funded by other development partners. The PIU Head will be a PWD Deputy Director on secondment[32] with experience in project management of World Bank and/or other donor funded projects. The PIU Head will be supported by the Road and Bridge Engineer/PST Coordinator (see the following paragraph for details). The other members of the PIU will comprise current PWD staff, local consultants on contract to PWD and the international consultants that make up the PST. The overall PIU will include: a Finance Manager (PWD staff), two Procurement Specialists (one international, one local), two Environmental Safeguards Specialists[33] (one international, one local), two Social Safeguards Specialists (one international, one local), a Gender Specialist (local),[34] a Community Liaison Officer (PWD staff), an FM Specialist (international), Project Accountant (local), Administrative Officer (local), and a Team Assistant (local).[35] The PIU Head, Finance Manager and Community Liaison Officer are the minimum personnel which must be in place when the PIU is established.

39. A PST, a team of international specialists, will be set up and embedded in the PIU to work with the other members of the PIU to support MIPU-PWD in the implementation of the project. The PST will be established within six months of the effective date of the Financing Agreement and will be composed of five international consultants: (i) a Road and Bridge Engineer/PST Coordinator; (ii) a Procurement Specialist, (iii) an FM Specialist; (iv) an Environmental Safeguards Specialist, and, (v) a Social Safeguards Specialist. Other than the Social Safeguards Specialist, these are the minimum personnel which must be in place when the PST is established. The role of the international specialists will be to provide (with other PIU members) project operational support to MIPU-PWD, capacity development to the other PIU members, and technical assistance on system development. Some of these international specialists (as well as specialists providing support in other areas such as Monitoring and Evaluation - M&E), may provide inputs on an intermittent basis and be shared with other projects funded by the World Bank or other development partners.

40. It is also proposed that most PST specialists will be located at an office at Luganville on Santo. Office space is being provided in an existing government office. To ensure the most effective and efficient delivery of the project, it is anticipated that PIU staff will need to travel between Luganville and Port Vila on a regular basis for meetings. The cost of these trips will form part of the operating costs associated with the implementation of the project.

41. **A Project Operations Manual (POM)** is being drafted to guide all VCRTP stakeholders, particularly implementing agencies, in the management of project activities and must be adopted within six months after the effective date of the Financing Agreement. It includes details on institutional roles and responsibilities for safeguards procedures, M&E, contract management and scheduling. It sets out the format for and provides guidance on writing the monthly and quarterly Project Implementation Status Reports. It describes the operating principles for decision making. The FM

[32] The PWD Deputy Director will be working full time on the project on managing project implementation and will be completely separated from sector management which will remain the responsibility of PWD Director.
[33] It is proposed that the Environmental Safeguards Specialists will be responsible to support climate change-related project elements.
[34] The Gender Specialist (with GBV/VAC and workplace experience) will support MIPU-PWD to implement the GAP and GBV/VAC Strategy.
[35] The PWD members of the PIU are current staff. The local specialist consultants are currently working on similar projects on contract to PWD. The international consultants will be contracted for VCRTP to the extent possible from consultants currently working on VIRIP or other projects in Vanuatu.

Manual, Procurement Plan, Environmental and Social Management Plan (ESMP), GAP and GBV/VAC Strategy are attachments to the POM.

42. An annual work plan and budget will be submitted to the World Bank no later than 6 months from the Effective Date and July 31 of each subsequent year of the implementation of the project.

B. Results Monitoring and Evaluation Arrangements

43. Project M&E will be the responsibility of the PWD PIU, which will prepare project reports for each month and quarter, supported by the PST and the M&E Specialist in the MIPU's Corporate Services Unit. These quarterly reports will be submitted to DG MIPU for review and then transmitted to MFEM for checking compliance with the World Bank requirements before submission by MFEM to the World Bank within 45 days after the end of the quarter. These reports will track progress in terms of distribution of inputs, disbursement of funds, and achievement of targeted indicators as outlined in the Results Framework (Section VI). The key instrument for evaluating VCRTP will be the indicators identified within the Results Framework.

C. Sustainability

44. VCRTP will improve the climate resilience of the country's road network through strengthening the physical robustness of South Santo Road and equipping MIPU as the network manager with tools and institutional capacities to elevate road resilience throughout road asset lifecycle. The institutional strengthening under VCRTP is expected to have a long-lasting positive impact on the overall road sector management. Particularly, the project will help MIPU to integrate climate and disaster risks into the investment planning and budgeting for the road sector. It will also help MIPU to prioritize maintenance and focus on most vulnerable sections of the network, thereby maximizing the effectiveness of limited budgets. The project will also update the current road engineering standards to incorporate resilience measures. Once adopted, the updated standard will be utilized for all future road design and construction in Vanuatu.

45. Maintenance is a concern for the whole road network in Vanuatu, if the accessibility and connectivity provided by the road network is to be sustained. The proposed approach for piloting multi-year performance-based maintenance contracts will help ensure that the road network receives the maintenance that is required. The introduction of new technologies with a focus on climate resiliency strengthening will further enhance the sustainability of the network. VCRTP will support asset management and maintenance regimes through the updating of the road asset management system. This will be fed into broader work already underway to develop a Government asset management system. Maintenance informed by the asset management planning system will contribute to enhancing the longevity of the road network as well as helping to effectively cope with increasing climate risks through a preemptive management approach.

IV. PROJECT APPRAISAL SUMMARY

A. Technical and Economic Analysis

(i) Technical

46. **Assessments of the 65 kilometers of South Santo Road conducted in July 2019 jointly by the World Bank and PWD identified a set of priority interventions aimed at improving the condition and climate resilience of the network.**

South Santo Road under the project starts at the west abutments of Sarakata Bridge in Luganville and ends at the village of Tasiriki. The road is broadly categorized into the following three sections:

(a) The 5.0 kilometers between Sarakata Bridge and Saint Michel is sealed by double bituminous surface treatment (DBST). The section is in good condition with a 6-meter wide carriageway and an observed minimum traffic safety level and signs. It passes through urban and tourism areas. There are no footpaths from the kilometer post 0.5 and the shoulders and longitudinal drainages need to be improved. It is also proposed to provide coastal protection measures near Saint Michel. The following interventions are proposed on this section: (i) repair of Sarakata Bridge with improved traffic safety; and, (ii) construction of ancillary structures, including 500 meters of drainage and footpath, shoulder repair, side drain improvement, and coastal protection near Saint Michel.

(b) The 31.2 kilometers between Saint Michel and Maniao River is gravel surfaced in poor condition. Most of the gravel used for surfacing is coronous. This section is two-lane 4 to 5 meters wide, traversing largely on a flat terrain except at river banks with the shoulder maintained to 1 to 1.5 meters. Of seven river crossings, Maniao River experienced the wash-away of a bridge at least twice in the past. Drainage is poor, leading to the formation of potholes, soft spots, blocked culverts, and puddles. The proposed investments on this section include: (i) sealing of 31.2 kilometers of gravel road; (ii) construction of five new bridges, four of which are small (<20 meters) and could potentially use modular bridges with geosynthetic reinforced soil (GRS) abutments or reinforced cement concrete (RCC) bridges with return type of RCC wing walls integrated with abutments over pile foundations; (iii) repair of two bridges with improved traffic safety; (iv) installation of box culverts; and, (v) construction of ancillary structures, including masonry covered drains and gabion retaining walls against landslides.

(c) The 29.0 kilometers between Maniao River and Tasiriki pass through a rolling terrain with gravel surface in poor condition. Both coronous and river stones are used for surfacing. Due to the terrain and topography, this section experienced flush flood water, storm surge, scouring at abutments, and landslides. Three river crossings reportedly become impassable during heavy rains. Faults on the road include potholes, soft spots, blocked culverts, gully erosion on steeper slopes. The proposed investments on this section include: (i) sealing of the 29.0 kilometers of gravel road; (ii) construction of five new bridges, four of which are large (>30 meters) including the proposed 210 meters of Navaka Bridge and these large bridges will possibly use steel truss superstructure to accommodate the high speed and volume of flood water during rainy seasons;[36] (iii) repair of one bridge with improved traffic safety; (iv) installation of box culverts; and, (v) construction of ancillary structures, including masonry covered drains, coastal protection near Tasiriki, and gabion retaining walls against landslides.

47. **VCRTP will maximize the use of locally available construction materials, specifically coronous and river gravels.** Test results recently completed by MIPU on the engineering characteristics of Navaka River gravels have shown that the gravels, once crushed, can be used as aggregates for both concrete works and asphalt pavement under the project. By using such aggregates, the existing gravel roads will be sealed to avoid accelerated deterioration due to rainfall and traffic. Premix of hot bitumen or DBST will be applied on the majority of the road, while cement concrete will be applied on steep slopes and potential water crossings. Shoulders will be strengthened using hard materials and longitudinal drainages will be installed to avoid shoulder damage and edge break due to runoff water. Base and sub-base courses will be constructed of local river gravel and coronous material where this is found to be suitable during the detailed design. Aggregates will be provided from Santo, potentially from Navaka River in lieu of imported. VCRTP will procure

[36] The provision of a bridge of this size has limited precedence in the Pacific; thus, there is a high uncertainty with the appraisal costs. If the cost of the bridge exceeds available financing, other alternatives to ensure connectivity will be explored.

stone crushing equipment or a stone crusher plant to process the local river gravels, which will be used both for the proposed investments and emergency response during and after the project.

48. **The use of aggregates from Navaka River gravels is expected to bring huge benefits to the country in lieu of imported aggregates that would add approximately 60 percent to the project cost; however, this needs to be confirmed by the detailed design consultant when detailed survey and investigation as well as further test on the quality of the river gravels are carried out.** In the event that the river gravels cannot be used for aggregates which would lead to a financing gap and make it impossible to improve the whole road (including bridges) as planned, the priority for project investment will as follows: (i) construction of ten new bridges; (ii) upgrade of key vulnerable spots to improve climate resilience (e.g., steep slopes, stream crossings, coastal protection) and repair of four existing bridges; and, (iii) upgrade of as many kilometers of road as the project can finance having done (i) and (ii) which are the critical priorities.

49. **The proposed project will conduct a set of studies to screen key climate change and natural hazard that South Santo Road is exposed to and identify corresponding adaptation measures at the beginning of the design consultancy.** These studies will include: (i) identification of critical road links, bridges, and other damageable assets along the road using the results of a mobile light detection and ranging (LiDAR) survey (which is included as part of the design consultancy);[37] (ii) assessment of the likely severity and frequency of climatic and disaster risk impacts in the future for the identified major damageable assets using the best available climate change and natural hazard information; and, (iii) assessment of the socio-economic criticality of the key damageable assets in terms of connectivity, accessibility and key economic activities. Based on these, a geographic information system (GIS)-linked map will be prepared to visually illustrate at-risk areas and damageable assets along the project road; and, prioritization metrics will be recommended. Key damageable assets in the metrics across all categories will apply adaptation engineering solutions to ensure climate and disaster resilience.

50. **A modernized Road Asset Management System will enable MIPU to systematically manage climate and disaster risks threatening road assets and investment in Vanuatu**. By integrating climate and disaster vulnerability profile with conventional road asset parameters, the asset management system will allow MIPU-PWD to channel its limited resources to sections of the network that are most likely to fail in the event of extreme climatic events and natural disasters, jeopardizing the overall connectivity of the entire network. In addition to identifying the most vulnerable assets, the asset management system will also indicate what types and projected intensity of hazards to inform engineers in designing specific adaptation measures to prevent disruptions.

51. **The Road Safety Screening and Appraisal Tool (RSSAT, v2) was used to assess the impact of the project on road safety.** The road improvements will result in an increase in the average speed from 30 to 50 kilometers per hour which, in the absence of road safety interventions, would have increased the risk of a fatality or serious injury by 217 percent. However, the project will be undertaking: (i) road safety audits to ensure that the road infrastructure is safe for vehicles and pedestrians; (ii) providing speed control devices such as speed humps and gateway entry treatments at villages; and, (iii) removing roadside and other hazards. As a result of these activities RSSAT forecasts that the fatality or serious injury risk with the increased speeds is only 8 percent higher than the existing situation. RSSAT indicates that both the with and without project road safety risks are “Low”. Given that there is a low level of fatality or serious injury in the project road, the project will not materially contribute to worsening the situation after the improvements.

[37] Mobile LiDAR is an innovative surveying and mapping solution. It collects 3-dimentional (3D) geospatial information from a moving vehicle, process the data and images, and extract the features rapidly and accurately. Mobile LiDAR differs from the traditional survey (e.g., total station survey) insofar as it minimizes the exposure of field surveyors to traffic. It also differs from airborne LiDAR as it is much closer to the ground/objects and can thus capture the greater details of survey corridors and associated features.

(ii) Economic Analysis

52. **A traditional Cost Benefit Analysis was carried out using the Roads Economic Decision (RED) Model,** which estimates the annual road agency and user's costs (vehicle operating costs, travel time costs, and CO_2 emission costs) over the evaluation period of 20 years. The economic evaluation uses a discount rate of 6 percent and a conversion factor of 0.87 to estimate economic costs. The length of South Santo Road to be upgraded from gravel to paved road under VCRTP totals 60.2 kilometers. The road is currently unpaved in poor condition. The current average daily traffic on the road ranges from 116 to 444 vehicles of which 69 percent are small commercial vehicles (pickups).

53. **The overall economic internal rate of return (EIRR) of the project is 16.9 percent and the net present value (NPV) is US$55.9 million corresponding to a benefit-cost (B/C) ratio of 2.3.** If construction costs were 20 percent higher and the project benefits were 20 percent lower, the overall EIRR is reduced to 10.7 percent. Switching values analysis shows that construction costs would have to increase by 119 percent for the NPV to be equal to zero.[38] Annex 3 provides further details on the economic analysis.

54. **The net increase of CO_2 emissions over the 20-year evaluation period are 12,021 tons, corresponding to 601 tons per year.** The gross CO_2 emissions without the project are 57,193 tons while those with the project are 69,214 tons. The increase in GHG emissions is attributed to the traffic generated by the road upgrade.

B. Fiduciary

(i) Financial Management

55. The existing FM systems are assessed as adequate to meet the FM requirements as stipulated in the World Bank Policy on Investment Project Financing. The project's overall FM risk is rated as "Substantial". There is limited institutional capacity of the implementing agency as noted in the other two World Bank-funded projects implemented by MIPU, with issues such as limited interaction of MIPU staff with project consultants, no oversight, overdue audits, delayed IFRs, weak budget system and poor control of contracts. In addition, MIPU is having implementation capacity issues as the funding for project preparation advance (PPA) activities remains undisbursed since the effective date in February 2019. These institutional capacity issues will be mitigated by the Government hiring a small PST to support MIPU with their daily project operations and to be able to monitor progress of project activities, manage payments and contracts, and deliver efficient financing reporting, ensuring effective and efficient project implementation. Annex 1 provides details on project FM arrangements.

(ii) Procurement

56. Annex 1 provides full details on project procurement arrangements, including details on the major procurement risks and mitigations that have been agreed with MIPU. Procurement for VCRTP will be carried out in accordance with the World Bank Procurement Regulations for Investment Project Financing (IPF) Borrowers (Procurement Regulations), July 2016 (revised November 2017 and August 2018), as well as the approved procurement plan.

57. MIPU will implement the project including all procurement activities, with support by the PST. The PST is responsible for day-to-day procurement handling, monitoring and consolidated reporting of VCRTP. The project will

[38] This indicates that the project would still be economically justified with a possible increase of construction cost by 60 percent due to the import of aggregates.

make use of the World Bank's Systematic Tracking of Exchanges in Procurement (STEP) system.

58. MIPU has developed the Project Procurement Strategy for Development (PPSD) and initial procurement plan. The procurement plan has been finalized at the project appraisal.

59. A procurement risk assessment of MIPU has been carried out. The key risk is limited capacity of MIPU-PWD for procurement and contract management. To mitigate the risk, the project will maintain an International Procurement Specialist within PST to support MIPU-PWD and have a PWD staff designated specifically for procurement as the Local Procurement Specialist within PIU, while also employ an international consulting firm to assist with preparing technical design, procurement documents, and construction supervision.

C. Safeguards

(i) Environmental and Social Safeguards

60. The project triggers four World Bank safeguards policies: (i) Environmental Assessment (OP/BP 4.01); (ii) Natural Habitats (OP/BP 4.04); (iii) Indigenous Peoples (OP/BP 4.10); and, (iv) Involuntary Resettlement (OP/BP 4.12). VCRTP is a Category B project under the World Bank environmental and social screening guidelines and requires the development of an Environmental and Social Impact Assessment (ESIA); an Environmental and Social Management Plan (ESMP); and an Abbreviated Resettlement Action Plan (ARAP). These safeguards instruments include an assessment of potential environmental and social impact and identify the overall management plan to ensure that the project benefits are realized and impacts and/or risks are mitigated in line with the World Bank Safeguards Operational Policies. Table 2 shows the disclosure dates for VCRTP safeguards instrument.

Table 2: Disclosure Dates for VCRTP Safeguards Instrument

Instrument	Disclosure Dates	
	In Country	World Bank's external website
Environmental and Social Impact Assessment (ESIA)	November 21, 2019	November 21, 2019
Environmental and Social Management Plan (ESMP)	November 21, 2019	November 21, 2019
Abbreviated Resettlement Action Plan (ARAP)	November 21, 2019	November 21, 2019

61. **Environmental Assessment (OP/BP 4.01).** The proposed investments under VCRTP are focused on improving the climate resilience of road infrastructure along the 65 kilometers of South Santo Road. Component 1 will involve some Technical Assistance (TA) investments with an objective of enabling policymakers to make informed decisions based on the most accurate and up-to-date information available. All TORs of these TA-related activities, where relevant, will be reviewed by the Safeguards Specialist to ensure that the requirements of the World Bank safeguards policies are effectively integrated. Component 2 will include, among other items, upgrading of gravel to paved road along the corridor, construction of bridges to improve connectivity, and coastal reinforcement to protect the road. These activities are not likely to cause significant or irreversible environmental impacts. Some of the potential adverse environmental impacts could be: soil erosion, decreased water quality, loss of vegetation, fauna disturbance, deposition of solid wastes, and dust emission. Mitigation measures have been addressed in the ESMP which will then be used to guide the preparation of appropriate outcome-based specifications in accordance with the World Bank's procurement policy. The ESMP will also serve as the basis for the Contractor's ESMP (CESMP). There will be land acquisition associated with realignment of access roads for three bridges which will cause marginal loss of productive land for an estimate four households, loss of two house structures as well as loss of trees and crops. Road improvements are expected to be within

the existing road footprint and not expected to cause loss of property. However, this will need to be confirmed during detailed design. The draft ARAP has been prepared to address land acquisition impacts which will need to be updated following detailed design. Indigenous peoples are the main populations residing along the road alignment. Consultations during project preparation have aimed at ensuring free prior and informed consultation as well as broad community support for the project. A stakeholder engagement plan (SEP) has been prepared to guide consultations with traditional leaders and the communities throughout project design and implementation. Component 3 will focus on institutional strengthening, capacity building and provisions for in-country human resource to support VCRTP in meeting its intended objective. Relevant TORs will be reviewed by the Safeguards Specialist to ensure alignment with the ESMP and allow due consideration of potential safeguards implications. Component 4 will be implemented in accordance with the rapid response procedures and a CERC Environmental and Social Management Framework (ESMF) will be included in the CERC OM. This will indicate the kinds of emergency response actions that can proceed with no additional environmental and social assessment, and which ones will require assessment (and at what level) prior to being initiated.

62. **Natural Habitats (OP/BP 4.04)**. The targeted road includes 14 river crossings and a section of coastal reinforcement. While it is documented that the terrestrial environment along the road network is not comprised of natural habitat, the Navaka River system is considered as a natural habitat under the definition of OP/BP 4.04. There have been ongoing human activities at the site (annual gravel extraction and small-scale harvesting of freshwater species for subsistence and aquaculture); however, the area's primary ecological functions have not essentially been modified. The freshwater species as described in the ESIA are largely native. In addition, the ESIA describes that there is one registered Community Conservation Area (CCA) along South Santo Road. CCAs have been introduced to Vanuatu as a more successful approach to resource management and conservation than formal protected area management. CCAs function to both conserve native species/habitats and to support sustainably managed use of natural resources. None of the areas identified fall within a gazette-protected area or National Park. The ESMP includes measures for addressing potential negative impacts on natural habitats and CCAs. See Annex 4 for details.

63. **Occupational Health and Safety (OHS).** All civil works activities will call for contractors to implement appropriate standards for OHS and submit an OHS Management Plan as part of their CESMP using the codes of practice attached to the ESMP. The OHS Management Plan will include issues such as workers compensation, first aid services, sanitation and hygiene at the work place, use of personal protective equipment, site safety and accidents as well as implementation of traffic management plan during construction. The OHS Management Plan will be reviewed and cleared by the supervision consultant, who will then monitor its implementation. There will be strict requirements for reporting on OHS issues, with serious issues and fatalities reported to the World Bank within 24 hours. The contractors will be required to submit monthly reports on leading and lagging OHS indicators, and the supervision consultant on its oversight.

64. **Indigenous Peoples (OP/BP 4.10).** In Vanuatu, all public infrastructure works, including associated resource extraction and use, consider the fundamental right that under the nation's constitution all land in Vanuatu belongs to the indigenous custom owners and their descendants. In practice, this has led to a system of compensatory instruments (both legal and by convention) developed over time in order to supplement the more formal regulatory processes while at the same time acknowledging fundamental land rights. These have been established in order to ensure that resource owners are suitably compensated for loss of natural resources, including crops and forest products, quarried materials etc. As a result, accessing land for infrastructure is a complex mixture of systems.

65. The project traverses 15 villages, with 14 villages under customary land tenure. Customary lands are lands belonging to a tribe or a clan, owned by numerous families with ownership is passed down through families, often without formal registration. The project will improve usability of the road in all weather conditions and access to market

and social services, including health and education, for indigenous communities along the road.

66. There will be land acquisition impacts affecting an estimated five indigenous households as a result of realigning access roads to three bridges. The impacts will result in marginal loss of productive land, loss of structures and crops that will be fully mitigated through the ARAP. The project grievance redress mechanism (GRM) provides for participation of traditional leaders in the process to promote accessibility and effectiveness of the process.

67. Project preparation consultations indicated broad support for the project. Consultations were conducted with land owners and chiefs along the project alignment to present an overview of the project and anticipated impacts and to seek their feedback. There was overwhelming support for the project. Representatives of customary land owners of the proposed three bridge re-alignment sites gave their consent for the realignment through their lands.

68. The SEP has been prepared for the project in which traditional leaders and customary land owners are required to be consulted throughout project implementation. The SEP is included in the ESIA and ESMP and is required to be updated and detailed at the commencement of the project.

69. **Involuntary Resettlement (OP/BP 4.12).** The proposed activities' involuntary resettlement impacts were assessed during project preparation against preliminary project design information. The draft ARAP has been prepared for the project based on field surveys and consultations with communities and affected persons. It describes impacts that could be identified during project preparation along with mitigation measures.

70. Impacts that were identified are related to the realignment of access roads for three bridges to be rebuilt in new locations on the Maniao, Okoro, and Navaka Rivers. These will require realignment of the approach roads and the permanent acquisition of a total estimated 2.85 hectares of farming land, loss of two houses along with trees and crops affecting three customary land owners. The impacts represent marginal losses and do not require resettlement or livelihood restoration measures. The losses of land represent less than 10 percent of total productive landholdings and affected houses can be rebuilt on remaining land owned by the affected households. Mitigation for the loss of land is planned through replacement land of the existing road alignments to be replaced and through customary in-kind gifts from the Government and in-kind compensation for non-land assets at replacement value in accordance with the provisions of the ARAP. Consistent with OP/BP 4.12 requirements, all affected land owners have been consulted and are all agreeable to the proposed land acquisition and restoration measures. GOV has budgeted all funds necessary for compensation for all land and non-land assets.

71. A preliminary assessment of other project activities indicates that involuntary resettlement impacts are not anticipated. Road upgrading, construction of box culverts and replacement of another seven river crossings are planned to be on existing alignments and existing road and bridge footprints. Due diligence of all components will need to be reassessed based on detailed design during implementation.

72. The ARAP will need to be updated during project implementation based on the project's detailed design. The ARAP document describes due diligence requirements to update the ARAP, including review of design to identify and minimize impacts, detailed measurement survey, consultations, valuation of affected assets, requirements for Government approval and World Bank review and non-objection.

73. **There are three gender gaps specifically relevant to VCRTP.** Each of these will be addressed through specific interventions under the project. Progress in closing the gender gaps will be measured in the results framework and the more detailed project M&E framework. Each of these gender result chains are outlined below:[39]

74. **Endorsement of the gender responsive transport policy framework.** Currently the transport sector policy framework does not sufficiently address gender gaps in terms of how male and female are using roads, and how this is impacted by the infrastructure priorities. Likewise, the national gender mainstreaming policy priorities do not currently include the infrastructure, road and transport sector. To address this gap, the project will invest in establishing and convening inter-ministerial and multi-donor policy dialogue between MIPU-PWD, the Department of Women's Affairs, and relevant development partners to discuss agreed recommendations to integrate gender into monitoring implementation of VISIP. Areas where gender gaps should be addressed include at least but not necessarily limited to: women's employment in transport related agencies and projects, provision of safe and affordable transport for women and girls, integrating GBV prevention measures across transport projects. Targets for addressing such gender gaps will help secure that the VISIP M&E are considered gender responsive. The project will track progress on this activity through the following indicator: 'Development of the Gender Responsive Policy Inputs to VISIP M&E (Yes/No)'.

75. **MIPU institutional capacity development for gender mainstreaming and increase in women's representation in staff/management/technical positions.** The MIPU Corporate Plan 2018–2020 states that gender mainstreaming has not taken place, the Inclusivity Policy has not been implemented, and the required action is to revise and implement the MIPU Inclusivity Policy. The key performance indicators of the MIPU Corporate Plan include: implementation of gender inclusivity strategies in all departments, number of female staff in leadership roles, gender-responsive policy and strategies, gender quota and targets for contractors and partners. VCRTP will support MIPU in operationalizing and monitoring the gender components of the MIPU Corporate Plan 2018–2020, and Inclusivity Policy and Plan. This will involve the integration of GBV into the PWD Standard Operating Procedures and draft Safeguards Framework. Specific actions will involve the assignment of a Gender Specialist to establish and agree with management on targets and a budget for interventions to reach them. There are very few women employed in the road and transport sector across all levels: within government agencies, women account for 17 percent of the MIPU employees at central level, and 15 percent of the Samna PWD staff. Out of ten engineering positions only one is occupied by a woman and no women occupy any of the managerial level positions. MIPU's Inclusivity Policy and Corporate Plan demonstrate commitment to increasing women's representation within MIPU as well as contractors, however this is yet to be achieved. R4D2 has developed a gender and social inclusion strategy which aims to support this objective. To support this, VCRTP will, in close coordination with R4D2, work with MIPU-PWD at national and Samna provincial level to increase number of women in leadership and management as well as increasing employment opportunities for women in technical positions.[40] The project will track progress in closing these gender gaps through the following indicator: 'Percentage of women employed in technical positions at MIPU-PWD at national and provincial levels (baseline: 10%, target: 15%)'.

76. **Access to safe and affordable transport for women and girls.** Current mobility patterns and constraints in terms of accessing services, markets and employment opportunities indicate that limited affordable transport constrains

[39] More details are available in the Technical Assessment Report – GAP and Matrix.

[40] Specific activities would be to: (i) assess and revise human resources policies and practices at different points in the employment relationship, at the stages of recruitment, and development and promotion, to identify appropriate actions to strengthen the systems and processes, monitoring and management in terms of equal opportunities; (ii) provide training for women in technical and managerial skills; (iii) support PWD to expand the government led internship program to cover more universities in Vanuatu and the region, and technical and leadership skills training for women within the sector; (iv) support PWD to ensure that contractor bidding and contract documents will require baseline and targets for women's employment at various levels, and to host female interns in technical positions; and, (v) provide training for women staff, as well as skilled and unskilled labor under the contracts.

women's access to markets and health care, and that the risks of GBV and harassment on public transport pose a significant threat to women and girls' personal safety, which also impede their mobility. The issue of violence against women and girls on public transport has been a major concern in Vanuatu. The proportion of women in Vanuatu above the age of 15 years having experienced sexual violence committed by a non-intimate partner is at 33 percent,[41] which is higher than any other Pacific countries and far above the global average of 7 percent. To address this gap, VCRTP will (i) collect data through confidential and anonymous methods such as She's a Crowd[42] on all attempted and actual assaults on public transport to understand the scale of the problem, and the contributing factors and put in place workable solutions; (ii) facilitate a process to develop a proposal and assist on leveraging funds to introduce and promote personal safety measures by ensuring that transport service providers have training and certified drivers and conductors who are aware of how to promote women's safety; and, (iii) initiate a dialogue with the Public Land Transport Association (PLTA) and other development partners to strengthen the regulatory environment for public transport providers through PLTA to ensure that all public bus drivers comply with GBV prevention policies and that transparent and affordable fares are set and maintained. The project will aim to implement these activities in partnership with the Department of Women's Affairs and local civil society organizations (such as Sista and Human Capacity Development International) to pilot the approach in Port Vila and scale out to Santo once the road works are completed and more vehicles and buses are able to operate along the corridor. The results framework will track progress on these activities through the following two indicators: 'Public transport providers and drivers trained in GBV prevention (Yes/No)'.

77. **There are very high levels of GBV and VAC in Vanuatu.** Approximately two in three women in Vanuatu have experienced intimate partner violence, which is twice the global average; and almost half of ni-Vanuatu[43] women (48 percent) have experienced non-partner physical or sexual violence, or both.[44] The child sexual abuse rate is 30 percent and incest rates in Vanuatu against girls under the age of 15 are reportedly among the highest in the region.[45] Although child marriage is prohibited by law, 21 percent of girls are married by age 18.[46] A number of harmful traditional practices (kastom) reinforce gender inequality and perpetuate GBV.

78. The impact of GBV and VAC are wide-ranging, long-lasting, and severe. Victims/survivors of GBV and VAC may experience physical and psychological injury, financial insecurity and homelessness with the most severe cases resulting in premature death. GBV and VAC also have impacts beyond the immediate victim/survivor and can create significant economic, social and development costs, to families, communities, and economies; including increased costs in healthcare, social services and policing. GBV also creates a cost to workplaces and economies through reduced productivity, increased absenteeism and turnover. GBV deters women from seeking certain kinds of employment, decreases female labor-force participation and reduces earnings. GBV and VAC prevents women and girls (and some men and boys) from fully engaging in their families, communities and broader development processes.[47]

79. The project was screened for project-induced GBV impacts using the World Bank's 'GBV Risk Assessment Tool' and was classified within the "Moderate Risk" category. Project activities are likely to cause labor influx, both foreign and national, and introduce or increase salaried labor. This has the potential to shift community power dynamics, increasing risks of GBV and VAC.

[41] DFAT/NZAID, 2011: Vanuatu National Survey.
[42] This is a smartphone app that allows for anonymous reporting of GBV incidents.
[43] This is the term used to describe the indigenous inhabitants of Vanuatu.
[44] Vanuatu Women's Centre, 2011. The Vanuatu National Survey on Women's Lives and Family Relationships. Port Vila, Vanuatu.
[45] Compilation of UN Information, Universal Periodic Review: Vanuatu, 2014, para. 23. Cited in: Coram. Situational Analysis.
[46] http://sdd.spc.int/en/resources/document-library?view=preview&format=raw&fileId=145
[47] World Bank (2016). Gender-Based Violence in the Pacific: Pacific Island Countries.

80. To address project-induced risks in the context of the broader gender gaps present at the project site in a coherent and holistic way, the project will implement a GBV/VAC Strategy. The Strategy will build on previous experience within the Pacific and will align with the recommendations of the September 2018 Good Practice Note (GPN) 'Recommendations for Addressing Gender-Based Violence in Investment Project Financing Involving Major Civil Works'[48]. The strategy will consist of three pillars: (i) needs assessment; (ii) prevention; and, (iii) support services and will focus on project induced GBV risks.

81. The GBV/VAC Strategy will be led by the Gender Specialist in the PIU, in collaboration with the Department of Women's Affairs and in consultation with Sanma Women's Desk Officer, Samna provincial government, local and international organizations. See Annex 5 for further details of the GBV/VAC Strategy.

82. As part of the Results Framework, the following indicators have been included to track the implementation of the GBV/VAC Strategy: (i) 'Proportion of Contractor staff who sign Codes of Conduct'; and, (ii) 'Proportion of Contractor staff who attend GBV & VAC training'.

83. **VCRTP will adopt a robust approach regarding the citizen engagement by involving all stakeholders including beneficiaries and affected persons inclusive of location, age, education, gender, disability, ethnicity and poverty.** It will undertake consultations with the beneficiaries and stakeholders regularly throughout the project cycle. Alongside, the project's GRM will cover all aspects of project implementation and will be available to project beneficiaries, affected persons and other interested parties. The project's GRM will be open to register grievances of citizens from all groups and provide notifications and outcomes back to the concerned citizens. It will be operated by the PIU Community Liaison Officer based on Santo.

(ii) Grievance Redress Mechanisms

84. A comprehensive project-level GRM has been designed for the proposed project to address issues that may occur during project design, construction and implementation. Complaints can be made through different channels, such as the traditional and culturally responsive local practice of using the local chiefs as the priority contact. The chiefs represent tribal groups/clans in the community. Complaints can also be made to the local GBV/Human Trafficking/SAE Service Provider, the manager(s), or the Police. Complaints should be able to be made in different ways such as online, via telephone or mail, or in person.

85. The Community Liaison Officer within the PIU will manage the GRM. He/she will log complaints into the 'Grievance and Complaints Logging System' (GCLS) database for tracking and reporting on resolution. In accordance with the World Bank's 'Citizen Engagement' commitments, the following indicator from the GRM will be published online at the VCRTP website: 'Grievance registered related to delivery of project benefits that are addressed (Percentage)'.

86. This GRM has been developed to satisfy both Vanuatu legislative and the World Bank GRM requirements as well as being developed in line with the Country Safeguard Systems.

87. The proposed project will also develop an effective GRM with anonymous, informal and formal reporting channels to initiate a GBV/VAC complaint. In accordance with the recommendations of the GPN for addressing GBV, the GRM will have confidential processes for managing GBV complaints, including the establishment of a GBV Complaints Team (GCT)

[48] Recommendations for Addressing Gender-Based Violence in Investment Project Financing Involving Major Civil Works. World Bank. October 2018. http://pubdocs.worldbank.org/en/399881538336159607/Good-Practice-Note-Addressing-Gender-Based-Violence.pdf

that will include a representative of the local GBV service provider. The GRM will engage GBV/VAC service provider(s) in the management of GBV/VAC cases (e.g., through the GBV/VAC Complaints Team) and ensure safe and confidential handling of cases.

88. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

V. KEY RISKS

89. **Overall risk rating – High.** The risk ratings for the project have been identified using the Systematic Operations Risks Rating Tool (SORT). The overall implementation risk rating is High. The most relevant risks and associated risk management measures are discussed as follows:

(a) **Political and Governance.** Vanuatu went through a long period of protracted political turmoil until 2016 when a coalition government in power pushed for more stability over a four-year (2016–2019) term, resulting in policy directives. In 2017, the NSDP 2016 to 2030, which mirrored the Sustainable Development Goals was adopted. This is the country's highest-level policy framework. Recently changed Minister and senior public servants in the infrastructure sector advocated for policy emphasis and priorities in alignment with this national vision. However, the Minister might be changed as a result of the national general election in March 2020. This could lead to policy changes. To mitigate the risk, the proposed project is founded on the first priority investments in the approved infrastructure strategic investment plan for 2015–2024, and the NSDP. The investment priority has been confirmed by the current government and supported by successive senior public servants in MIPU and the Sanma Provincial Government. Revisions to the organizational structure of MIPU are the subject of ongoing discussion but are progressing slowly and are not considered a significant risk to delivery of the investments. However, they could slow the implementation of other measures.

(b) **Macroeconomic.** Over the period 2018–2024, real GDP growth is expected to grow by an annual average of 3.1 percent; however, this outlook is subject to several downside risks. First, the ever-present threat of natural disasters and climate change could negatively impact economic activity and cause large damages and losses to both the public and private sectors. Vanuatu is the world's most at-risk country for natural disasters according to the UN World Risk Index, which measures exposure to natural hazards and the capacity to cope with and adapt to these events. Vanuatu is classified as having a moderate risk of debt distress, although its external public debt has risen sharply since 2014, partly because the government needed to finance reconstruction after Tropical Cyclone Pam, where damages and losses are equivalent to 60 percent of GDP. Second, current growth projections assume that ongoing public reconstruction activities are implemented on time; such that substantial delays in implementation would alter the outlook for economic activity. Third, additional spending pressures (including those associated with capital spending and state-owned enterprises) could place a strain on public finances,

especially given the delayed implementation of key revenue mobilization measures (notably the implementation of income tax) and the current reliance on citizenship schemes which are inherently volatile. Lastly, while the impact of weaker-than-expected global growth and the withdrawal of correspondent banking has to date been limited, these continue to pose a latent risk on the external front. This risk can be mitigated through the World Bank's growing engagement on fiscal management issues. In addition, the proposed climate resilience measures under VCRTP will help strengthen the country's road sector, both in terms of infrastructure and institutional management capacity, and to make it more resilient to climate and natural disasters; thus, it will help reduce the damages and losses from disasters and improve Vanuatu's capacity for post disaster rapid response. Promoting the use of local materials for road construction under the project will also help lower unit construction costs and as a result lessen the country's financial burden linked to public infrastructure building. The proposed implementation arrangements, built upon the lessons drawn from previous projects, have been designed as another mitigation measure against delayed implementation.

(c) **Technical design of project.** The low capacity environment, the remoteness of the project location, the uncertainty faced by climate change, and most importantly the technical challenges pose a technical design risk of the project. This risk is exacerbated as the overall project cost is contingent on the availability of local aggregates. To mitigate this risk, an internationally-experienced firm with experience in remote locations such as Santo will be hired by MIPU-PWD to conduct both detailed design and supervision for the project. It was also agreed with MIPU that, in the event that the construction cost exceeds available financing, the project scope will be reduced and investments will be prioritized as follows: (i) construction of ten new bridges; (ii) upgrade of key vulnerable spots to improve climate resilience (e.g., steep slopes, stream crossings, coastal protection) and repair of four existing bridges; and, (iii) upgrade of as many kilometers of road as the project can finance having done (i) and (ii) which are the critical priorities. The risk will also be mitigated through the ongoing and planned ASAs in the areas of asset management, quality infrastructure, and road safety.

(d) **Institutional capacity for implementation and sustainability**. Limited capacity in the public sector poses a risk that could affect the implementation of the proposed project. This risk is exacerbated as the project involves activities in several different locations along the corridor, which requires greater resources. It is unlikely that the project will be significantly affected by the slow pace of the ongoing transport sector reform. The use of the PIU (including the PST) to support MIPU in the implementation of the project will mitigate risks to the project but cannot solve the overarching longer term institutional limitations in MIPU-PWD.

(e) **Fiduciary.** Limited institutional capacity of the implementing agency and a small pool of local expertise in procurement and FM poses a fiduciary risk for the project. This is planned to be mitigated by: (i) PWD designating a specific PIU; and, (ii) hiring a small PST to be embedded and provide support to the PIU on their daily operations. Procurement and FM assessments are summarized in Annex 1.

(f) **Environmental.** The proposed activities and investments included under VCRTP are focused on improving the climate resilience of road infrastructure along the 65 kilometers of South Santo Road which also include construction of ten new bridges to improve connectivity. The anticipated impacts and risks are considered less diverse/complex and are predictable. As part of project preparation, a comprehensive ESIA and an ESMP have been prepared. The impact assessment suggests that the proposed activities to be implemented under VCRTP are not likely to cause significant or irreversible environmental impacts. In assessing the potential impacts, the following factors were considered for each environmental receptor: (i) water resources: changes in surface water movement, changes in ground water quality, changes in river water quality; (ii) geological resources: sand

availability, aggregate availability, sustainability of river gravel extraction, changes in soil quality; (iii) river hydrography: changes to the flow regimes, changes to the channel morphology, changes to the ecosystem values, changes to riverbank function; and, (iv) aquatic environment: change in benthic environment, change in coastal water quality, change in river habitats, change in the usability of fisheries resources. Potential major environmental impacts and risks are limited to construction-related activities and sourcing of basalt aggregates. Some of these risks may include (among others): the increased in turbidity of surface waters during construction near riverbanks, soil erosion from use of heavy machinery, health risk associated with dust generated from aggregate crushing plant, changes to the hydrodynamics of Navaka River due to poorly planned basalt extraction, and loss of habitat for commercially important native prawns due to basalt extraction occurring during peak breeding season. These risks will be mitigated through site management and standard good practices/procedures as well as implementing the Quarry Management Plan for basalt extraction that will be developed based on a technical assessment on replenishment rate, recommended extraction rate, and the effects of the extraction activity to the natural habitats. Mitigation measures have been addressed in the ESMP which will then be used to guide the preparation of appropriate outcome-based specifications in accordance with the World Bank's procurement policy. The ESMP will also serve as the basis for the CESMP.

(g) **Social.** Land in the project areas is under customary land ownership wherein rights to land are typically perceived as involving extended family networks. Accordingly, land acquisition has the potential to initiate disharmony within communities and delays in project implementation if not implemented in a culturally sensitive manner and in consultation with communities. Communities along the project alignment are indigenous peoples. Accordingly, the project needs to ensure broad community support as well as free, prior and informed consent throughout preparation and implementation of the project. The associated social risks are ameliorated in the project by being site-specific, design minimizing land take and by being managed through close consultations with affected communities. Engineering studies during project preparation identified land will be required for the realignment of access roads to three bridges to enable all-weather crossing of the rivers. These are expected to affect an estimated four households who will lose marginal portions of productive land, two house structures along with productive trees and crops. The potentially affected households were consulted together with traditional leaders who are very supportive of the project and for the land acquisition. Other potential impacts associated with road improvements in priority sections of the existing alignment will be determined during detailed design but expected to be minor or avoidable. The draft ARAP has been prepared to fully mitigate identified as well as potential impacts that may be identified during detailed design. The ARAP as well as SEP guide the consultation and engagement process with communities and traditional leaders.

VI. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Vanuatu

Vanuatu Climate Resilient Transport Project

Project Development Objectives(s)

To improve the climate resilience of the Recipient's road network, with emphasis on the selected project road, and in the event of an Eligible Crisis or Emergency, to provide an immediate response to the Eligible Crisis or Emergency.

Project Development Objective Indicators

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Improve the climate resilience of the Recipient's road network								
Identified planning tools adopted and being used to improve climate resilience of roads (Number)		0.00	0.00	1.00	2.00	2.00	2.00	2.00
Length of road upgraded with climate resilience measures (Kilometers)		0.00	0.00	20.00	65.00	65.00	65.00	65.00
Number of bridges constructed with climate resilience measures (Number)		0.00	0.00	3.00	10.00	10.00	10.00	10.00
Identified enabling environment solutions adopted and implemented (Number)		0.00	0.00	1.00	2.00	3.00	4.00	4.00

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Component 1: Sectoral and Spatial Planning Tools								
Road Inventory Management System upgraded with a module to integrate climate and disaster risk profiles of road assets (Yes/No)		No	No	Yes	Yes	Yes	Yes	Yes
Component 2: Climate Resilient Infrastructure Solutions								
Bridges repaired (Number)		0.00	0.00	1.00	4.00	4.00	4.00	4.00
Box culverts installed (Number)		0.00	0.00	40.00	102.00	102.00	102.00	102.00
South Santo Road under piloting of multi-year performance-based maintenance contracts supported by VCRTP (Kilometers)		0.00	0.00	0.00	0.00	20.00	65.00	65.00
Satisfactory road safety audit at design and post-construction phases (Yes/No)		No	Yes	Yes	Yes	Yes	Yes	Yes
Number of people with enhanced access to transportation services (Number)		0.00	0.00	9,100.00	29,700.00	29,700.00	29,700.00	29,700.00
Component 3: Strengthening the Enabling Environment								
The MIPU-PWD's		No	No	Yes	Yes	Yes	Yes	Yes

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
construction material testing laboratory accredited (Yes/No)								
Technical specifications for road design updated (Yes/No)		No	No	Yes	Yes	Yes	Yes	Yes
An MOU signed between MIPU and MCCA for inter-ministerial collaboration (Yes/No)		No	No	Yes	Yes	Yes	Yes	Yes
Proportion of Contractor staff who sign Codes of Conduct (Percentage)		0.00	0.00	100.00	100.00	100.00	100.00	100.00
Proportion of Contractor staff who attend GBV & VAC training (Percentage)		0.00	0.00	100.00	100.00	100.00	100.00	100.00
Development of the Gender Responsive Policy Inputs to VISIP M&E (Yes/No)		No	Yes	Yes	Yes	Yes	Yes	Yes
Percentage of women employed in technical positions at MIPU-PWD at national and provincial levels (Percentage)		10.00	10.00	12.00	12.00	12.00	15.00	15.00
Public transport providers and drivers trained in GBV prevention (Yes/No)		No	No	Yes	Yes	Yes	Yes	Yes
Citizen engagement								
Grievances registered related to delivery of project benefits that are addressed (Percentage)		0.00	75.00	75.00	75.00	75.00	75.00	75.00

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Identified planning tools adopted and being used to improve climate resilience of roads	A cumulative measure of the uptake of analytical and sectoral planning tools (i.e., RAMS and mobile LiDAR to be used under the detailed design consultancy) that improves the way that climate change is addressed in Vanuatu's road sector.	Continuous	Project Implementation Status Reports (PISR)	Reviewing PISR	PIU
Length of road upgraded with climate resilience measures	A cumulative measure of the kilometers of road upgraded with climate resilience measures such as through improved design (e.g., raised road, improved drainage).	Continuous	PISR	The length of road upgraded with climate resilience measures will be measured.	PIU
Number of bridges constructed with climate resilience measures	A cumulative measure that tracks progress of making the bridges more climate resilient through targeted investments.	Continuous	PISR	The number of bridges with climate resilience measures will be measured.	PIU
Identified enabling environment solutions adopted and implemented	A cumulative measure that tracks progress of strengthening the	Continuous	PISR	Reviewing PISR	PIU

	institutional and regulatory functions for road sector asset management using an asset lifecycle-based approach (e.g., updating of technical specifications; accrediting a construction material testing laboratory; implementation of the transition plan to put the RAMS into operation; strengthening of road maintenance supervision capacity of PWD)				

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Road Inventory Management System upgraded with a module to integrate climate and disaster risk profiles of road assets	The PWD's Road Inventory Management System will be updated along with its data collection processes.	Continuous	PISR	Reviewing PISR	PIU
Bridges repaired	Repair of four existing bridges	Continuous	PISR	The number of bridges repaired will be measured.	PIU
Box culverts installed	Installation of 102 box culverts	Continuous	PISR	The number of box culverts installed will be measured.	PIU

South Santo Road under piloting of multi-year performance-based maintenance contracts supported by VCRTP	This will measure the distance of the project road under multi-year performance-based maintenance contracts	Continuous	PISR	Reviewing PISR	PIU
Satisfactory road safety audit at design and post-construction phases	Road safety audit to be undertaken at design phase to recommend road safety improvement; and, post-construction phase to confirm road safety issues are properly addressed.	Twice	PISR	Reviewing PISR	PIU
Number of people with enhanced access to transportation services	This is a new IDA19 indicator for the Transport GP	Annual	PISR for the distance of road upgraded and 2016 mini-census for the number of beneficiaries	The number of people with enhanced access to transportation services will be measured by multiplying the total number of beneficiaries by the proportion of the road upgraded.	PIU
The MIPU-PWD's construction material testing laboratory accredited	The MIPU-PWD's construction material testing laboratory in Port Vila will be accredited.	Once	PISR	Reviewing PISR	PIU
Technical specifications for road design updated	Technical specifications for road design will be updated based on the 2016 Vanuatu Resilient Road Manual.	Continuous	PISR	Reviewing PISR	PIU
An MOU signed between MIPU and MCCA for inter-ministerial collaboration	An MOU covering the collection, analysis and	Once	MOU	Reviewing MOU	PIU

	sharing of data and the development of a disaster response and recovery mechanism for the road sector will be signed between MIPU (PWD) and MCCA (VMGD/NDMO).				
Proportion of Contractor staff who sign Codes of Conduct	Contractor staff will be required to sign codes of conduct prior to commencing employment	Annually	PISR	Reviewing PISR	PIU
Proportion of Contractor staff who attend GBV & VAC training	Contractor staff will be required to attend GBV/VAC training	Annually	PISR	Reviewing PISR	PIU
Development of the Gender Responsive Policy Inputs to VISIP M&E	The indicator will measure whether the gender gap of women's employment in transport related agencies and projects is addressed.	Continuous	PISR	Reviewing PISR	PIU
Percentage of women employed in technical positions at MIPU-PWD at national and provincial levels	This will measure an increase of the percentage of women in leadership and management as well as an increase in employment opportunities for women in technical positions.	Continuous	PISR	Reviewing PISR	PIU
Public transport providers and drivers trained in GBV prevention	This will measure whether public transport providers and drivers are trained in GBV prevention	Once	PISR	Reviewing PISR	PIU
Grievances registered related to delivery of project benefits that are addressed	A measure of citizen engagement	Continuous (project	Project website and	Reviewing project website and PISR	PIU

		website); every month (monthly PISR)	PISR		

ANNEX 1: IMPLEMENTATION ARRANGEMENTS AND SUPPORT PLAN

COUNTRY: Vanuatu

Vanuatu Climate Resilient Transport Project

Project Institutional and Implementation Arrangements

1. Table 3 summarizes the roles and responsibilities of the key participants in the implementation of VCRTP.

Table 3: Management Roles and Responsibilities

Organization	Management Roles and Responsibilities
Ministry of Finance and Economic Management (MFEM) (Executing Agency)	• Sign Financing Agreement with the World Bank • Responsible for overall project execution • Chairs bi-annual meeting to review project implementation status
Ministry of Infrastructure and Public Utilities (MIPU) (Implementing Agency) through Public Works Department (PWD)	• Responsible for the overall implementation of the project with support of PIU/PST • Provide oversight to the project implementation, on behalf of the Minister of Infrastructure and Public Utilities and MFEM • Advise Minister of Infrastructure and Public Utilities of issues or concerns affecting project implementation and progress remedial actions • Call for meetings with other GOV Ministries and agencies to discuss the solution for issues/concerns arisen during project implementation that go beyond MIPU's responsibility. Minister of Infrastructure and Public Utilities will provide a final decision upon agreement obtained at the meeting • Approve contract award recommended by PIU • Sign all contracts (by the Minister or the Director General if authorized by the Minister) procured under the project (civil works, consultants including PST specialists and suppliers) • Provide technical inputs, as required • Responsible for environmental and social safeguards compliance through PIU with support of PST
Ministry of Climate Change and Adaptation (MCCA)	• Collaborate with MIPU in the implementation of the project • Provide data to MIPU on climate and disaster risks
PWD Project Implementation Unit (PIU)	• Responsible for day-to-day implementation of the project on behalf of MIPU with the support of PST • Undertakes procurement (selection) of consultants and contractors with support of PST (prepare bid documents, issue invitation for bid, evaluate proposals/bids, prepare Bid Evaluation Reports, recommend contract award to Minister of Infrastructure and Public Utilities) • Manage contracts for consultants financed under the project, including progress of deliverables • Overall responsibility for FM, including authorizing payment requests to MFEM for consultants and contractors • Houses PST members not based on Santo • Responsible for timely preparation and submission of up to date and accurate project reports to MIPU for transmittal to MFEM and the World Bank • Operate the Grievance Redress Mechanism (GRM) with support of PST • Operate the project website with Open Contracting and GRM with support of PST
Project Support Team (PST)	• Provide focal point on Santo for implementation of Component 2, and Santo based activities of Components 1 and 3, and associated community liaison and monitoring activities • Provide procurement and FM support to PIU • Provide technical reviews of designs produced by the design and supervision consultant (DSC) • Review technical content of deliverables produced by other consultants (where appropriate) • Prepare/review contract documents for civil works (from the DSC) and consultants (from MIPU) • Support PIU in preparing Procurement Plan • Assist PIU in preparing TORs and cost estimates for project consultant activities • Assist PIU in selection and writing Bid Evaluation Reports • Check engineers sign offs of works completed against contracts • Monitor progress of project activities and oversees day-to-day implementation on Santo • Assist PIU in operating the GRM • Assist PIU in operating the project website with Open Contracting and GRM • Monitor environmental and social safeguards compliance for MIPU • Prepare periodic Project Implementation Status Reports (PISR) (monthly, quarterly, bi-annually) to MIPU as well as yearly project M&E data and the project's Implementation Completion and Results Report (ICR) • Provide capacity development to the local staff and technical assistance on system development

2. Figure 1 illustrates the implementation arrangements for VCRTP.

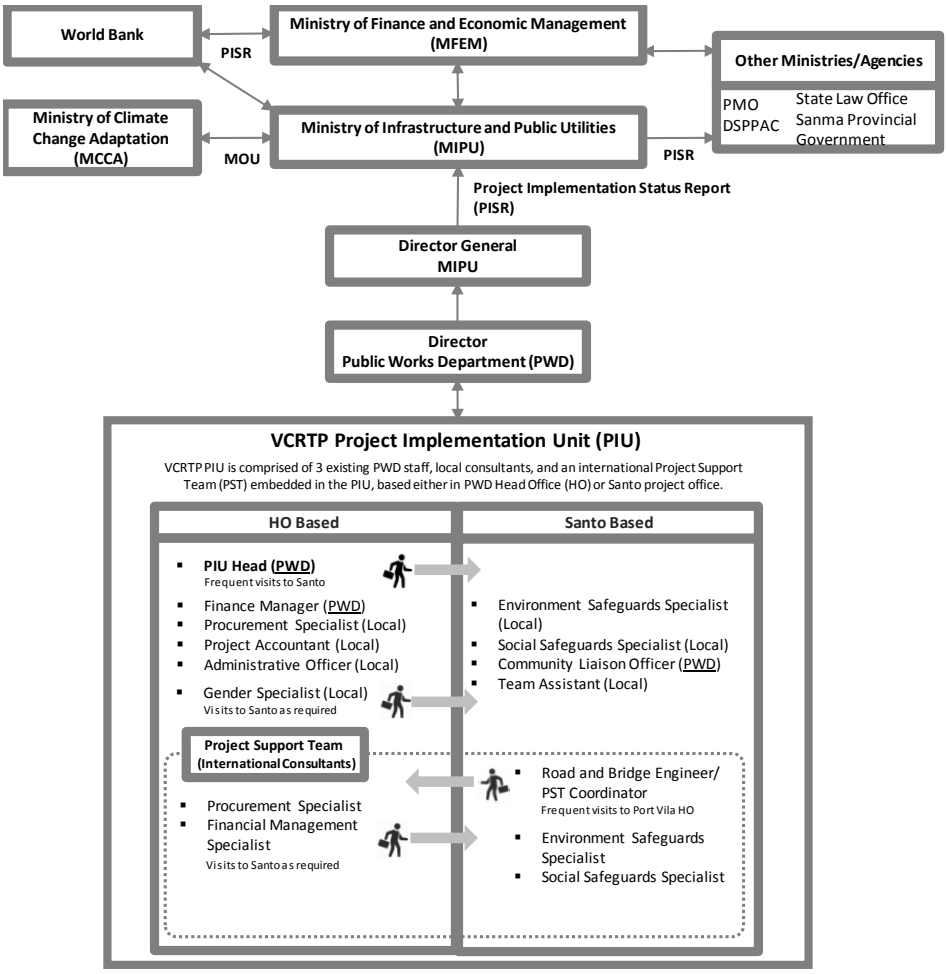


Figure 1: Implementation Arrangements

3. **MFEM will be the Executing Agency for VCRTP, while MIPU will be the Implementing Agency.** MIPU will implement VCRTP through the PIU of PWD. The PIU Head will be responsible for line management of the implementation of VCRTP. The PIU must be established within three months of the effective date of the Financing Agreement and the PIU Head, Finance Manager and Community Liaison Officer are the minimum personnel which much be in place when the PIU is established.

4. **MCCA will be supporting MIPU with the climate change aspects of the project**, including the collection, analysis and sharing of data and in the development of a disaster response and recovery mechanism for the road sector. An MOU will be signed between MIPU (PWD) and MCCA (VMGD/NDMO) covering these aspects in a form satisfactory to the Association, within 12 months of the effective date of the Financing Agreement, as MCCA has done for inter-ministerial collaboration on other climate change initiatives. The ongoing GFDRR-funded RTSIDS will also provide recommendations and data to inform activities to be implemented under VCRTP. A CERC OM is being prepared to assist in the implementation of Component 4. The CERC OM must be adopted prior to the implementation of contingent emergency response activities under Component 4.

5. MIPU, through PIU, will hire a Design and Supervision Consultant (DSC) to: (i) prepare the detailed designs for the road and bridge works in Component 2, including detailed specifications and specific conditions of contract; and, (ii) oversee all aspects of the construction works with the support of site inspectors, to modify designs as necessary to meet unforeseen circumstances arising during implementation, and to sign off on works as completed, certifying that works are done to the required standard so as to release interim and final payments to contractors. The DSC will also be responsible to ensure during construction the implementation of the requirements of the ESMP.

6. **Project Support Team (PST).** A team of international specialists will be set up within six months of the effective date of the Financing Agreement, embedded in the PIU and will work with PIU staff and local consultants to support MIPU-PWD in the implementation of the project. The PST will be composed of five international consultants: (i) a Road and Bridge Engineer/PST Coordinator; (ii) a Procurement Specialist, (iii) an FM Specialist; (iv) an Environmental Safeguards Specialist; and, (v) a Social Safeguards Specialist. Other than the Social Safeguards Specialist, these are the minimum personnel which must be in place when the PST is established. The role of the international specialists will be to provide (with PIU staff and local consultants) project operational support to MIPU-PWD, to provide capacity development to the PIU staff and local consultants, and technical assistance on system development. Some of these international specialists (as well as specialists providing support in other areas such as M&E), may provide inputs on an intermittent basis and be shared with the other projects funded by the World Bank or other development partners. Table 4 provides more details of the positions in the PST and their responsibilities and locations.

Table 4: Details of Positions, Responsibilities and Locations for MIPU, PWD, PIU/PST

#	Position Description	Responsibilities	Location
Ministry of Infrastructure and Public Utilities (MIPU)			
	Director General (DG)	• Overall Responsibility for project Implementation and authorized by the Minister of Infrastructure and Public Utilities as the head of the Implementing Agency • Calls meetings with other ministries/agencies to resolve project implementation issues that go beyond the responsibilities and capacity of MIPU.	Port Vila HO
	M&E Specialist, Corporate Services Unit	• Monitor project M&E against indicators in Results Framework, based on reports prepared by the PST and signed off by PIU Head and advises DG MIPU	Port Vila HO
Public Works Department (PWD)			
	Director	• Review periodic PISR and advises DG MIPU on the solutions and/or call a meeting with other ministries/agencies	Port Vila HO
Project Implementation Unit (PIU)			
1	PIU Head (PWD Deputy Director)	• Action and decision making, with support from the Road and Bridge Engineer/PST Coordinator on any issues, or reference to the Director PWD for review before sending to the DG MIPU for decision any issues that go beyond the decision-making authority of the Director PWD	Port Vila HO
2	Finance Manager (PWD staff)	• Ensure that the project's FM arrangements satisfy the GOV and World Bank requirements	Port Vila HO
3	Procurement Specialist (Local)	• Work with the International Procurement Specialist to prepare documents, takes day to day responsibility for procurement processes, including entering data into STEP • Maintain procurement files and records	Port Vila HO
4	Environmental Safeguards Specialist (Local)	• Work with International Environmental Safeguards Specialist and takes day to day responsibility to ensure that the requirements of the ESMP are followed, particularly by contractors on site • Provide training to contractors on the ESMP and how to comply with the ESMP provisions	Santo
5	Social Safeguards Specialist (Local)	• Work with International Social Safeguards Specialist and takes day to day responsibility to ensure that the requirements of the ESMP are followed, particularly by contractors on site • Provide training to contractors on the ESMP and how to comply with the ESMP provisions	Santo
6	Gender Specialist (Local)	• Overall responsibility to ensure that the GAP is implemented as well as the GBV/VAC Strategy • Raise any issues of noncompliance with the Road and Bridge Engineer/PST Coordinator • Provide operational support, capacity development and system development to MIPU staff • *This position might be shared with projects funded by other donors (e.g., GESI under R4D2)*	Port Vila HO with visits to Santo as required
7	Community Liaison Officer (PWD staff)	• Focal point for liaison on the project with the community, including in relation to environmental, social, land acquisition and resettlement and Community Based Contracting (CBC) matters • Communicate concerns raised by communities with the relevant specialist in the PST, and provide	Santo

		summary to the Road and Bridge Engineer/PST Coordinator	
8	Project Accountant (Local)	• Work with the International FM Specialist and takes day to day responsibility to enter data on a timely basis into the project FM system and verify • Liaise with DSC to ensure data on work completed, or Variation Orders are entered into the FM system and with WB/MFEM PIU on progress of payments to contractors • Prepare reports on contracts for review by International FM Specialist • Responsible for preparing quarterly interim unaudited financial reports (IFRs) and Project Financial Statements • Responsible for contract administration • *This position might be shared with other WB-funded projects*	Port Vila HO
9	Administrative Officer (Local)	• Liaise with the PIU Team Assistant in Santo	Port Vila HO
10	Team Assistant (Local)	• Provide administrative support to the PST based in Santo, and liaise with the PIU Administrative Officer in HO • Assist the Road and Bridge Engineer/PST Coordinator in preparing project progress reports on a monthly basis, as well as quarterly reports • Monitor production of other reports required by the Financing Agreement, WB and GOV Requirements, and keep the Road and Bridge Engineer/PST Coordinator up to date	Santo
Project Support Team (PST)			
11	**Road and Bridge Engineer/PST Coordinator** (International) *Full time initially then reducing to intermittent inputs*	• Support the PIU Head to meet their overall responsibility for ensuring VCRTP is delivered to meet the PDO and agreed scope on time and within budget – works and TA • Technical Review of DSC designs before procurement of civil works contractor and adjustment of designs as required during construction • Audit of works completed • Responsible for contract management • *Civil Engineer with Expertise in Project/ Contract Management*	Santo, with frequent visits to Port Vila HO
12	**Procurement Specialist** (International) *Intermittent*	• Overall responsibility to ensure procurement meets WB and GOV requirements • Review of bid documents, BER and contract award, assist PIU with bid evaluation • Maintain schedule of procurement process from bid documents to contractor mobilization • Ensure the procurement plan, PPSD, and STEP are followed, and reviews any significant changes • Provide operational support, capacity development and system development to MIPU staff	Port Vila HO
13	**FM Specialist** (International) *Intermittent*	• Overall responsibility to ensure FM meets WB and GOV requirements • Establish and maintain contract FM system to (i) provide required data for Financial Reports to WB and GOV/MFEM (including into Smartstream); (ii) ensure correct and timely payments to contractors; (iii) ensure up to date real time knowledge of contract financial status; and, (iv) ensure up to date knowledge of the project budget • Provide operational support, capacity development and system development to MIPU staff • *This position might be shared with other WB-funded projects*	Port Vila HO with visits to Santo as required
14	**Environmental Safeguards Specialist** (International) *Intermittent*	• Overall responsibility to ensure the ESMP is followed and that WB Environmental Safeguards are complied with • Provide operational support, capacity development and system development to MIPU staff	Santo
15	**Social Safeguards Specialist** (International) *Intermittent*	• Overall responsibility to ensure the ESMP is followed and that WB Social Safeguards are complied with • Provide operational support, capacity development and system development to MIPU staff	Santo

7. The PST, as a part of the PIU, will be responsible for overseeing and managing all aspects of VCRTP's execution and day-to-day project implementation management, including ensuring compliance with project requirements associated with geotechnical and site surveys, procurement, inspection and certification of works, FM, reporting, M&E, and ensuring environmental and social safeguards compliance in accordance with the safeguard instruments, GAP and GBV/VAC Strategy. The PIU will also oversee the GRM.

8. The PST will support MIPU-PWD to oversee tenders, prepare TORs, undertake advertisements, evaluate bids and proposals, and finalize and negotiate contracts for signing by MIPU, arrange payments to contractors, suppliers and consultants, and prepare withdrawal applications for submission to the World Bank. The PST will also maintain procurement files and records.

9. **Santo-based PST**. Most PST staff will be located at an office at Luganville on Santo. Office space is being provided in an existing government office. This office would also be the base for the construction supervision consultants to be hired using project funds to work on individual road schemes/contracts.

10. To ensure the most effective and efficient delivery of the project, it is anticipated that PIU staff will need to travel between Luganville and Port Vila on a regular basis for discussions. The cost of these trips will form part of the operating costs associated with the implementation of the project.

11. **Project reporting and decision making.** During project implementation, monthly Project Implementation Status Reports (PISR) will be prepared by the PIU Head with the support of the Road and Bridge Engineer/PST Coordinator. These monthly PISR should be brief, use tables and include: (i) the procurement status of each proposed contract shown in the procurement plan; (ii) the financial status of each contract under implementation, including total value, value of works completed, commitments and any agreed variations; (iii) the progress of key tasks in all contracts, with any changes in contract milestones; (iv) issues/matters arising since the previous PISR; (v) resolution of issues/matters in the previous PISR by the PIU; and, (vi) issues /matters requiring decisions from the DG MIPU or other ministries/agencies. The format for the monthly PISR will be agreed during the initial stages of implementation and be included in the POM.

12. These monthly PISR will be submitted to the DG MIPU no later than the 7th day of the following month and distributed to all relevant Government ministries/agencies and the World Bank. These Ministries/Agencies will include: (i) MFEM; (ii) Prime Minister's Office; (iii) Directorate of Strategic Policy Planning and Aid Coordination; (iii) MCCA; (iv) State Law Office; and, (v) Sanma Provincial Government.

13. If there is any issue/matter arising that goes beyond the capacity/authority of the DG MIPU or Minister of Infrastructure and Public Utilities, the Minister of Infrastructure and Public Utilities, or his/her designated person (such as the DG MIPU), will call a meeting with the relevant GOV ministries/agencies to discuss potential solutions. The agreement obtained from such meeting will be the basis for the Minister of Infrastructure and Public Utilities to issue a final decision on the issue. The monthly PISR, brief minutes of the meetings and the decisions made will be made public on the MIPU and VCRTP websites.

14. Succinct quarterly PISR will be also be prepared by the PIU Head with support of the Road and Bridge Engineer/PST Coordinator, and an MIPU's M&E Specialist as required. The content of these reports should include: (i) the extent to which the project objectives are being achieved; (ii) administrative, physical and financial progress of project components; and, (iii) compliance with safeguards instruments. The format for the quarterly PISR will be agreed during the initial stages of implementation and be included in the POM. These reports will be submitted to the DG MIPU no later than 30 days after the end of the reporting quarter, reviewed by the DG, and then distributed to all relevant Government ministries/agencies listed above, and the World Bank no later than 45 days after the end of the reporting quarter, and made public on the MIPU and VCRTP websites.

15. It is proposed that every six months the Director General of MFEM in their capacity as the head of the Executing Agency, at their discretion, convene a meeting of all relevant Government ministries/agencies, including MFEM; MIPU; MCCA; the Department of Strategic Policy, Planning and Aid Coordination under the Prime Minister's Office; State Law Office; and Sanma Provincial Government. The purpose of these meetings will be to review the progress of implementation, make decisions on any matters delaying implementation or presenting a risk that project objectives will not be met, and to make recommendations for action by the PIU Head. The minutes of these meetings will be made public on the MIPU and VCRTP websites.

16. **Developing local capacity.** The PST is designed to provide a significant level of support from international specialists to local specialists (both PWD staff and local consultants) at the start of implementation. This includes operational support, professional capacity development as well as development of GOV and MIPU-PWD systems. As these local specialists develop professionally during the project, and the systems are improved, the inputs from international specialists will be reduced, with the target of starting to do this after the project Mid-Term Review. PIU, with local staff will be responsible for project management from this time and PST staff will play a role of monitoring.

17. **Training and professional development.** This is a key aspect of developing local capacity. Formal and "on the job" training will be provided in technical and administrative topics by PST specialists. "Train the trainer" programs will be provided to enable local specialists to deliver training programs on a regular basis, on a flexible schedule to larger numbers of GOV staff and local consultants. Where new systems are introduced, or existing systems upgraded, complete training programs will be designed and implemented, including training media and manuals for ongoing training. GOV staff and local consultant staff who are employed on contract by the government will be guided in their professional development and in the courses that they should take to increase their skill base and professional knowledge. The areas would include civil engineering, project management, FM, procurement, environmental and social safeguards, gender, and climate change.

18. **A Project Operations Manual (POM)** is being drafted to guide all VCRTP stakeholders, particularly implementing agencies, in the management of project activities and must be adopted within 6 months after the effective date of the Financing Agreement. It includes details on institutional roles and responsibilities for safeguards procedures, M&E, contract management, and scheduling. It sets out the format for and provides guidance on writing the monthly and quarterly PISR. It describes the operating principles for decision making. The FM Manual, Procurement Plan, ESMP, GAP and GBV/VAC Strategy, as well as the CERC OM will be attachments to the POM.

19. An annual work plan and budget will be submitted to the World Bank not later than 6 months from the Effective Date and July 31 of each subsequent year of the implementation of the project.

Financial Management

20. **Risk assessment.** The existing FM systems are assessed as adequate to the meet the FM requirements as stipulated in the World Bank Policy Investment Project Financing. The project's overall FM risk is rated "Substantial". There is limited institutional capacity of the implementing agency as noted in other two World Bank-funded projects implemented by MIPU, with issues such as limited interaction of MIPU staff with project consultants, no oversight, overdue audits, delayed IFRs, weak project budget system and poor control of contracts. Under VCRTP, the following measures will be taken to mitigate this risk: (i) an International FM Specialist, under the direction of PWD Finance Manager and assisted by the Project Accountant, will ensure that the project's FM arrangements satisfy the GOV and World Bank's requirements and will establish and maintenance FM systems, providing operational support as well as FM capacity development to MIPU-PWD staff on an ongoing basis; and, (ii) a locally hired Project Accountant under the supervision of the International FM Specialist, will take day-to-day responsibility to process project transactions on a timely basis into the project FM system.

21. **Budgeting.** A budget for the whole project will be prepared and included in Smartstream and broken down by year with the appropriate level of detail. MIPU will work on the full cost budget by components, ensuring that the project is in line with the new roads policy and is included in the 2020 budget. In terms of human resources, given PWD's limited resources, PWD will have a small PST under the supervision of government staff, funded by the project at reasonable

remuneration, and office space to accommodate the small PST.

22. **Counterpart funding.** Since IDA will fund 100 percent of eligible expenditures, inclusive of taxes, no counterpart funding is envisaged.

23. **Funds flow.** MFEM will coordinate the funds flow of the project. The credit and grant will be signed with GOV in SDR for IDA. A designated account (DA) will be established for the project under the GOV Development Fund in the Central Treasury Account and will be maintained in the local currency (VUV) and managed by MFEM. Credit and grant proceeds will flow from the World Bank into the DA. Credit and grant proceeds can also flow to contractors via direct payments.

24. **Accounting and maintenance of accounting records.** The GOV's Financial Management Information System (FMIS) will be used for the processing of payments and the recording of transactions. The accounting software package used with the agency and all other government agencies is Smartstream. A general ledger code for the project will be generated based on the Financing Agreement to start entering invoices. Spreadsheet-based systems will be used to keep track of payments against contracts, budgets and expenditures by activity – this supplemental information will be used in the preparation of withdrawal applications. Original supporting documents will be retained by the implementing agency and are to be made available to both auditors and the World Bank, as required.

25. A contract management module does not exist in Smartstream and there is poor contract management system in other World Bank-funded projects implemented by MIPU; hence, there is a risk of having the same issue in VCRTP. To mitigate this risk and to ensure efficient contract management, the government is working on improving contract management system to be integrated to Smartstream. It is expected that the International FM Specialist assisted by the Project Accountant will ensure contract management process meets the project's operational and functional objectives to reduce financial risks.

26. **Internal controls, including internal audits.** Government agencies in Vanuatu are required to comply with the FM processes and procedures, as detailed in the Public Finance and Economic Management Act 2006 and Vanuatu Government Financial Regulations. These are considered satisfactory for this project. Currently, there are no internal audit arrangements within line ministries in Vanuatu. MFEM is responsible for internal audits and is increasing its capacity and scope to perform internal audits of line agencies.

27. **Financial reporting.** Project financial statements are prepared on an annual basis by MIPU and are then audited by the Vanuatu National Audit Office (VNAO). Unaudited interim financial reports (IFRs) will be prepared on a quarterly basis. The IFRs will include an analysis of expenditures for the current period, year-to-date expenditures, plus outstanding commitments. These will be compared against the overall project budget as required under the Vanuatu Government Financial Regulations. The format will be developed by the implementing agency and agreed with the World Bank prior to the due date for submitting the first IFRs. IFRs will be forwarded to the World Bank within 45 days of the end of each calendar quarter.

28. **External audits.** The Office of the Auditor General of Vanuatu is mandated to audit all government funds and requires that annual financial statements be prepared in accordance with the International Public Sector Accounting Standard cash accounting standards. The audited financial statements of the project, audit reports and management letters must be received by the World Bank within six months following the end of the fiscal year and will be made publicly available by Vanuatu in a manner acceptable to the World Bank, as per the General Conditions for IDA Financing:

Investment Project Financing.

29. **Designated account.** VCRTP would need a DA for advances. The currency of the DA would be Vanuatu Vatu, which would be held in a segregated DA. Vanuatu uses a central treasury account at the Reserve Bank of Vanuatu; therefore, the segregation is achieved via a separate General Ledger code in Smartstream accounts to separate project accounts, while funds physically are held in the one central treasury account at the Reserve Bank of Vanuatu.

30. **Disbursement methods and supporting documentation arrangements.** The project will have four disbursement methods: (i) advances to the DA; (ii) direct payment; (iii) reimbursement; and, (iv) special commitments. Direct payment would only be used for large payments or when payments are in currencies that the Borrower may have difficulty obtaining. Reimbursement would only be used if GOV funds were used for project expenses, rather than expenditures through the DA. Special commitments may be needed if goods are purchased from overseas. Disbursements will be against Statements of Expenditure. Required supporting documentation for disbursements are outlined in the Disbursement Letter.

31. The DA will be used for disbursements related to local purchases of goods and services, contractors and consultants, project management support and operating costs. The minimum threshold for direct payment, reimbursements and special commitments and the DA ceiling will be specified in the Disbursement Letter. Replenishment applications will be submitted quarterly as a minimum but may be required on a more frequent basis.

32. Table 5 shows the project withdrawal categories.

Table 5: Project Withdrawal Categories

Category	IDA Credit Allocated (expressed in US$)	IDA Grant Allocated (expressed in US$)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, consulting services, Training, and Operating Costs for Parts 1, 2 and 3 of the Project	34,400,000	30,500,000	100%
(2) Emergency Expenditures under Part 4 of the Project	0	0	
(3) Refund of Preparation Advance	1,100,000	0	Amount payable pursuant to Section 2.07 (a) of the General Conditions
Total Amount	**35,500,000**	**30,500,000**	

33. **Project Preparation Advance (PPA).** A PPA credit in the amount of US$1.1 million is in place to enable GOV to undertake activities supporting project preparation that are consistent with the PDO, and which have been procured in accordance with applicable World Bank procurement procedures.[49] The activities for which the PPA is provided cover the provision of technical and operation assistance for carrying out project preparation activities, including: (i) field investigations, feasibility studies, and detailed engineering design/studies; (ii) preparation of project operations manual and procurement documents; and, (iii) environmental and social safeguards arrangements, including preparation of an environmental and social impact assessment, consisting of an environmental and social management plan(s), resettlement action plan, and other relevant environmental and social safeguards documents. These have been undertaken through the hiring of an International Environmental Safeguards Specialist, an International Social Safeguards Specialist, a National Environmental Safeguards Specialist, a National Social Safeguards Specialist, and two Procurement Specialists. In addition,

[49] The PPA was approved on January 31, 2019 and became effective on February 6, 2019.

the procurement of a Design and Supervision Consultant, a Road and Bridge Engineer/PST Coordinator (who can also work as an Independent Technical Reviewer), and a Financial Audit Consultant is underway.

Procurement

34. **Applicable procurement regulation.** Procurement for VCRTP will be carried out in accordance with the World Bank Procurement Regulations for IPF Borrowers (Procurement Regulations), July 2016 (revised November 2017 and August 2018), as well as the approved procurement plan uploaded and approved in the STEP.

35. **Procurement risk assessment.** A procurement risk assessment of MIPU has been carried out. Key procurement risks and mitigations are summarized in Table 6.

Table 6: Risk Assessment Matrix

Description of Risk	Description of Mitigation	Risk owner
Limited capacity of MIPU-PWD for procurement and contract management	• An International Procurement Specialist will be maintained in the PST to support PWD. PWD will designate a staff specifically for procurement as the Local Procurement Specialist for this project. • A consulting firm will be employed to assist with preparing technical design, procurement documents, and construction supervision. • On-the-job training or capacity building will be included into the consultants' contracts.	MIPU-PWD
Limited number of sufficiently qualified and experienced contractors in the market	• Broad advertisement and bundling of packages to attract international contractors for VCRTP. • At the same time, local contractors can partner with international contractors (joint venture or subcontract).	MIPU-PWD
Lack of knowledge and practice in application of the requirements detailed in the Procurement Regulations for IPF Borrowers	• The PST to support MIPU-PWD. • Training in the use of the World Bank Procurement Regulations for IPF Borrowers, July 2016 (revised November 2017 and August 2018). • Training will be included into TOR of the Procurement Specialist in PST. • The World Bank will provide training on procurement whenever necessary.	MIPU-PWD/ World Bank
Lengthy government approval and clearance processes, including bid evaluation processes	• Adoption of Advance Procurement to the point of contract award. • Continuous engagement and follow up by MIPU-PWD on procurement decisions and timely provision of information or clarification on any matters to relevant government departments. • The PIU Head is accountable for the implementation of the procurement plan. The International Procurement Specialist should regularly report progress and delay (if any) based on the information in STEP.	MIPU-PWD

36. **Procurement categories.** The proposed project will finance the following categories:

(a) **Procurement of Civil Works:** Construction and maintenance of roads and bridges with the estimated cost of US$56.355 million.

(b) **Procurement of Goods:** Procurement of two vehicles for project management operations with the estimated cost of US$0.060 million.

(c) **Procurement of Consulting Services:** Detailed design, construction supervision, technical assistance, project implementation support, etc. with the estimated cost of US$9.245 million.

37. **Procurement plan.** The draft procurement plan has been prepared based on the analysis in the PPSD and uploaded into STEP for approval by the World Bank. Due to the nature and size of investment, it is expected that VCRTP will approach to the international market for the physical works (roads and bridges). For this purpose, the works are grouped

into relatively larger packages to attract regional or international contractors. For most consulting services, international consultants (firms or individuals) will be employed following appropriate selection methods. The Plan will be updated, as necessary, but at least annually.

38. **Procurement support.** The World Bank will visit the project at least once a year in addition to normal prior and post review.

Implementation Support Plan

39. **Implementation Support Plan.** This is based on previous experience and lessons learned from other road projects in the region, as well as the project's risk profile. The approach is to provide ongoing and regular implementation support.

40. MFEM, in consultation with MIPU will determine the appropriate timing of semi-annual reviews, taking into consideration the availability of participants. The World Bank implementation review will cover non-technical aspects of the support including: (i) FM; (ii) procurement; (iii) implementation arrangements; and, (iv) safeguards. In addition, field visits will also be undertaken to project sites. To the greatest extent possible, the World Bank will accommodate any written request for 'as-needed' support for the project, including fiduciary aspects.

41. Each implementation support mission will result in the production of a joint Aide-Memoire that will be discussed at a wrap-up meeting to be chaired by MFEM. It is envisaged that the Aide-Memoire will provide an overall view of the current situation relating to project implementation, including findings and observations from the World Bank. Representatives from the relevant GOV agencies will be invited to attend the kick-off, wrap-up as well as technical meetings. Furthermore, any adjustment requiring more frequent reviews will be discussed, agreed upon, and documented in the Aide-Memoire.

42. A 'mid-term' review mission will be held not later than three years after the effective date of the project, or such other period as may be agreed with the World Bank. It is envisaged that the mid-term review will be conducted at either the halfway point of the project period or when the funds are 50 percent disbursed and provides an opportunity to review the project and take stock of implementation progress. Following the mid-term review, adjustments to project support may be required, including a project restructuring and/or possible additional financing from any other sources based on the implementation experience. The World Bank will work with MFEM and MIPU to clarify the requirements necessary to effect any changes. Any changes to the project that require amendments to the Financing Agreement will require a formal request from the Government's signatory to the Financing Agreement.

43. Six months prior to the closing date of the project, GOV will commence the preparation of its Implementation Completion and Results Report (ICR). The World Bank ICR author will participate in the final implementation review and will gather the necessary information to help prepare the ICR.

44. Missions to support the implementation of VCRTP will be carried out every 4–6 months. At least twice a year the missions will include technical, fiduciary and safeguards team members, who will provide input into infrastructure design and construction, carry out post reviews on contract management, review safeguards compliance, and provide formal training where required. The implementation support plan will be reviewed annually to ensure that it meets the support needs of the project. The estimated level of annual support needed to implement VCRTP is identified in Table 7.

Table 7: Implementation Support Plan

Focus of Implementation Support		
Time	**Focus**	**Skills Needed**
First twelve months	Project launch and start-up	Task Team Leader; Operations Officer; Transport Analyst; Highway Engineer; Procurement Specialist; FM Specialist; Environment Specialist; Social Specialist; Gender Specialist Administrative Support
12-60 months	Project implementation	Task Team Leader; Operations Officer; Transport Analyst; Highway Engineer; Procurement Specialist; FM Specialist; Environment Specialist; Social Specialist; Gender Specialist; Administrative Support
Other		GBV Specialist
Skills Mix Required		
Skills Needed	**Number of Staff Weeks**	**Number of Trips**
Task Team Leader	8 per year	3 per year
Operations Officer	8 per year	3 per year
Transport Analyst	8 per year	3 per year
Highway Engineer	4 per year	2 per year
Procurement Specialist	3 per year	2 per year
FM Specialist	3 per year	2 per year
Environment Specialist	3 per year	2 per year
Social Specialist	3 per year	2 per year
Gender Specialist	3 per year	1 per year
Administrative Support	3 per year	0 per year
Partners		
Name	**Institution/Country**	**Role**
Asian Development Bank (ADB)	Multilateral Development Agency	Ongoing activities in the sector of a similar nature which we will leverage and complement.
Japan International Cooperation Agency (JICA)	Bilateral Development Agency	Same as above.
Australian Department of Foreign Affairs and Trade (DFAT)	Bilateral Development Agency	Same as above.
New Zealand Ministry of Foreign Affairs and Trade (MFAT)	Bilateral Development Agency	Same as above.
Green Climate Fund	Multilateral Development Agency	Same as above.

ANNEX 2: DETAILED PROJECT DESCRIPTION

COUNTRY: Vanuatu
Vanuatu Climate Resilient Transport Project

1. VCRTP will focus on investments that seek to improve the climate resilience of Vanuatu's road network through (i) upgrading South Santo Road; and, (ii) strengthening capacity of MIPU-PWD in climate resilient road asset management, road maintenance, road safety, and project implementation support. The project also includes provision for CERC. VCRTP will be the fourth project in the ongoing PCRTP SOP. Table 8 summarizes conditions and proposed measures for each bridge, Table 9 provides details of the road investments, and Table 10 provides details of road sector TA activities.

Table 8: Bridge Conditions and Proposed Measures

#	Name	Chainage	Length (m)	Condition	Proposed Measure
1	Sarakata	0.0	82	Good; EU funded in 1997	Install traffic safety signs; refectory paint on existing guard rails
2	Usa	6.2	54	Good	Remove rusts; repair girder; replace rails and posts; abutment protection works
3	Naoneban	13.6	20	Poor concrete bridge	New modular bridge or RCC bridge (20 m x 5.5 m) with single span
4	Venue	20.2	20	Poor concrete bridge	New modular bridge or RCC bridge (20 m x 5.5 m) with single span
5	Venaus	26.0	15	Poor concrete bridge	New modular bridge or RCC bridge (15 m x 4.0 m) with single span
6	Adson	32.8	40	Good; AFD funded in 2002	Install rails and posts including traffic safety signs
7	Nakere	35.0	13	Poor; vented drift severely damaged	New modular bridge or RCC bridge (13 m x 5.0 m) with single span
8	Maniao	36.2	30	No structure; bridge washed away at least twice; impassable during heavy rains	New steel truss bridge (30 m x 6.5 m) with single span; **realign the crossing location approximately 260 m upstream**
9	Wailapa	37.9	60	Good; AFD funded in 2002	Repair abutments; install rails and posts including traffic safety signs
10	Okoro	40.2	30	No structure	New steel truss bridge (30 m x 6.0 m) with single span; **realign the crossing location approximately 100 m upstream**; install gabion retaining walls.
11	Bayolo	43.5	50	No structure; impassable during heavy rains	New steel truss bridge (50 m x 5.5 m) with single span
12	Navaka	48.2	210	No structure; impassable during heavy rains	New steel truss bridge (210 m x 8.0 m) with three spans; **realign the bridge crossing location approximately 170 m downstream**.
13	-	52.6	15	Poor vented drift	New modular bridge or RCC bridge (15 m x 5.0 m) with single span
14	Bouvo	63.2	30	No structure; drift washed away in 2008; impassable during heavy rains	New steel truss bridge (30 m x 5.5 m) with single span

Table 9: Description of Road Investments

Investment	Description
Seal the existing 60 kilometers of gravel road	This is the only road connecting the communities in South Santo and has critical economic and social importance. Of the 60 kilometers of gravel road between Saint Michel and Tasiriki, it is proposed that a combined length of 56 kilometers along the flat terrain will be paved with premix of hot bitumen or a double bituminous surface treatment (DBST). The remaining sections on steep slopes and potential water crossings, with a combined length of 4 kilometers, will be paved with cement concrete surface. The road will be raised, and longitudinal and cross drainages provided to increase its climate resilience to surface flooding and to avoid deterioration associated with rising water tables. The road will also be provided with road safety features such as speed humps and gateway treatment at the entrance to each village to control speeds, as well as improvements for pedestrians. The road geometry will be 6.0 meters of pavement width; 1.0 meter of shoulder on both sides; and, longitudinal drainages.
Upgrade five small new bridges	There are three concrete bridges and two vented drifts (<20 meters) which are in need for replacement. The project will replace them: (i) potentially trialing modular bridges and geosynthetic reinforced soil (GRS) abutments; or, (ii) with reinforced cement concrete (RCC) bridges with return type of RCC wing walls integrated with abutments over pile foundations.
Construct five large new bridges	No structure exists at five large water crossings (>30 meters) between Maniao River and Tasiriki. These crossings become impassable during heavy rains. VCRTP will construct possibly steel truss bridges at these locations to provide road users with all-weather access. To minimize the impact of flooding, single span bridges are recommended, except the proposed 210 meters Navaka Bridge where the project sees the need to have three spans. The dimensions of the bridges will be finalized based on the site-specific natural condition surveys (e.g., topographical, hydrological, and geotechnical surveys) to be undertaken as part of the detailed design.
Repair four existing bridges	VCRTP will do minor repair work on the four existing bridges (one of which was constructed with EU assistance in 1997, and two of which were constructed with AFD assistance in 2002), such as repairing abutments, and replacing/installing rails and posts including traffic safety signs.
Construct 102 box culverts	The project estimates a total of 102 precast box culverts will be required in different sizes to replace the old structures (mainly pipe culverts) which are not serviceable, as well as provide new cross drainages where water courses have been developed.
Construct other ancillary structures	At selected locations the project will provide other ancillary structures to improve climate resiliency – for example, coastal protection near Saint Michel and Tasiriki to protect the road; masonry covered drains along the footpath; unvented drifts; gabion retaining walls against landslides or for embankment stabilization, etc.
Establish small-sized quality control laboratory	A small-sized quality control laboratory will be established near the project sites on Santo to support MIPU-PWD to verify the quality of materials used for the project. This would include purchasing of concrete crushing machine, as well as undertaking of a dynamic cone penetrometer (DCP) test, soil compaction test, California Bearing Ratio (CBR) test, basic soil test, etc. This activity will be included with the DSC contract.
Procure Bailey bridges	Single-lane Bailey bridges will be procured to temporarily diver traffic during construction. The bridges will also help provide swift response to a possible emergency.
Piloting of multi-year performance-based maintenance contracts	This will pilot two-year performance-based routine maintenance contracts to meet specicfic service standards to be executed on all 65 kilometers of South Santo Road after one-year defect liability period. Some of the routine maintenance tasks on the project road will continue to be done using community-based groups with female participation. The activity will be carried out in parallel with the road maintenance supervision capcity building program under Subcomponent 3.1.

Table 10: Description of Road Sector Technical Assistance Activities

Activity	Description
Road condition assessment to support the RAMS (Systems Planning)	Conduct a road condition assessment to measure the current level of service (the quality of operating conditions provided to road users) and risks of climate/disaster-induced deterioration on the road network on Santo. The data collected will increase the functionality of the RAMS in the monitoring the baseline robustness of roads as well as their climate/disaster risk profiles, and in the planning and programming of road works. It will enable the RAMS to support the implementation of the Rural Road Access Policy target to maintain all roads to their defined standards, climate resilience and level-of-service.
Updating of technical specifications (Engineering and Design)	Update PWD's technical specifications based on the 2016 Vanuatu Resilient Road Manual in order to make the road network more climate resilient. This will include updating and expanding: (i) Part C - Screening Infrastructure for Climate Resilience – including adding vulnerability assessment and mapping); (ii) Section 7.18 Bridges and Stream Crossings – including adoption of climate resilient bridge construction technologies to be used potentially under the project (e.g., modular bridges, geosynthetic reinforced soil (GRS) abutments, reinforced cement concrete (RCC) bridges, etc.); (iii) preparation of performance-based maintenance specifications by road surface types; and (iv) preparation of guideline on road safety measures.
Improvement/accreditation of construction material testing laboratory (Engineering and Design)	Enable MIPU-PWD to improve its central construction material testing laboratory for exploring the potential use of cost-effective climate resilient materials using local resources. This will include the procurement of essential testing equipment for the PWD's construction material testing laboratory in Port Vila and provision of training to PWD staff for its operation. The existing laboratory has limited equipment to test the strength and mechanical characteristics of the materials used in road construction, which in turn limits the treatments that can be applied to address climate vulnerability. This will facilitate the utilization of the local materials and accreditation of the laboratory for improved quality assurance.
Implementing the transition plan to put the RAMS into operation (Systems Planning/ Operations and Maintenance)	Hiring of consultants to assist PWD using the RAMS to inform its investment planning and budgeting. The activity will focus on how to use climate and disaster risk profiles in the RAMS to prioritize road investment decision making along with other asset parameters. The key tasks include (i) updating PWD business procedures for use of the RAMS; (ii) streamlining of the organizational functionality for use of the RAMS ; (iii) support for implementation of the transition plan, including (a) training PWD staff and managers in the use of the upgraded system and procedures (including "training the trainers" and (b) operational support during the transition.
Road maintenance supervision capacity building program within PWD (Operations and maintenance)	This activity will support the piloting of two-year performance-based routine maintenance contracts which will be carried out under Component 2. It will include: (i) development of specific key performance indicators (KPIs) to measure the desired performance of contractors; (ii) training of PWD and contractors on a performance-based routine maintenance contract; and, (iii) strengthening of supervision activities carried out by PWD.
Practical road management capacity building program within PWD (Operations and Maintenance)	Assist PWD with improving their practical road management capacity through piloting lifecycle-based asset management. The activity builds on the transition to the use of the RAMS . The activity includes: (i) training to PWD staff in (a) lifecycle-based asset management; (b) the undertaking of road safety audits; and, (c) the scoping and implementaiton of road safety measures; and, (ii) awareness-raising on the Santo's road network apart from South Santo Road (road safety audits and safety awareness campains on South Santo Road will be carried out by the DSC under Component 2).
Climate change capacity building program within MIPU in collaboration with MCCA (Institutional Coordination)	Support cultural change and capacity building within MIPU for climate change adaption and disaster risk management including: (i) establishment of an MOU between MIPU (PWD) and MCCA (VMGD/NDMO) on inter-ministerial collaboration, reflecting a mutual recognition of the necessity of a climate and disaster risk-informed road sector management; (ii) assessment of baseline capacities at both sides and any institutional constraints to sustain a structured collaboration at technical level; (iii) preparation of key policy and legislation reforms to institutionalize the collaboration modality; (iv) integration of climate change and disaster risk management into internal PWD business practices and relevant guidelines for road asset management; and, (v) training of MIPU and MCCA staff (including training needs assessment and training the trainers).

2. The estimated costs of each component and sub-component are summarized in Table 11, including a PPA of US$1.1 million for eligible expenditures.

Table 11: Project Cost Breakdown by Component and Sub-component

Component and Sub-component	IDA Financing (US$)
Component 1: Sectoral and Spatial Planning Tools	280,000
1.1 Upgrading of Road Inventory Management System (RIMS)	280,000
Component 2: Climate Resilient Infrastructure Solutions	60,750,000
2.1 Upgrading of Saint Michel–Wailapa Bridge road section (32.9 km) and spot improvement on Sarakata Bridge–Saint Michel road section (5.0 km)	28,750,000
2.2 Upgrading of Wailapa Bridge–Tasiriki road section (27.3 km)	26,855,000
2.3 Consultancy services for detailed design and supervision	4,395,000
2.4 Piloting of multi-year performance-based maintenance contracts (65 km)	750,000
Component 3: Strengthening the Enabling Environment	4,970,000
3.1: Technical assistance	1,520,000
3.1.1 Consulting services for MIPU technical planning, process strengthening, and technical specifications updating[50]	645,000
3.1.2 Consulting services for road condition assessment and implementation of the transition plan to put the RAMS into operation	350,000
3.1.3 Consulting services for climate change capacity building within MIPU in collaboration with MCCA	125,000
3.1.4 Consulting services for implementation of GAP and GBV/VAC Strategy	400,000
3.2: Project support	3,450,000
3.2.1 Procurement Specialist (Local)	138,000
3.2.2 Environmental Safeguards Specialist (Local)	182,000
3.2.3 Social Safeguards Specialist (Local)	182,000
3.2.4 Gender Specialist (Local)	100,000
3.2.5 Project Accountant (Local)	138,000
3.2.6 Administrative Officer (Local)	63,000
3.2.7 Team Assistant (Local)	53,000
3.2.8 Road and Bridge Engineer/PST Coordinator (International)	950,000
3.2.9 Procurement Specialist (International)	352,000
3.2.10 Financial Management Specialist (International)	256,000
3.2.11 Environmental Safeguards Specialist (International)	293,000
3.2.12 Social Safeguards Specialist (International)	293,000
3.2.13 Two vehicles for project management operations	60,000
3.2.14 Operating costs	340,000
3.2.15 Yearly audits	50,000
Component 4: Contingent Emergency Response	0
Total	**66,000,000**

[50] This includes: (i) updating of technical specifications; (ii) improvement/accreditation of construction material testing laboratory; (iii) road maintenance supervision capacity building program within PWD; and, (iv) practical road management capacity building program within PWD.

ANNEX 3: ECONOMIC ANALYSIS

COUNTRY: Vanuatu
Vanuatu Climate Resilient Transport Project

A. Economic Evaluation Assumptions

1. **To ensure that the road investments generate enough economic benefits that warrant the investments, a cost benefit analysis was conducted for the project road using the Roads Economic Decision (RED) Model Version 5.0[51] that computes annual road agency and users' costs for each project alternative over the evaluation period.** The quantities of resources consumed, and vehicle speeds are calculated first and then multiplied by unit costs to obtain total vehicle operating costs, travel time costs, and carbon dioxide (CO_2) emissions. The resources consumed, and vehicle speeds are related to traffic volume and composition, road surface type, geometric characteristics, and roughness.

2. **The quantified benefits computed by RED comprise savings in vehicle operating costs, travel time costs, road maintenance costs due to the road improvements, and a reduction in costs of CO_2 emissions with the project.** For the RED calculations, the following assumptions were applied:

(a) A discount rate of 6 percent and an evaluation period of 20 years;
(b) A conversion factor of 0.87 to convert financial costs into economic costs to remove taxes from financial costs;
(c) The road works will commence in 2021 and will have a duration of two years;
(d) The average daily traffic annual increase rate is 3.0 percent per year for passenger vehicles and trucks over the evaluation period, based on estimated GDP growth projections;[52]
(e) Generated traffic of 50 percent; and,
(f) Social cost of carbon of US$82 per ton equivalent in 2021 increasing to US$125 per ton equivalent in 2040, based on high scenario for the social cost of carbon derived from the 2017 World Bank guidance note on shadow price of carbon in economic analysis.[53]

3. **Table 12 presents the vehicle fleet economic unit, basic characteristics, and the traffic composition on the project road.**

[51] RED is a software tool for the analysis and appraisal of road maintenance, improvements and investment decisions on low volume roads developed by the World Bank and the Sub-Saharan Africa Transport Policy Program.
[52] The IMF predicts that the GDP will increase on average by 3.1 percent per year from 2018 to 2024 according to the World Economic Outlook Database, October 2019.
[53] The guidance note presents low and high scenarios of the social cost of carbon over time, from which the high scenario was used due to positive net CO_2 emission of the project.

Table 12: Vehicle Fleet Economic Unit Costs and Characteristics

	Car	Pickup	Truck	Minibus
New Vehicle Cost (US$/vehicle)	22,000	35,000	45,000	36,000
New Tire Cost (US$/tire)	134	192	268	205
Fuel Cost (US$/liter)	1.4	1.4	1.4	1.4
Lubricant Cost (US$/liter)	6.2	6.2	6.2	6.2
Maintenance Cost (US$/hour)	14.2	14.2	14.2	14.2
Crew Cost (US$/hour)	5.1	4.5	4.5	4.5
Overhead (US$/year)	2,200	3,500	4,500	3,600
Interest Rate (percentage)	6.0	6.0	6.0	6.0
Passenger Working Time (US$/hour)	7.6	5.1	5.1	5.1
Passenger Non-work Time (US$/hour)	1.9	1.3	1.3	1.3
Annual Utilization (km)	20,000	40,000	40,000	30,000
Annual Utilization (hours)	1,248	2,496	2,496	1,872
Service Life (years)	12	12	12	12
Number of Passengers (#)	3	8	16	12
Operating Weight (tons)	1.9	3.3	5.9	3.0
Traffic Composition (Percentage)	16	69	2	13

4. **The length of South Santo Road to be upgraded from gravel to paved road under VCRTP totals 60.2 kilometers.** The road is unpaved in poor condition. The current average daily traffic on the road ranges from 116 to 444 vehicles of which 69 percent are small commercial vehicles (pickups). The existing road is two-lane 4 to 5 meters wide, traversing on a flat terrain on the Saint Michel–Maniao River section, while on a rolling terrain on the Maniao River–Tasiriki section. Table 13 presents the current basic road characteristics.

Table 13: Basic Road Characteristics

Road Section	Length (km)	Terrain	Surface Type	Condition	Traffic (vehicles/day)
Saint Michel–Maniao River	31.2	Flat	Unpaved	Poor	444
Maniao River–Tasiriki	29.0	Rolling	Unpaved	Poor	116
Total	**60.2**				

5. **The total financial capital cost for the road works on the whole road section is estimated at US$55.8 million.** Table 14 presents the road works characteristics.

Table 14: Road Works Characteristics and Costs

Road Section	Road Work	Initial Investment (US$ million)	Total Cost per Kilometer (US$ million/km)
Saint Michel– Tasiriki	Upgrading to sealed road	55.8	0.93

B. Economic Evaluation Results

6. **The overall EIRR of the project is 16.9 percent and the NPV is US$55.9 million corresponding to a B/C ratio of 2.3.** Normal traffic benefits account for 80.1 percent of the project benefits, generated traffic benefits for 20.0 percent, and CO_2 emissions benefits for -0.6 percent. Table 15 summarizes the economic evaluation results for the whole road

section.

Table 15: Economic Evaluation Results

Road Section	EIRR (%)	NPV (US$ million)	B/C Ratio
Saint Michel–Tasiriki	16.9	55.9	2.3

7. **Sensitivity analysis shows that the project is economically justified even if construction cost is 20 percent higher or if the project benefits are 20 percent lower or both.** If construction costs were 20 percent higher and the project benefits were 20 percent lower, the EIRR would drop to 10.7 percent. Switching values analysis shows that construction costs would have to increase by 119 percent for the NPV to be equal to zero; thus, the project remains economically justified with a possible increase of construction cost by 60 percent due to the import of aggregates. Table 16 presents the results of sensitivity analysis.

Table 16: Sensitivity Analysis Results

Indicator	Sensitivity Analysis			
	Base	A: Cost+20%	B: Benefit-20%	C: A & B
EIRR (%)	16.9	13.9	13.3	10.7
NPV (US$ million)	55.9	46.5	35.3	25.9

C. GHG Accounting

8. **The total gross CO_2 emissions over the 20-year evaluation period under the without-project scenario are estimated at 57,193 tons and under the with-project scenario at 69,214 tons resulting in a net increase of CO_2 emissions of about 12,021 tons, or 601 tons per year.** The increase in GHG emissions is attributed to the traffic generated by the road upgrade.

ANNEX 4: SAFEGUARDS

COUNTRY: Vanuatu
Vanuatu Climate Resilient Transport Project

Environmental and Social (including Safeguards)

1. The project triggers four World Bank safeguards policies: (i) Environmental Assessment (OP/BP 4.01); (ii) Natural Habitats (OP/BP 4.04); (iii) Indigenous Peoples (OP/BP 4.10); and, (iv) Involuntary Resettlement (OP/BP 4.12). VCRTP is a Category B project under the World Bank environmental and social screening guidelines as the activities and investments are not likely to cause significant or irreversible environmental impacts, or negative social impacts. Potential environmental and social impacts can be mitigated.

2. As part of project preparation, a comprehensive ESIA and an ESMP have been prepared. The ESIA examines the project's potential negative and positive impacts and recommends any measures needed to prevent, minimize, mitigate and/or compensate for adverse impacts and improve environmental and social performance. The ESIA has undertaken screening of the project and scoping of the potential impacts, it provides a description of the baseline conditions, and it gives details on the predicted impacts from the project activities. It also provides recommended mitigation measures and monitoring plan which have been taken forward and incorporated into the ESMP.

3. **Environmental Assessment (OP/BP 4.01).** The planned works on South Santo Road have the potential to create a variety of impacts through its design and implementation. These impacts can either be positive (improve accessibility for community members) or negative (possible degradation of river quality) depending on the activity and the receptors involved. Potential major environmental impacts and proposed mitigation measures are listed in Table 17, while potential moderate and minor environmental impacts are described further in ESIA and ESMP:

Table 17: Potential Major Environmental Impacts and Proposed Mitigation Measures

Areas	Potential Impacts	Proposed Mitigation Measures
Water Resource Quality	Risk to structural integrity of upgraded road in areas of high ground water table increasing with projected climate change impacts. Overtopping and deterioration of road surface from elevated water levels	Design process to take elevated water table into account and consider elevating roads above the current level – to match the achievements of other sections of South Santo Road which have previously been elevated above ground water table level.
	Changes to the Navaka River from poorly planned river gravel extraction schedules	a. Undertake study on the historical extraction, existing volumes and replenishment of the Navaka River gravels. Study will determine maximum amount of gravel to be extracted annually for this project. b. Recommended extraction rate based on study shall not be exceeded. c. Extraction will only happen under valid permit from Department of Geology and Mines which is subject to approval of an Environmental Mitigation Management Plan by the DEPC. d. Gravel should be removed during the dry seasons only. e. If feasible, required volume should be extracted in a staged way – total volume for extraction should be split across dry seasons and stockpiled until needed. f. Reduce the overall amount of river aggregate needed by design solutions which maximise use of coronous aggregates.
Geological Resources (construction aggregates, sand, soils)	Changes in the riverbank profile from use of machinery during river crossing construction potentially leading to instability or erosion of banks.	a. Set conservative working areas along the rivers and ensure that no machinery works outside these areas. b. Replant native species on the riverbank on completion of work.
	An over extraction of gravel from the Navaka (or any other) river beyond its natural replenishment rate would lead to a change in the natural ecosystem	a. Undertake study on the historical extraction, existing volumes and replenishment of the Navaka River gravels. Study will determine maximum amount of gravel to be extracted annually for this project.

	function of the braided river.	b. Recommended extraction rate based on study shall not be exceeded. c. Extraction will only happen under valid permit from Department of Geology and Mines. d. Gravel should be removed during the dry seasons only. e. If feasible, required volume should be extracted in a staged way – total volume for extraction should be split across dry seasons and stockpiled until needed. f. Reduce the overall amount of river aggregate needed by design solutions which maximise use of coronous aggregates.
River Hydrology (construction aggregates, sand, soils)	Ongoing changes to the flow path of the Navaka River could result in any bridge becoming undermined over time as the river moves towards and even beyond the footings. The Navaka River plain is flat and easy channeled by the river, placement of bridge footings on the alluvial plain has the potential to interrupt the natural river changes.	Engineer Design Team will conduct a detailed study of Navaka River to determine riverbank characteristics, trends of the river course changes and a variety of different bridge locations and widths to identify the most climate resilient option.

4. **Coastal reinforcement for road protection.** At Tasiriki School there is a need for stabilization works along the coastline to protect the road embankment from further erosion caused by sea wave action. The protection proposed in the technical assessment recommended approximately 190 meters of gabion cages all approximately 4 to 5 meters high. During the development of the ESIA, it was determined that, as the students from the school are regular users of the beach, gabion cages would not be the safest solution to use for erosion control due to the risk of accident or injury caused by schoolchildren climbing over the cages to access the beach. A potentially safer option would be the use of geotextile erosion control bags for the length of this section to reduce the risk of injury.

5. **Natural Habitats (OP/BP 4.04).** While it is documented that the terrestrial environment along South Santo Road is not comprised of natural habitat, the Navaka River system is considered as a natural habitat under the definition of OP/BP 4.04. There have been ongoing human activities at the site (annual gravel extraction and small-scale harvesting of freshwater species for subsistence and aquaculture); however, the area's primary ecological functions have not essentially been modified. The freshwater species as described in the ESIA are largely native.

6. **Gravel sourcing.** It is expected that most project aggregates will be sourced locally on Santo from a selection of quarries along South Santo Road. The coronous aggregates required for sub-base and base-course material and stone chips required for premix and aggregate for concrete. There are adequate sources of coronous materials from quarries along the route, and there is a potential source of stone materials from Navaka River. The amount of aggregates available in Navaka River is unknown, however there are large islands which have formed in the river with some notable stands of riparian vegetation. PWD under MIPU considers this to be a viable option as a source of stone for VCRTP. This viability is still subject to further hydrological, morphological and ecological assessment by the Design Engineer team during the detailed design stage. The team (consists of an environmental specialist among others) will be responsible for determining the physical and biological impacts of gravel extraction activity on the river and making recommendations to the Contractor.

7. The extraction of any gravels from Navaka River is subject to the assessment and recommendations of the Design Engineer, the Department of Environmental Protection and Conservation (DEPC), and the Department of Geology and Mines. Under the Quarry Act, an environmental assessment will need to be conducted and submitted to DEPC for approval as part of the Quarry Permit application process. Environmental assessment will clearly describe extraction method, the associated environmental impacts (particularly the effects of the stone materials extraction activity to the natural habitats) and any mitigation and monitoring measures that will be incorporated. The mitigation and monitoring measures will be written based on the ESIA, the associated ESMP, and assessment (hydrological, morphological and ecological) results.

8. **Community Conservation Area (CCA).** CCAs have been introduced to Vanuatu as a more successful approach to resource management and conservation than formal protected area management. CCAs function to both conserve native species/habitats and to support sustainably managed use of natural resources (the marine resources, primarily fishery based). None of the areas identified fall within a gazette protected area or National Park. Two areas were identified along South Santo Road which have some level of conservation activities on them: (i) Santo Fisheries Department; and, (ii) Wairua Nature Reserve.

9. The Santo Fisheries Department (or Luganville Reef and Giant Clam Garden) is not a registered CCA. Located on the narrow strip between the ocean and the road at the end of the tar seal road section of South Santo Road. The garden is a tourist attraction which also serves as a small conservation area. Started in 2002, the area has been rehabilitated by transplanting corals, removing Crown of Thorn starfish. The site has been recognized as a conservation area by the Sanma Department of Fisheries; however, it is uncertain whether its status has been formalized as a CCA. The site stretches for an estimated 300 meters along the shoreline and is open 7 days a week to tourists for educational talks and snorkel trips. The land-based facility of the park is a small open area, protected from erosion by a concrete wall and backfilled to provide the platform. While the park may not be a formal CCA, however it will be considered by the VCRTP in the same manner as a formal CCA.

10. The Wairua Nature Reserve was registered as a CCA in February 2019 and covers coastline, mangroves, inland lagoon, coastal forest and agricultural land. The Wairua Nature Reserve CCA is part of Vanuatu's national CCA program which has the objective of assisting rural communities in taking responsible care of their marine resources. In relation to VCRTP, the Reserve runs along the southern boundary of the road reserve stretching for approximately 3.5 kilometers and encompassing Venue Bridge which is proposed to have a replacement bridge installed under the project. There is a PWD quarry located just inside the eastern corner of the boundary in an area that has been designated Zone A: Farm Use.

11. Any works at rivers or streams which feed into the two sites or in low lying coastal parts of the road which are near the sites have the potential to impact on the quality of the water in the area through increase in sedimentation and hydrocarbon spills. The ESMP includes measures for addressing potential negative impacts on natural habitats and CCAs, among others:

(a) The quarry located in the CCA will not be used for the VCRTP works.
(b) Water and soil pollution: No run off from laydown sites, construction works or other project activities will enter any waterways or CCAs either from direct run off or via discharge into a river.
(c) Vegetation clearance: 100 meters buffer zone is to be established around watercourses, coastline and CCA.
(d) Protection of habitats: Clear demarcation of machine operating zones for riverbanks, river gravel extraction, beaches, beach access and near Wairua Nature Reserve (CCA). Demarcation will be clearly mapped in the CESMP.
(e) Laydown Site, Crushing Plant and Stockpile Area: No runoff from laydown or stockpile sites are directed to waterways, CCAs or coastline. Hardstand areas are at least 150 meters inland from any CCA and 100 meters away from any waterway or the coast.
(f) Protection of coastal environment: 100 meters buffer zone enforced along coastline and near CCA.
(g) All environmental management measures applicable to CCAs (as described in in the ESIA and ESMP) will also be applicable to the 10 kilometers stretch of road between Naoneban Bridge and Venaus Bridge. As this section of road already encompasses the Wairua Nature Reserve CCA.
(h) Additional mitigation measures will be required for works within CCA catchment areas and the CESMP will be required to detail the management measures that will be put in place to protect the CCA.

12. **Occupational Health and Safety (OHS).** All civil works activities will call for contractors to implement appropriate standards for OHS and submit an OHS Management Plan as part of their CESMP using the codes of practice attached to the ESMP. The OHS Management Plan will include issues such as workers compensation, first aid services, sanitation and hygiene at the work place, use of personal protective equipment, site safety and accidents as well as implementation of traffic management plan during construction. The OHS Management Plan will be reviewed and cleared by the supervision consultant, who will then monitor its implementation. There will be strict requirements for reporting on OHS issues, with serious issues and fatalities reported to the World Bank within 24 hours. The contractors will be required to submit monthly reports on leading and lagging OHS indicators, and the supervision consultant on its oversight.

13. **Indigenous Peoples (OP/BP 4.10).** In Vanuatu, all public infrastructure works, including associated resource extraction and use, consider the fundamental right that under the nation's constitution all land in Vanuatu belongs to the indigenous custom owners and their descendants. In practice, this has led to a system of compensatory instruments (both legal and by convention) developed over time in order to supplement the more formal regulatory processes while at the same time acknowledging fundamental land rights. These have been established in order to ensure that resource owners are suitably compensated for loss of natural resources, including crops and forest products, quarried materials etc. As a result, accessing land for infrastructure is a complex mixture of systems.

14. The project traverses 15 villages, with 14 villages under customary land tenure. Customary lands are lands belonging to a tribe or a clan, owned by numerous families with ownership is passed down through families, often without formal registration. The project will improve usability of the road in all weather conditions and access to market and social services, including health and education, for indigenous communities along the road.

15. There will be land acquisition impacts affecting an estimated five indigenous households as a result of realigning access roads to three bridges. The impacts will result in marginal loss of productive land, loss of structures and crops that will be fully mitigated through the ARAP. The project grievance redress mechanism (GRM) provides for participation of traditional leaders in the process to promote accessibility and effectiveness of the process.

16. Project preparation consultations indicated broad support for the project. Consultations were conducted with land owners and chiefs along the project alignment to present an overview of the project and anticipated impacts and to seek their feedback. There was overwhelming support for the project. Representatives of customary land owners of the proposed three bridge re-alignment sites gave their consent for the realignment through their lands.

17. The SEP has been prepared for the project in which traditional leaders and customary land owners are required to be consulted throughout project implementation. The SEP is included in the ESIA and ESMP and is required to be updated and detailed at the commencement of the project.

18. **Involuntary Resettlement (OP/BP 4.12).** Involuntary resettlement impacts were assessed during project preparation against preliminary project design information. Impacts that could be identified are related to the realignment of access roads for three bridges to be rebuilt in new locations. The draft ARAP has been prepared for the project based on field surveys and consultations with communities and affected persons. It describes impacts that could be identified during project preparation along with mitigation measures. The ARAP will be updated during project implementation based on the project's detailed design. The document describes due diligence requirements to update the ARAP, including review of design to identify and minimize impacts, detailed measurement survey, consultations, valuation of affected assets, requirements for Government approval and World Bank review and non-objection. The following describes key project components and preliminary due diligence of associated impacts.

19. **Road upgrading.** Road improvements will be designed during project implementation after river crossing works have been fully costed and will focus on priority section. These are expected to include surfacing/reconstruction of pavement and drainage. Road improvements are planned to be on existing alignments and not expected to include road widening (typical roads widths are considered sufficient for 2 lanes). Resettlement impacts not anticipated. However, resettlement due diligence during detailed design will need to assess impacts, including any modification to existing road footprint, drainage outflows and any needs for roadside clearance.

20. **Bridges.** Ten bridges/river crossing are planned. Of these, three bridges will replace existing crossings (on the Maniao, Okoro, and Navaka Rivers), and will be constructed in new locations approximately 100-300 meters from the current crossings. This will require realignment of the approach roads and the permanent acquisition of a total estimated 2.85 hectares of farming land from three customary land owners. The other seven bridges will be built on the existing footprints of the existing crossings with no realignment of approach roads involved.

21. **Box culverts.** There are 102 culverts planned to be replaced or newly constructed. The culverts and locations will be designed during project implementation. Culverts not anticipated to cause resettlement impacts as they will be within the existing road reserve. However, due diligence is required during detailed design once locations are confirmed. This will include assessment of impacts on any changed water flow and consultation with adjacent land owners.

22. **Coastal protection.** Resettlement impacts are not anticipated, but due diligence will be required during detailed design.

23. The involuntary resettlement impacts identified during project preparation represent marginal losses and do not require resettlement or livelihood restoration measures. The losses of land represent less than 10 percent of total productive land owned by the affected households. Mitigation for the loss of land is planned through replacement land of the existing road alignments to be replaced and through customary in-kind gifts from the Government. These land losses will also require the removal of two houses along with trees and crops. Non-land assets are to be compensated in cash at replacement cost. The affected houses can be rebuilt on remaining land outside the new alignment.

HIV/AIDS

24. In accordance with the requirements of the World Bank's Standard Procurement Document, an HIV/AIDS education program will be conducted based on the World Bank's 'The Road to Good Health' toolkit, for civil works activities exceeding US$10 million.

ANNEX 5: GENDER-BASED VIOLENCE

COUNTRY: Vanuatu
Vanuatu Climate Resilient Transport Project

1. As noted in the main text, the project was screened for the project-induced GBV impacts using World Bank's 'GBV Risk Assessment Tool' and was classified within the "Moderate Risk" category. Project activities are likely to cause labor influx, both foreign and national, and introduce or increase salaried labor. This has the potential to shift community power dynamics, increasing risks of GBV and VAC.

2. To address project-induced risks in the context of the broader gender gaps present at the project site in a coherent and holistic way, VCRTP will implement the GBV/VAC Strategy. The strategy builds on previous experience within the Pacific and aligns with the recommendations of the September 2018 Good Practice Note (GPN) 'Recommendations for Addressing Gender-Based Violence in Investment Project Financing Involving Major Civil Works'.[54] This strategy will consist of three pillars: (i) needs assessment; (ii) prevention; and, (iii) support services. It will focus on project-inducted GBV risks. It should be noted that this strategy is not an additional project instrument; instead, it synthesizes information from other project documentation to give an overview of all GBV/VAC-related content and actions for the project.

3. **Pillar 1: Needs Assessment.** As part of the preparation process, the project has undertaken consultation with a variety of stakeholders.[55] To complement the initial assessment:

(a) Further consultation will be undertaken by the Gender Specialist in the PIU with technical support from the World Bank and in collaboration with the Sanma Women's Desk Officer and through Samna provincial government with Area Administrators, village chiefs, pastors and local organizations (CAVAW, Family Protection Unit, Sanma Counselling Centre, Save the Children, Vanuatu Family Health, Wan Smol Bag, World Vision). The objectives of the consultations are to: (i) raise awareness about the project and potential impacts (positive and negative); (ii) share information on existing awareness raising activities, local service provision and referral pathways; (iii) develop targeted GBV/VAC risk mitigation and response strategies including awareness raising materials, training and response protocols; and, (iv) establish GRM including GBV/VAC Complaints Team M&E protocols.[56]

(b) The GBV/VAC Specialist and PWD with technical support from the World Bank will undertake a safety review with women and men currently – or previously – working on road projects (East Coast Road), road maintenance (e.g., vegetation control) or other employment related to road works to assess any issues related to violence in connection with the work and generate strategies to address these.

[54] World Bank, Recommendations for Addressing Gender-Based Violence in Investment Project Financing Involving Major Civil Works, September 2018. http://pubdocs.worldbank.org/en/399881538336159607/Good-Practice-Note-Addressing-Gender-Based-Violence.pdf

[55] In-country consultations have been undertaken with government at national level with the Department of Women's Affairs under the Ministry of Justice and Community Services, MIPU, and Strategic Policy, Planning and Aid Coordination under the Prime Minister's Office; and at a local level with Sanma Provincial Council. Consultations have also been undertaken with non-governmental organizations (NGOs) including international NGOs including Oxfam, Red Cross, and Save the Children; and local NGOs including Committee Against Violence Against Women (CAVAW), Vanuatu Family Health Association, Vanuatu Women's Centre (VWC) and its satellite branch Sanma Counselling Centre, and Wan Smol Bag. Development partners including the Australian High Commission, New Zealand High Commission and the United Nations (UNFPA, UNICEF and UN Women) have also been consulted.

[56] It is envisaged that three two-day workshops will be needed to: (i) socialize the project and share information; (ii) develop response strategies; and, (iii) establish GRM and M&E protocols.

4. **Pillar 2: Prevention.** To reduce risks of GBV and VAC, the following actions will be implemented (aligning with recommendations from the World Bank's 2018 GPN on GBV):

(a) The risks and impacts of GBV and VAC will be documented within the ESMP, which will also include a GBV/VAC Action Plan (see Table 18 for details) – including Codes of Conduct and a Response Protocol for managing any reported incidents. Contractors will be required to ensure that their CESMP is aligned with the ESMP.

(b) VCRTP will adapt and implement Codes of Conduct for workers and managers hired for civil works, as well as Client staff.

(c) All workers employed on VCRTP will participate in GBV & VAC training on the codes of conduct including: (i) expected behaviors including potential disciplinary actions against perpetrators; (ii) how to report any project-related cases of GBV/VAC including guidelines for effective resolution; and, (iii) information on available service providers. This training will be coordinated by the Gender Specialist. The initial training should be conducted by individuals or organizations who have a clear understanding how the Codes of Conduct intersect with workplace rights and obligations and follow-up sessions will be delivered by community liaison officers associated with the project who will also collect monitoring data.

(d) Local service providers will be engaged to develop and disseminate Information, Education, Communication (IEC) and conduct regular community awareness-raising activities in all project areas. This IEC materials and training will inform communities of: (i) Codes of conduct signed by workers; (ii) how to report any project-related cases of GBV/VAC including guidelines for effective resolution; and, (iii) information on available service providers. This awareness will be coordinated by the Gender Specialist in consultation with Sanma Women's Desk Officer and Sanma Provincial Government.

5. **Pillar 3: Response.** VCRTP will take the following actions to ensure high-quality response to GBV/VAC cases in project areas:

(a) Identify and document referral pathways in the project area for any disclosed incidents of GBV/VAC, ensuring the inclusion of existing community-based response measures and Authorized Persons/ Registered Counsellors under the Family Protection Act.

(b) Develop an effective GRM with anonymous, informal and formal reporting channels to initiate a GBV/VAC complaint. The GRM will engage GBV/VAC service provider(s) in the management of GBV/VAC cases (e.g., through the GBV/VAC Complaints Team) and ensure safe and confidential handling of cases. The cases will be adequately documented through the Response Protocol (part of the GBV/VAC Action Plan).

(c) Provide training for GBV/VAC focal points from the Contractor(s), Supervision Consultant(s), Implementing Agency, and GBV/VAC service provider(s) who will form part of the GBV/VAC Complaints Team.

(d) Strengthen capacity of CAVAW, police and healthcare providers, if needed, by organizing and providing funding for training in coordination with other development partners.

Table 18: Actions Taken to Implement GBV/VAC GPN Recommended Activities During Preparation

Action to Address GBV/VAC Risks	Timing for Action	Who is Responsible for Action	Ongoing Risk Management	Actions Taken During Preparation/Appraisal
Sensitize the IA as to the importance of addressing GBV/VAC on the project, and the mechanisms that will be implemented.	• Preparation • Implementation	• World Bank	• World Bank to monitor and provide additional guidance as necessary	• Discussions held with MIPU-PWD, other donors, NGOs, R4D, etc. • Preparation missions included inputs from GBV specialists, with recommendations documented in Aide-Memoires. • Project documents contain clear strategy for addressing GBV and VAC.
The project's social assessment to include assessment of the underlying GBV/VAC risks and social situation, using the GBV risk assessment tool to provide guidance and keeping to safety and ethical considerations related to GBV/VAC data collection. No prevalence data or baseline data should be collected as part of risk assessments.	• Preparation • Implementation (before civil works commence) • PCN and QER/Decision Review (GBV Risk Assessment Tool)	• IA for social assessment and ESMP • Contractor for CESMP • World Bank for GBV Risk Assessment Tool	• Ongoing review during implementation support missions • Update ESMP and CESMP if risk situation changes	• During preparation discussions held with MIPU-PWD, donors, local NGOs and others to confirm available resources and how best to proceed. • ESMP will contain detailed guidance on how the project will address GBV & VAC. • Issues will be discussed during ESMP consultations.
Map out GBV/VAC prevention and response actors in project area of influence. This should incorporate an assessment of the capabilities of the service providers to provide quality survivor centered services including GBV/VAC case management, acting as a victim advocate, providing referral services to link to other services not provided by the organization itself.	• Preparation • Implementation	• IA	• Update mapping as appropriate	• Done as part of preparation. • Consultation workshops to be undertaken by the Gender Specialist in PIU and the PWD with technical support from the World Bank and in collaboration with the Sanma Women's Desk Officer and through Samna provincial government with Area Administrators, village chiefs, pastors and local organizations.
Have GBV/VAC risks adequately reflected in all safeguards instruments (i.e., ESMP, CESMP)—particularly as part of the assessment in the ESIA. Include the GBV/VAC mapping in these instruments.	• Preparation • Implementation (before civil works commence)	• IA for social assessment and ESMP • Contractor for CESMP	• Ongoing review during implementation support missions • Update ESMP and CESMP if risk situation changes	• Pending. The requirements will be clearly defined in the ESMP, bid documents, and the CESMPs will be reviewed to ensure that they are properly addressed before being accepted for implementation.
Develop a GBV/VAC Action plan including the Accountability and Response Framework as part of the ESMP. The contractor/consultant's response to these requirements will be required to be reflected in their CESMP.	• Preparation • Implementation (before civil works commence)	• IA	• Ongoing review during implementation	• Drafted. Will be reviewed and included as part of the ESMP.
Review the IA's capacity to prevent and respond to GBV/VAC as part of Safeguard Preparation.	• Preparation • Implementation	• World Bank	• Ongoing review during implementation support missions	• Done. Specialized skill-set will be required by IA & Supervision Consultant.

			• Update ESMP if risk situation changes	
As part of the project's stakeholder consultations, those affected by the project should be properly informed of GBV/VAC risks and project activities to get their feedback on project design and safeguard issues. Consultations need to engage with a variety of stakeholders (political, cultural or religious leaders, health teams, local councils, social workers, women's organizations and groups working with children) and should occur at the start and continuously throughout the implementation of the project.	• Consultations need to be continuous throughout the project cycle, not just during preparation.	• IA	• Monitoring of implementation of the SEP • Ongoing consultations, particularly when CESMP is updated	• Pending. Will be done during consultations on the ESMP. • Consultation workshops to be undertaken by the Gender Specialist in PIU and the PWD with technical support from the World Bank and in collaboration with the Sanma Women's Desk Officer and through Samna provincial government with Area Administrators, village chiefs, pastors and local organizations.
The Stakeholder Engagement Plan (SEP) of the project, which will be implemented over the life of the project to keep the local communities and other stakeholders informed about the project's activities, to specifically address GBV/VAC related issues.	• Consultations need to be continuous throughout the project cycle, not just during preparation.	• IA	• Monitoring of implementation of the SEP • Ongoing consultations, particularly when CESMP is updated	• Pending. Will be included in the SEP
Make certain the availability of an effective GRM with multiple channels to initiate a complaint. It should have specific procedures for GBV/VAC including confidential reporting with safe and ethical documenting of GBV/VAC cases. Parallel GRM outside of the project GRM may be warranted for substantial to high risk situations.	Prior to contractor mobilizing	IA, but discussed and agreed upon with the World Bank	Ongoing monitoring and reporting on GRM to verify it is working as intended	• Pending. Project will implement the same GRM approach successfully implemented for other projects in the Pacific, which includes specific processes for GBV/VAC.
Ensure IA has a Gender Specialist to support project implementation.	Preparation	IA	Ongoing reporting	• Pending. Recommended, given that the project has a Moderate Risk rating and experience with the World Bank-funded Vanuatu Aviation Investment Project has shown that the measures that were in place on paper are not always implemented (e.g., GBV/VAC Complaints Team).
For supervision have a social /environmental specialist in the supervision consultant's team with GBV/VAC specific skills to supervise issues related to GBV/VAC (e.g., supervise signing of Codes of Conduct (CoCs), verify working GRM for GBV/VAC is in place, refer cases where needed) and work with GBV/VAC Services Providers as entry points into service provision to raise awareness of the GRM.	During procurement evaluation process	IA	Ongoing reporting	• Pending. The TOR for the Supervision Consultant will require the team to have someone with experience in addressing GBV/VAC.
Projects which do not use loan/credit/grant proceeds to hire GBV/VAC service providers at the start of project implementation encourage Borrowers include an escalation clause in the Environmental & Social Commitment Plan should GBV/VAC risks become apparent over the course of the project implementation.	Preparation	World Bank	World Bank	• Not required. The project includes funding specifically to address GBV/VAC and this will be used to fund the services provider.

ANNEX 6: CONTINGENT EMERGENCY RESPONSE COMPONENT

COUNTRY: Vanuatu
Vanuatu Climate Resilient Transport Project

1. The contingent emergency response component (CERC) is a contingent financing mechanism available to gain rapid access to financing to respond to a crisis or emergency and provides for immediate rehabilitation or reconstruction needs without needing to first restructure the original project; thus, facilitating rapid implementation. The CERC minimizes time and effort needed to make available uncommitted funds from an Investment Project Financing (IPF) to finance urgent needs. Following an eligible crisis or emergency, the Borrower may request the World Bank to re-allocate project funds to support emergency response and reconstruction. This component would draw from the uncommitted credit and grant resources under the project from other project components to cover emergency response. Consistent with OP/BP 8.0 the CERC does not finance humanitarian assistance or relief.

2. Key principles relevant to CERCs include: (i) focus on activities that can readily be implemented on the ground considering the circumstances; (ii) favor smaller-scale, local activities that generate buy-in and goodwill; (iii) keep the scope simple and realistic, especially where local conditions do not allow much situational analysis; and, (iv) take advantage of working with and completing the activities of development partners to maximize impacts.

3. **Activation Criteria.** The project-specific CERC will be funded under the VCRTP budget. Following an eligible crisis or emergency, the CERC would be implemented in accordance with the rapid response procedures governed by the World Bank under OP/BP 8.0 *Rapid Response to Crises and Emergencies.* In addition, the provisions of the IPF Policy, paragraph 12, regarding “Projects in Situations of Urgent Need of Assistance or Capacity Constraints” apply to CERCs when they are triggered. The funding provision for the CERC is SDR 0.00 million, however can be increased by drawing down against uncommitted IDA funds under other components if necessary. Disbursement conditions would define the circumstances under which the CERC funds would become available.

4. The request to trigger the CERC and seek approval of activities to be eligible expenditures for financing under Disbursement Category 3 will be communicated to the World Bank by Vanuatu in a letter. The letter should include information pertaining to: (i) the nature of the emergency, its impacts and confirmation of causal relationship (as supported by the “Declaration of Disaster”) between the event and the need to access the financing allocated to Disbursement Category 3; (ii) the nature of emergency activities (brief description); and, (iii) the CERC action plan of activities.

5. The Financing Agreement stipulates the establishment of adequate implementation arrangements, satisfactory to the World Bank, including staff and resources for implementation of activities under Component 4: Contingent Emergency Response, to the World Bank for its review and approval. A draft CERC OM has been prepared for VCRTP, detailing: (i) the process for triggering the CERC; (ii) the proposed emergency activities to be financed by the proceeds of the CERC; (iii) the safeguards arrangements; and, (iv) the coordination and implementation arrangements related to the execution of the activities. At the start of the project implementation, a CERC Environmental and Social Management Framework (ESMF) will be developed which will indicate the kinds of emergency response actions that can proceed with no additional environmental and social assessment, and which ones would require assessment (and at what level) prior to being initiated. The CERC ESMF will be included as an annex to the CERC OM.

ANNEX 7: PCRTP SOP

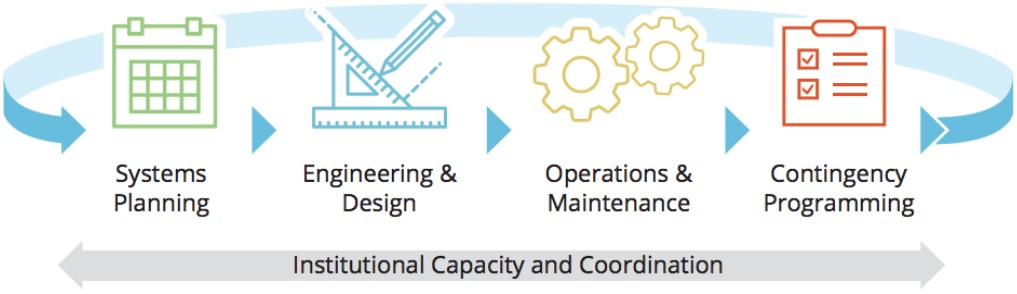
COUNTRY: Vanuatu
Vanuatu Climate Resilient Transport Project

1. The PCRTP SOP includes a series of independent projects to multiple Recipients who are facing a common set of development issues. The SOP share a common design to finance activities to systematically improve the resilience of PICs' transport networks to natural hazards and climate change, while recognizing and providing flexibility to address the fundamental differences and needs of the countries included within the SOP. This means that though each project in the SOP follows the common design and is aligned with the overall program objectives, each project can be adapted to reflect the local realities and can move forward at its own pace. Each SOP therefore includes activities and investments at the country-level, with each of the country projects being self-standing.

2. A key characteristic of this SOP approach is that each project in the series is self-standing once the template has been designed. This means that each project design in the series follows the program template but may be adapted to support the specific requirements from each individual country according to local realities and to move forward at its own pace (each country follows its own path based on its readiness). Most importantly, each of the projects is justified on its own merits even if the other projects under the program do not materialize.

3. **Development objectives.** The goal of the series is to: (i) support the Recipients in improving the resilience of their transport sector; and, (ii) in the event of an Eligible Crisis or Emergency, to provide an immediate response to the Eligible Crisis or Emergency. The programmatic series will focus on the road, maritime and aviation sectors, which have been identified as vulnerable in PICs. Each project in the SOP will have a PDO that feeds into the overarching development objective of the program.

4. The SOP will support Recipients through integrating risks in a holistic manner, through the integration of resilient transport interventions into decision-making and implementation. The SIDS report outlines an infrastructure lifecycle that includes four key aspects for institutional capacity and coordination: (i) systems planning; (ii) engineering and design; (iii) operations and maintenance; and, (iv) contingency programming (Figure 2).



World Bank, Climate and Disaster Resilient Transport in Small Island Developing States: A Call for Action. 2017.

Figure 2: Transport Infrastructure Lifecycle

5. **Program components.** PCRTP consists of the following four pillars:

(a) **Pillar 1**: **Sectoral and Spatial Planning Tools**. This involves technical assistance to support countries by bringing about transformative change in the way that climate change is addressed in the transport sector. New tools are now readily available to PICs and have the potential to work well in low capacity environments. For instance, all governments can mitigate the impact of climate change and extreme weather events by assessing the level of hazard frequency and severity and map this against major points of vulnerability along their transport network. Examples of potential technical assistance that countries may consider include: (i) tools that enable stakeholders to identify vulnerabilities and design and evaluate appropriate interventions to make roads, airports, and ports more resilient; and, (ii) climate resilient transport strategies that identify measures to enhance resilience and prioritize investments to balance vulnerability reduction against cost implication. This will involve using best available climate change and natural hazard risk information to identify key hazard types and risk levels, such as sea-level rise, tropical cyclones, extreme rainfall and temperature events, tsunamis, etc., and then assessing the likely severity and timing of risk impacts for all major links of the transport network.

(b) **Pillar 2: Climate Resilient Infrastructure Solutions.** Complex design solutions are often not fit-for-purpose in PICs due to their limited resources (human, fiscal and material). In most PICs, even vital, basic drainage is largely absent due to limited capital. Limited material resources create cost and environmental challenges when repairing, rehabilitating or building infrastructure. For example, some PICs need to import aggregate from other domestic islands while others import from other countries, over a thousand kilometers away. In addition, some PICs rely on desalination facilities for water. Considering their resource constraints, for the road sector, short- to medium-term design efforts will center on installing drainage and raising low-lying coastal roads. Long-term solutions may also involve moving vulnerable coastal roads inland, with due consideration to land issues and of course limited capital. This component will also finance designs that consider more innovative and resilient civil engineering solutions, for example geosynthetics such as the use of geocells for low-volume roads.[57] Finally, coastal infrastructure may also be strengthened to help protect ports, and adjacent airports and roads. A menu of hard and soft options for coastal protection will be available to PICs.[58] Traditional engineering approaches may focus on construction of seawalls, breakwater and groins. Greener options to replace or complement hard coastal infrastructure may also be financed such as living shorelines and recovery of coastal habitats for mangrove replanting. A PICs choice between hard and soft options ultimately depends on availability of capital and the relative balance of technological and labor resources. All these examples are fit-for-purpose in the Pacific because the designs can be readily implemented in low capacity environments and they are generally more affordable than complex resilience solutions more appropriate for large countries with greater capacity and resources.

(c) **Pillar 3: Strengthening the Enabling Environment.** Measures to strengthen the enabling environment include capacity building, and legal and regulatory reform. Investment in capacity building is essential because a consequence of PICs' small populations is that few ministries have even one member of staff focusing on climate resilience and many working in infrastructure are not fully informed of the risks that climate change and severe weather events pose to transport infrastructure. Therefore, project management support within key

[57] Geocell pavements are an intermediate technology between interlocking paving stones and surface dressing used to construct durable concrete pavements which can have a lower cost than conventional alternatives. The following report provides the strengths, weaknesses, and O&M implications of four different types of concrete pavement, including geocell concrete in the PIC context: Johnson, Sam; Faiz, Asif; Visser, Alex. 2019 *Concrete Pavements for Climate Resilient Low-Volume Roads in Pacific Island Countries.* 2019. © World Bank.

[58] Examples include: (i) PRIF, Affordable Coastal Protection in the Pacific Islands, February 2017; and, (ii) PRIF, Guidance for Coastal Protection Works in the Pacific Island Countries, November 2017.

implementing entities will be a core component of delivery for all resilience projects. Support may include the provision of Climate Resilient Transport Advisers/Consultants to Ministries of Infrastructure or road authorities and resilience-related training and/or workshop(s) for relevant ministries and civil society organizations that deliver climate change related services for the transport sector. Key skills targeted for capacity building would include: coastal engineering, geographic information system (GIS) and database analysis, hydrodynamic modeling, geo-morphology, project management, and M&E. The enabling environment will also be strengthened through new and amended legal frameworks that enable PIC governments to appropriate funding and create programs to strengthen resilience. On the regulatory side, reform will focus on updating design and planning standards and maintenance procedures, considering expected climate change. Creating incentives to support resilience-focused maintenance and fostering stakeholder engagement in the design of regulations are crucial for success. Possible measures include: fit-for-purpose obligations,[59] performance-based standards, technical standards, and codes of practice.

(d) **Pillar 4: Contingency Emergency Response.** Since PICs will remain vulnerable to climate change and severe weather events even with the successful implementation of the first three pillars, supporting post-disaster recovery will remain essential. Therefore, this component will focus on emergency repairs to infrastructure (e.g., roads, wharves, jetties, runways, bridges, seawalls) in case of a disaster event by including a "zero-dollar" CERC in the project design.

6. PCRTP currently consists of two phases. A first phase (Phase 1) includes a series of projects for Samoa, Tuvalu and Tonga, all of which were approved by the Board in 2018 with a closing date of 2024. VCRTP will be the fourth project in the programmatic approach and the first project under a second phase (Phase 2) of PCRTP. The total cost of PCRTP is estimated to amount US$147.97 million equivalent including US$147.77 million in IDA financing and US$0.20 million in GFDRR grant (Table 19).

Table 19: Overview of PCRTP SOP

	Project	Project Number	Project Cost (US$ million equivalent)	IDA Financing (US$ million equivalent)	Other Sources of Financing	Approval Date	Closing Date
1	Samoa Climate Resilient Transport Project (SCRTP)	P165782	35.75	35.75	N/A	September 14, 2018	January 31, 2024
2	Tonga Climate Resilient Transport Project (TCRTP)	P161539	27.25	26.02	1.23 (Road Fund)	November 29, 2018	December 31, 2024
3	Maritime Investment in Climate Resilient Operations (MICRO)	P161540	20.20	20.00	0.20 (GFDRR Grant)	December 18, 2018	January 31, 2024
4	Vanuatu Climate Resilient Transport Project (VCRTP)	P167382	66.00	66.00	N/A	January 23, 2020	December 31, 2025
		Total	**149.20**	**147.77**	**1.43**		

[59] An obligation that binds a counterparty to ensure works are designed and constructed for their intended purpose. A consultant or contractor then would be liable to the client (i.e., country) in a situation where it has not met the obligation (e.g., ensuring a road has been constructed to handle current and future climate change and severe weather events).

ANNEX 8: MAP OF VANUATU WITH PROJECT SITES

COUNTRY: Vanuatu
Vanuatu Climate Resilient Transport Project