



Completion Report

Project Number: 42391-013
Loan Number: 2832
Grant Numbers: 0275, 0276, and 0526
July 2020

Vanuatu: Port Vila Urban Development Project

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Asian Development Bank

CURRENCY EQUIVALENTS

Currency unit – vatu (Vt)
– Australian dollar (A\$)

	At L2832/G-275/G0276 Appraisal	At G0526 Appraisal	At Project Completion
	11 October 2011	22 September 2016	31 December 2018
Vt1.00 =	\$0.01	\$0.01	\$0.01
\$1.00 =	Vt96.50	Vt107.42	Vt113.94
A\$1.00 =	\$1.00	\$0.76	\$0.70
\$1.00 =	A\$1.00	A\$1.31	A\$1.42

ABBREVIATIONS

ADB	–	Asian Development Bank
AusAID	–	Australian Agency for International Development
CSF	–	community sanitation facility
DEPC	–	Department of Environmental Protection and Conservation
DFAT	–	Department of Foreign Affairs and Trade
DMF	–	design and monitoring framework
DSCD	–	design, supervision, and capacity development
GAP	–	gender action plan
GEF	–	Global Environment Fund
GOA	–	Government of Australia
GOV	–	Government of Vanuatu
IEE	–	initial environmental examination
MFEM	–	Ministry of Finance and Economic Management
MIPU	–	Ministry of Infrastructure and Public Utilities
O&M	–	operation and maintenance
PMU	–	project management unit
PVMC	–	Port Vila Municipality Council
R4D	–	Roads for Development Program
SDR	–	special drawing rights
TA	–	technical assistance
WASH	–	water, sanitation, and hygiene

NOTE

In this report, “\$” refers to United States dollars unless otherwise stated.

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BASIC DATA

A. Loan and Grant Identification

1.	Country	Vanuatu
2.	Loan number and financing source ▪ L2832	ADB concessional ordinary capital resource (OCR) (original ADB Special Fund Resource)
	Grant number and financing source ▪ G0275 ▪ G0276 ▪ G0526	Government of Australia Government of Australia Global Environment Fund: Least Developed Countries Fund
3.	Project title	Port Vila Urban Development Project
4.	Borrower	Republic of Vanuatu
5.	Executing agency	Ministry of Finance and Economic Management
6.	Amount of loan and grants ▪ L2832 ▪ G0275 ▪ G0276 ▪ G0526	SDR3,174,000 (\$5,000,000 equivalent) \$25,611,000 \$5,389,000 \$2,870,000
7.	Financing modality ▪ L2832 ▪ G0275 ▪ G0276 ▪ G0526	Loan Grant Grant Grant

B. Loan and Grant Data

1.	Appraisal ▪ L2832 – Date started – Date completed ▪ G0275 – Date started – Date completed ▪ G0276 – Date started – Date completed ▪ G0526 – Date started – Date completed	29 March 2011 14 April 2011 29 March 2011 14 April 2011 29 March 2011 14 April 2011 26 January 2016 3 February 2016
2.	Loan and grant negotiations ▪ L2832 – Date started – Date completed ▪ G0275 – Date started	7 November 2011 9 November 2011 7 November 2011

	– Date completed	9 November 2011
	▪ G0276	
	– Date started	7 November 2011
	– Date completed	9 November 2011
	▪ G0526	
	– Date started	None
	– Date completed	None
3.	Date of Board approval	
	▪ L2832	13 Dec 2011
	▪ G0275	13 Dec 2011
	▪ G0276	13 Dec 2011
	▪ G0526	08 Dec 2016
4.	Date of loan and grant agreements	
	▪ L2832	12 Dec 2012
	▪ G0275	12 Dec 2012
	▪ G0276	12 Dec 2012
	▪ G0526	16 Feb 2017
5.	Date of loan and grant effectiveness	
	– In loan and grant agreements	12 Mar 2013
	▪ L2832	12 Mar 2013
	▪ G0275	12 Mar 2013
	▪ G0276	17 May 2017
	▪ G0526	
	– Actual	13 Feb 2013
	▪ L2832	13 Feb 2013
	▪ G0275	13 Feb 2013
	▪ G0276	18 Apr 2017
	▪ G0526	
	– Number of extensions	0
	▪ L2832	0
	▪ G0275	0
	▪ G0276	0
	▪ G0526	
6.	Project completion date	
	– Appraisal	
	▪ L2832	31 Dec 2017
	▪ G0275	31 Dec 2017
	▪ G0276	31 Dec 2017
	▪ G0526	31 Dec 2018
	– Actual	
	▪ L2832	31 Dec 2018
	▪ G0275	31 Dec 2018
	▪ G0276	31 Dec 2018
	▪ G0526	31 Dec 2018
7.	Loan and grant closing date	
	– In loan and grant agreements	
	▪ L2832	31 Dec 2017
	▪ G0275	31 Dec 2017
	▪ G0276	31 Dec 2017
	▪ G0526	31 Dec 2018

	– Actual	
	▪ L2832	31 Dec 2018
	▪ G0275	31 Dec 2018
	▪ G0276	31 Dec 2018
	▪ G0526	31 Dec 2018
	– Number of extensions	
	▪ L2832	1
	▪ G0275	1
	▪ G0276	1
	▪ G0526	0
8.	Financial closing date	
	– Actual	
	▪ L2832	24 Dec 2019
	▪ G0275	24 Dec 2019
	▪ G0276	24 Dec 2019
	▪ G0526	24 Dec 2019
9.	Terms of loan	
	– Interest rate	
	▪ L2832	1.0% during grace period and 1.5% during amortization period
	– Maturity (number of years)	
	▪ L2832	32
	▪ G0275	Not applicable
	▪ G0276	Not applicable
	▪ G0526	Not applicable
	– Grace period (number of years)	
	▪ L2832	8
	▪ G0275	Not applicable
	▪ G0276	Not applicable
	▪ G0526	Not applicable
10.	Terms of relending (if any)	
	– Interest rate	
	– Maturity (number of years)	
	– Grace period (number of years)	
	– Second-step borrower	

11. Disbursements

a. Dates

	Initial Disbursement	Final Disbursement	Time Interval months
▪ L2832	10 May 2016	20 Dec 2019	45.32
▪ G0275	09 Sep 2014	20 Dec 2019	63.35
▪ G0276	25 Oct 2013	06 Nov 2018	60.39
▪ G0526	3 Jul 2017	20 Dec 2019	20.55
	Effective Date	Actual Closing Date	Time Interval months
▪ L2832	13 Feb 2013	31 Dec 2018	70.54
▪ G0275	13 Feb 2013	31 Dec 2018	70.54
▪ G0276	13 Feb 2013	31 Dec 2018	70.54
▪ G0526	18 Apr 2017	31 Dec 2018	20.4

b. Amount: ADB and Cofinancing

(1) ADB (Loan 2832-VAN) (SDR million)

Category	Original Allocation (1)	Increased during Implementation (2)	Canceled during Implementation ^a (3)	Last Revised Allocation (4=1+2-3)	Amount Disbursed (5)	Undisbursed Balance (6 = 4-5)
01A Civil works drainage and road improvement	2.019	(0.479)	0.006	1.535	1.535	0.000
01B Civil works sanitation	0.487	(0.356)	0.000	0.131	0.131	0.000
01C Civil works hygiene	0.088	0.073	0.003	0.158	0.158	0.000
01D Drainage (15 Sep 2018 onwards)	0.000	1.224	(0.080)	1.304	1.304	0.000
01E Sanitation (15 Sep 2018 onwards)	0.000	0.020	0.020	0.000	0.000	0.000
01F Hygiene (15 Sep 2018 onwards)	0.000	0.076	0.051	0.025	0.025	0.000
02 Interest	0.076	(0.054)		0.022	0.022	0.000
03 Unallocated	0.504	(0.504)		-	0.000	0.000
Total	3.174	-	0.001	3.174	3.174	0.000

() = negative.

^a Canceled amount of SDR574.11 during loan financial closing in December 2019.

(2) Government of Australia (Grant 0275-VAN) (\$ million)

Category	Original Allocation (1)	Increased during Implementation (2)	Canceled during Implementation (3)	Last Revised Allocation (4=1+2-3)	Amount Disbursed (5)	Undisbursed Balance (6 = 4-5)
01A Civil works drainage and road improvement	16.340	(2.617)	(3.340)	10.383	10.383	0.000
01B Civil works sanitation	3.933	0.097	(3.233)	0.797	0.797	0.000
01C Civil works hygiene	0.715	(0.135)	0.285	0.865	0.852	0.013

Category	Original Allocation (1)	Increased during Implementation (2)	Canceled during Implementation (3)	Last Revised Allocation (4=1+2-3)	Amount Disbursed (5)	Undisbursed Balance (6 = 4-5)
01D Drainage (15 Sep 2018 onwards)	0.000	0.826	0.000	0.826	1.125	(0.299)
01E Sanitation (15 Sep 2018 onwards)	0.000	0.073	0.000	0.073	0.005	0.068
01F Hygiene (15 Sep 2018 onwards)	0.000	0.072	0.000	0.072	0.032	0.040
2A Consulting: Implementation advisory consultants	1.161	6.534	(0.721)	6.974	6.974	0.000
2B Consulting: Design international	0.000	(4.164)	4.164	0.000	0.000	0.000
2C Consulting: Design national	0.000	(0.135)	0.135	0.000	0.000	0.000
2D Consulting (15 Sep 18 onwards)	0.000	0.046	0.000	0.046	0.008	0.038
03 Miscellaneous administration support	0.270	0.612	(0.270)	0.612	0.000	0.612
Miscellaneous administration and support costs	0.270	0.612	(0.270)	0.612	0.000	0.612
04 Unallocated	4.081	(1.209)	(2.872)	0.000	0.000	0.000
Total	26.500	0.000	(5.852)	20.648	20.176	0.472

() = negative.

(3) Government of Australia (Grant 0276-VAN) (\$ million)

Category	Original Allocation (1)	Increased during Implementation (2)	Canceled during Implementation (3)	Last Revised Allocation (4=1+2-3)	Amount Disbursed (5)	Undisbursed Balance (6 = 4-5)
01 Trainings	0.295	(0.283)	0.000	0.012	-	0.012
02A Consulting services: implementation advisory international	0.452	0.184	0.000	0.636	0.636	0.000
02B Consulting services: design implementation (international)	2.538	1.017	0.000	3.555	3.547	0.008
02C Consulting services: design implementation (national)	1.203	(1.118)	0.000	0.085	0.082	0.003
02D Consulting (15 Sep 2018 onwards)	0.000	0.104	0.000	0.104	0.042	0.062
03 Miscellaneous administration support	0.012	(0.012)	0.000	0.000	0.000	0.000
05 Equipment	-	0.108	0.000	0.108	0.108	0.000
Total	4.500	0.000	0.000	4.500	4.416	0.085

() = negative.

(4) Global Environment Facility (Grant 0526-VAN) (\$ million)

Category	Original Allocation (1)	Increased during Implementation (2)	Canceled during Implementation (3)	Last Revised Allocation (4=1+2-3)	Amount Disbursed (5)	Undisbursed Balance (6 = 4-5)
Civil works	2.120	0.000	0.000	2.120	2.263	(0.143)
Consulting services	0.750	0.000	0.000	0.750	0.607	0.143
Total	2.870	0.000	0.000	2.870	2.870	0.000

() = negative.

C. Project Data

1. Project cost (\$ million)

Cost	Appraisal Estimate	Actual
Foreign exchange cost	36.0	31.9
Local currency cost	3.1	3.0
Total	39.1	34.9

() = negative.

2. Financing plan (\$ million)

Cost	Appraisal Estimate	Actual
Implementation cost		
Borrower financed	3.1	0.0
ADB financed	5.0	4.4
Other external financing	31.0	27.5
Total implementation cost	39.1	31.9
Interest during construction costs		
Borrower financed	0.00	0.00
ADB financed	0.12	0.03
Other external financing	0.00	0.00
Total interest during construction cost	0.12	0.03

3. Cost breakdown by project component (\$ million)

Component	Appraisal Estimate	Actual
I. Investment Costs		
A. Civil works	27.7	19.8
B. Land acquisition cost	0.2	0.0
C. Trainings, workshops, campaigns	1.5	0.0
D. Consulting services	4.5	11.9
E. Project operational cost	0.2	0.0
F. Equipment	0.0	0.1
G. Taxes and duties	3.1	3.0
II. Physical Contingencies	2.2	0.0
Price Contingencies	2.7	0.0
Total	39.0	34.9

Figures may not add up to total because of rounding off.

4. Project schedule

Item	Appraisal Estimate	Actual
Date of first contract with consultants	Jun 2012	2 Sep 2013
Completion of engineering designs	Dec 2013	31 Dec 2017
Civil works contract		
Date of first contract award	Jun 2013	4 Sep 2015
Date of last contract award	Jun 2014	12 Dec 2019

Item	Appraisal Estimate	Actual
Completion of work	May 2017	
Equipment and supplies		
Dates		
First procurement	...	8 Apr 2016
Last procurement	...	14 Jun 2017
Completion of equipment installation	...	31 Dec 2018
Start of operations		
Completion of tests and commissioning		
Beginning of start-up		

... = data not available.

5. Project performance report ratings

Implementation Period	Single Project Rating
From 1 January 2013 to 31 December 2013	On Track
From 1 January 2014 to 31 December 2014	On Track
From 1 January 2015 to 31 December 2015	Actual Problem
From 1 January 2016 to 31 December 2016	On Track
From 1 January 2017 to 31 December 2017	Potential Problem
From 1 January 2018 to 31 December 2018	Potential Problem

D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members ^a
Fact-finding mission	29 Mar–14 Apr 2011	4	68	a, b, c, d
Consultation mission	16–26 May 2011	5	55	a, c, d, e, f
Consultation mission	11–20 Jul 2011	3	30	a, d, g
Consultation mission	20–24 Feb 2012	1	5	a
Special project administration mission	28–30 Aug 2012	2	6	a, b
Country consultation mission	18–20 Sep 2012	1	3	a
Consultation mission	3–4 Oct 2012	2	4	a, d
Inception mission	11–14 Mar 2013	3	12	d, h, i
Special project administration mission	28–31 Aug 2013	2	6	h, j
Review mission	14–17 Jan 2014	1	4	h
Review mission	7–11 Apr 2014	2	10	h, k
Review mission	9–17 Sep 2014	2	18	d, h
Review mission	3–12 Nov 2014	2	20	d, h
Review mission	20–28 Jan 2015	2	18	d, h
Review mission	18–25 Mar 2015			a
Review mission	11–20 May 2015	1	10	h
Safeguards review	8–12 Jun 2015	1	5	l
Review mission	15–23 July 2015	1	9	h
Review	31 Aug–4 Sep 2015	3	15	d, h, m
Review mission	2–6 Nov 2015	1	5	h
Midterm review	26 Jan–3 Feb 2016	2	18	d, h
Special project administration mission	4–8 Apr 2016	2	10	d, n
Review mission	6–9 Jun 2016	2	8	d, n
Review mission	2–5 Aug 2016	1	4	a
Special project administration mission	7–8 Sep 2016	1	2	a
Review mission	22–25 Nov 2016	2	8	a, g
Review mission	30 Jan–2 Feb 2017	1	4	n
Review mission	27–30 Mar 2017	1	4	n
Special project administration mission	3–4 May 2017	1	2	n
Review mission	28–31 Aug 2017	3	12	h, m, n
Review mission	13–16 Nov 2017	1	4	n
Review mission	15–18 Jan 2018	2	8	h, n
Review mission	23–27 Apr 2018	1	5	n

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members^a
Review mission	16-20 Jul 2018	1	5	n
Review mission	11-13 Sep 2018	1	3	n
Review mission	13-16 Nov 2018	1	5	a, f
Special project administration mission	15-17 Jan 2019	1	3	n
Project completion review				

a = principal natural resources and agriculture economist, b = senior environment specialist, c = project officer (infrastructure), d = development coordination officer, e = director's advisor, f = senior counsel, g = project officer, h = senior urban development specialist, i = project analyst, j = senior procurement specialist, k = principal operations coordination specialist, l = safeguards specialist, m = director, n = principal urban development specialist.

I. PROJECT DESCRIPTION

1. Port Vila, on Efate island in Shefa Province, is Vanuatu's capital, main commercial center, and largest population center, with about 50,000 residents and thousands of tourists arriving each year by air and sea.¹ Port Vila needed adequate urban services to support tourism-led economic growth and the overall development of Shefa Province and Vanuatu as a whole. By 2011, the city expanded beyond its originally defined urban boundaries as a result of rural–urban migration and proliferating informal settlements. The government was not able to provide sufficient urban services and infrastructure, particularly drainage, roads, sanitation, and hygiene facilities and awareness, which impacted economic activity, public health, and the overall quality of life of Port Vila residents and visitors.

2. At project appraisal in 2011, Port Vila's major urban roads were heavily potholed and had deteriorated as a result of deferred maintenance and an inadequate storm water drainage system. Runoff from regular rain events caused flooding and disrupted vehicle and pedestrian traffic, resulting in financial and economic losses. Road debris, silt, grit, garbage, and oil waste washed into the sea, polluting the marine environment. Septic tank sludge from households and business premises was disposed of in open pits at the Bouffa Landfill or illegally dumped near major waterways, exposing the urban population to waterborne diseases. Communities in the central business district lacked safe sanitation facilities. The Port Vila Urban Development Project was proposed to provide sustained urban development of Port Vila.² The expected outcome was that the Government of Vanuatu would provide sustainably improved hygiene conditions and reduce water-based hazards in Port Vila. Originally, the project had five outputs: (i) improved roads and drainage in greater Port Vila; (ii) improved sanitation in greater Port Vila; (iii) improved hygiene for the central business district and settlement communities; (iv) improved capacity by government agencies, community, and user organizations to manage sanitation, roads, and drainage systems effectively and efficiently; and (v) efficient project management services.

II. DESIGN AND IMPLEMENTATION

A. Project Design and Formulation

3. The project supported Vanuatu's Priorities and Action Agenda, 2006–2015 and medium-term action program.³ It was consistent with the Asian Development Bank (ADB) country partnership strategy for Vanuatu, 2010–2014.⁴ The project was designed with a bilateral financing partner, the Australian Agency for International Development (AusAID), now the Department of Foreign Affairs and Trade (DFAT), to achieve a higher level of resource integration. It was aligned with AusAID's Vanuatu program. It addressed the most relevant urban service needs of urban road, water supply, and sanitation to sustain economic growth and tourism development.

4. A change of scope was necessitated by: (i) a fall in project finances because of exchange rate losses;⁵ (ii) underestimation of the project's stormwater runoff and drainage requirements;

¹ Government of Vanuatu. 2016. *2016 Population and Housing Mini Census: Facts and Figures—Shefa Province*. Port Vila.

² ADB. 2011. *Vanuatu: Port Vila Urban Development Project*. Manila.

³ Government of Vanuatu. Ministry of Finance. 2006. *Priorities and Action Agenda 2006–2015*. Port Vila.

⁴ ADB. 2009. *Country Partnership Strategy: Vanuatu, 2010–2014*. Manila.

⁵ The grant from the Government of Australia was in Australian dollars and converted to United States dollars at the prevailing exchange rate when the grant funds were transferred to ADB. The exchange rate of US\$1.00 = A\$1.0000 was adopted during the appraisal, but the actual US\$–A\$ exchange rate kept changing. Similarly, a foreign exchange loss was incurred on the ADB concessional ordinary capital resource loan, denominated in special drawing rights. Total donor funding had fallen to \$29.60 million as of October 2016, compared with \$36.00 million when the project was negotiated.

(iii) increases in the costs of construction and materials because of implementation delays; (iv) increased costs because of roads and drainage redesign; and (v) inclusion of special treatment for road sections with property interfacing (“street-scaping”) at key locations within the project area, such as the central business district.

5. The ADB Board of Directors approved a major change of the project scope in December 2016 to focus on priority needs that could be delivered within the available budget and with a reduced length of roads and drainage.⁶ The project’s outcome was revised to improve road safety, reduce road congestion, minimize urban flooding, and improve health and hygiene conditions in Port Vila. The components under original output 4, “Government agencies have the capacity to manage roads, and drainage systems effectively and efficiently,” was removed from the project scope because the Government of Australia was providing capacity development activities and roads operation and maintenance (O&M) funding.⁷ After a detailed technical review, the construction of a biogas plant in output 2 was replaced by a more technically viable fecal sludge treatment system. The chosen modality was appropriate.

B. Project Outputs

6. After the major change of project scope was approved by the Board, the design and monitoring framework (DMF) was also revised. Appendix 1 details project achievements under the revised DMF.

1. Output 1: Road and Drainage Network in Port Vila Improved

7. **Indicator 1a: Road rehabilitation.** The revised target was 13.3 kilometers (km). The project rehabilitated 12.1 km of roads with road drainage by November 2019. The slight underachievement resulted from the detailed design optimization and higher unit cost of higher quality roads requested by the Government of Vanuatu. The rehabilitation provided climate resilient pavements including: (i) 6.5 km of asphaltic concrete for the Lini and Kumul Highways, which have high traffic volumes and heavy vehicular loads; (ii) 5.2 km of double seal bituminous treatment to roads in the central business district and other collector roads within the Port Vila municipal boundary; and (iii) 0.4 km of concrete pavement for George Kalsakau Drive in the central business district to provide coastal protection and reduce sea inundation during severe cyclones. In addition, the project constructed 45 bus bays and 6.5 km of two-meter wide footpaths which significantly improved vehicular and pedestrian traffic flow and reduced traffic congestion on the Lini and Kumul Highways.

8. **Indicator 1b: Drainage construction or rehabilitation.** The revised target was 12.5 km. The project constructed or rehabilitated 6.4 km of drainage comprising (i) 4.9 km of new pipe drainage, (ii) 0.3 km of grass-lined open drains, and (iii) rehabilitation of 1.2 km of existing pipe drainage. The project also constructed an additional 15.4 km of roadside drainage (curbs and gutters), exceeding the drainage targets.

9. In the revised scope, the output was doubled with cost savings. It was scheduled to improve drainage in three flood-prone urban areas by building a 12.5 km long drainage system. The project took an innovative design approach, including adopting nature-based stormwater

⁶ ADB. 2016. *Major Change in Project: Port Vila Urban Development Project*. Manila.

⁷ In Variation Order No. 7, dated 13 February 2017, capacity development was removed from the design, supervision, and capacity development (DSCD) consultant’s contract. Government of Australia. 2012. *Vanuatu Roads for Development (R4D) Program (designed and approved as the Vanuatu Transport Sector Support Program Phase II)*. Canberra.

disposal methods (infiltration basins), which reduced the required drainage pipe length to 6.4 km and substantially reduced cost. At the end of construction, the project improved the drainage systems in six flood-prone urban areas.

2. Output 2: The Sanitation System in Greater Port Vila Improved

10. The project achieved the revised target to safely treat and dispose of all domestic and commercial septic fecal sludge in Port Vila. A fecal sludge treatment facility with a capacity of 28 cubic meters per day was constructed and commissioned in August 2017. It was initially operated by the civil works contractor for 8 months to prove plant functionality and to train the Port Vila Municipal Council (PVMC) personnel in plant O&M. During the first 6 months of operations, 1,160 cubic meters of fecal sludge was delivered to the facility. The PVMC took over the management of the facility in May 2018. The facility now treats all fecal sludge collected in Port Vila and its surroundings. Inspections in 2019 showed that the facility was well maintained and operating satisfactorily, with the Government of Vanuatu providing adequate O&M.

3. Output 3: Central Area and Settlement Communities Hygiene Facilities Improved

11. **Indicator 3a: Four new multipurpose community sanitation and hygiene facilities (CSF) built for two informal settlements.** The project delivered 13 new CSFs at six informal settlements, including: (i) six new CSFs, built by contractors and completed by October 2017, serving three communities of Mele-Waisisi and one community each in Blacksands, Seaside Paama and Seaside Futuna; and (ii) seven new CSFs, built by the communities with the designs, materials, and technical expertise provided by the project, that were completed in 2018 and serving the communities of Ohlen Nabanga (one) and Tokyo Buninga (six).

12. Each CSF contains flush toilets, showers, and clothes washing facilities, with separate toilet and shower facilities for men and women. All facilities, except for those at Tokyo Buninga, also provide facilities for people with disabilities. All the new CSFs are managed by community sanitation committees, mostly composed of women, who collect user fees to cover O&M costs.

13. **Indicator 3b: Four existing multipurpose community sanitation and hygiene facilities refurbished at three informal settlements.** The project refurbished five existing sanitation facilities in four informal communities—one each in Seaside Paama, Seaside Futuna, and Seaside Tongoa, and two in Tokyo Buninga. All refurbishments were completed in October 2017, except for Tokyo Buninga, completed in December 2018. The refurbished CSFs are managed by community sanitation committees, mostly composed of women, who collect user fees to cover O&M costs.

14. **Indicator 3c: Three new public toilet facilities built.** Only two new public sanitation facilities, including toilets and showers in Fatumaru Bay and Independence Park, were completed in July 2018. The remaining toilet was not built because of lack of funds. User fees for the two facilities are collected to cover O&M costs.

15. **Indicator 3d: Four existing public toilet facilities refurbished.** The project refurbished only two public toilets at the Port Vila Hospital Maternity Wing and another one at Port Vila Hospital Eye and Ante-natal Clinic, and was not able to refurbish the remaining two because of lack of funds. This component was handed over to the hospital for operation in July 2018. The facilities are operating well, including government funding of O&M.

4. **Output 4: Government agencies, communities and user groups have the capacity to manage sanitation, roads, and drainage systems effectively and efficiently**

16. **Indicator 4a: Capacities of at least 50 government staff improved.** Capacity development for road and drainage system maintenance was delivered through road maintenance capacity building provided by DFAT through the Roads for Development (R4D) Program instead of the project. The R4D road maintenance capacity development delivered training to more than 100 staff from the Public Works Department, a division of the Ministry of Infrastructure and Public Utilities (MIPU), in Vanuatu. A total of 32 workers, including three women in MIPU's Shefa Division, which is responsible for the maintenance of roads in Port Vila, have received training related to road and drainage maintenance.

17. The civil works contractor delivered capacity development for PVMC personnel for O&M of the fecal sludge treatment facility over a period of 8 months. Six personnel were trained, including two women, who are now operating the facility successfully.

18. **Indicator 4b: 100% annual maintenance of drainage facilities.** At the time of project completion report preparation, it was too early to conclude if drainage maintenance is following the annual drainage schedule. However, MIPU has established drainage maintenance schedules for the entire Port Vila drainage network and is implementing the schedule.

19. Further, MIPU has adopted the nature-based stormwater treatment and disposal approach that was developed under the project and has constructed similar systems at Seven Stars (a residential area north of Port Vila's central business area). No flooding at Seven Stars has been reported since the system was installed.

20. **Indicator 4c: 100% compliance of community sanitation facilities with sanitation standards.** At the time of the project completion report preparation, 16 out of the 18 CSFs delivered by the project were operating well and fully maintained. Problems in collecting facility usage fees in the Blacksans and Seaside Futuna communities, because of low willingness to pay, have delayed payment of water bills, resulting in facility shutdowns on a number of occasions and for several weeks at a time.

21. **Indicator 4d: 100% women trained for operation and maintenance of community sanitation facilities.** Capacity development for women to undertake O&M of the CSFs was delivered through the project's water, sanitation, and hygiene (WASH) awareness and education program. Training was delivered to 5,821 females (2,697 women and 3,124 girls) and 4,875 males (1,674 men and 3,201 boys). Women's participation in the training (54%) was higher than men's.

5. **Output 5: Efficient Project Management and Services Provided**

22. The project envisaged that its key activities would be implemented on time and within budget. However, project completion was extended once, adding two years to the implementation period, because: (i) signing of the project's loan and grant agreements took place 12 months after project approval; (ii) a four-month delay in the recruitment and mobilization of the design, supervision, and capacity development (DSCD) consultant; and (iii) an 8-month delay in finalizing the road pavement rehabilitation and stormwater drainage designs.

C. Project Costs and Financing

23. At appraisal, the project cost was estimated at \$39.1 million, including taxes and duties. On 13 December 2011, ADB approved a loan of SDR3,174,000 (\$5 million equivalent then) from ADB's concessional ordinary capital resources, previously known as ADB Special Funds resources, as well as the administration of grants from the Government of Australia totaling \$31 million. The ADB-administered Government of Australia grant consisted of: (i) a grant of \$4.5 million from the Australia Channel Financing Agreement; and (ii) a project-specific grant of A\$26.5 million (\$26 million equivalent in 2011). The Government of Vanuatu agreed to provide counterpart financing of \$3.1 million for exemptions of taxes and duties, as well as financing land acquisition through annual budget allocations. The financing agreements were signed on 12 December 2012 and became effective on 13 February 2013.

24. A project additional financing was processed in 2015 to access the Global Environment Facility (GEF) Least Developed Countries Fund. The GEF approved on 8 October 2015 a grant of \$2.87 million to be administered by ADB. The GEF grant comprised the following provisions: (i) \$1.37 million for roads and drainage infrastructure; (ii) \$1.00 million to implement climate resilient, sustainable drainage in two urban catchments; and (iii) \$0.50 million to finance technical assistance and capacity development for planning and constructing climate resilient roads and drainage systems.

25. At closing, the actual cost was \$31.9 million, including the GEF grant but excluding government contribution. The difference between the project appraisal estimate and actual cost resulted from the change of the scope (paras. 4–5). At financial closing, the undisbursed balance, totaling \$0.56 million, was canceled. The project costs and financing plans at appraisal and completion are in Appendixes 2 and 3.

D. Disbursements

26. The loan and grants were disbursed using direct payment, reimbursement and advance account-procedures in accordance with ADB's *Loan Disbursement Handbook* (2010, as amended from time to time). Most disbursements were made by direct payments. Because of delays in the initial stage of project implementation, disbursements in 2012–2015 were not significant, totaling 15% of the project cost (para. 27). The disbursement rate increased from 2016 after the contracts for major civil works were awarded. Overall, project funds were disbursed over a 60-month period. Detailed project disbursements and contract awards are in Appendixes 4–5.

E. Project Schedule

27. At appraisal the project was anticipated to close on 30 November 2017. A revised closing date of 31 December 2018 was approved in May 2016. The project was completed on 31 December 2018 and financially closed on 24 December 2019, because the government requested a 6-month extension for financial closure to settle several civil works contractual issues.

28. Project implementation was delayed for 2 years because of several factors: (i) postponed signing of project loan and grant agreements (12 months) because of delayed compliance by the Government of Vanuatu in reporting project loan details to Parliament and delayed signing of the cofinancing agreement by AusAID; (ii) delayed recruitment (4 months) of the DSCD consultant for project implementation because of the comparatively large size of the contract; (iii) the unrealistic personnel schedule of DSCD consultant and the replacement of some staff because of poor performance during the inception stage (6 months); (iv) delayed finalization of stormwater drainage design because of lack of experience and understanding of the topography and soils of

Port Vila (12 months); (v) delays in tendering and bid issuance, bid evaluation, and contract awards because of lack of capacity in the implementing agencies and insufficient oversight by the DSCD consultant; and (vi) delays because of disasters, such as Cyclone Pam in March 2015, resulting in extensive damage and need for the government to refocus on disaster response and recovery efforts. A chronology of main events during project implementation is in Appendix 6.

F. Implementation Arrangements

29. The executing agency was the Ministry of Finance and Economic Management (MFEM) and the implementing agencies were the MIPU and the Department of Environmental Protection and Conservation (DEPC). The Vanuatu project management unit (PMU), which reports to the Office of the Prime Minister, managed the project on behalf of the implementing agencies. Due to its mandate as a regulator, DEPC's role included providing guidance, advice, and monitoring of environmental issues rather than implementation. The arrangement was functional during the implementation period and did not require any major changes.

30. The PMU was adequately staffed to manage the project. It was supported by the DSCD for more than 5 years. Eleven individual consultants were recruited through the project to provide support to the PMU. Starting from 2013, the PMU began managing other infrastructure projects financed by ADB and other donors. As a result, PMU's capacity was stretched, and it subsequently became less focused on the project. Review missions discussed this issue and ADB requested the government to recruit additional staff. However, because of human resource and budget constraints, the issue remained largely unresolved through project completion. ADB provided ad hoc support through technical assistance financing intermittent inputs, such as an international environment specialist to assist the two in-house safeguards officers. To obtain high-profile attention and strengthen project coordination countrywide, the PMU was placed under the Office of the Prime Minister rather than under either implementing agency. Because of the complicated reporting lines and a lack of capacity, MIPU did not review designs and manage contracts as initially envisioned. To ensure construction quality, ADB recruited individual consultants to support MIPU to enhance project design review, quality control, and contract oversight. Project ownership was strengthened by the appointment of a new MIPU director who was familiar with ADB and the PMU and understood the importance of O&M for project sustainability.

G. Technical Assistance

31. The project preparatory technical assistance (TA) was approved in 2009 for \$2.21 million (including supplementary financing), of which \$0.7 million was sourced from the Technical Assistance Special Fund and \$1.5 million cofinancing from the Government of Australia (administered by ADB). The project preparatory TA was effective in preparing the ensuing project. However, the project preparatory TA output was deficient in a number of respects which impacted the project, including underestimating: (i) stormwater drainage investment requirements; (ii) easement negotiation and need for land access; and (iii) organizational complexities.

H. Consultant Recruitment and Procurement

32. Consultant recruitment was undertaken in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). An international consulting firm was selected for DSCD under quality- and cost-based selection to provide services for project design (including updating safeguards due diligence), supervising civil works, and managing training and public awareness campaigns. The scope and amount of the contract increased by 70% from the initial contract, largely because of the prolonged implementation period.

33. At appraisal, it was proposed to contract 587 person-months of international consulting services for engineering and contract management services, including 108 person-months of international specialist inputs and 479 person-months of national specialist inputs. It was also proposed for 14 person-months of inputs to be recruited through individual consultant selection. At project completion, the actual number of person-months of international consulting services was 712, comprising 322 person-months of international specialist inputs and 390 person-months of national specialist inputs. The DSCD total contract payment was \$10.14 million, one-third of the total project cost, with 10 variation orders processed for the DSCD contract. The project recruited 11 individual international consultants for 111 person-months, with a total cost of \$1.54 million. In addition, four international consultants were recruited using ADB technical assistance funds to further support MIPU and the PMU, with inputs of 36 person-months and a cost of \$0.69 million.⁸

34. Civil works, goods, and services were procured in a timely manner in accordance with ADB's Procurement Guidelines (2007, as amended from time to time). During project implementation, the following procurement and selection methods were used: (i) international competitive bidding and shopping contracts for civil works and goods (equipment and materials); and (ii) quality- and cost-based selection and individual consultant selection for consulting services. The project awarded eight civil works contracts, comprising six international competitive bidding and two shopping contracts, and three goods contracts using shopping, all of which were successfully completed. The civil works international competitive bidding contracts totaled \$19.64 million and the consulting services contract totaled \$10.14 million. Procurement arrangements under the overall project were satisfactory. The completion dates of several civil works contracts were extended because of delayed land access permission and geology reassessment before the construction started, which required time for design changes.

I. Gender Equity

35. The project was classified as *effective gender mainstreaming*. The project preparatory TA consultant developed a gender action plan (GAP) to address the key gender issues at the design stage. After the change in scope, the GAP was updated in December 2016 to focus on gender-specific activities and quantitative targets included in the revised outputs. The project successfully upgraded roads and drainage in Port Vila under output 1 and improved septage service for the whole city under output 2, both benefiting the urban population of 50,000, of which 50% are women. The project renovated and built 18 CSFs under output 3, bringing improved sanitation services to almost 1,700 people in Port Vila, of whom 50% are women, who use the facilities more. The provision of basic sanitation service had a direct positive impact on women and children by reducing the incidence and impacts of waterborne diseases. The GAP enhanced benefits to women through training and the WASH awareness-raising program. Nongovernment organizations were engaged to raise community awareness of health and hygiene issues and this was successful. As a result of the project, women now play an important role in managing the CSFs and educating their families and communities about sanitation practices.

36. The project met 63% of quantitative targets (5/8) and 65% of the activities (19/29) outlined in the GAP, therefore GAP implementation is rated unsuccessful in delivering intended gender equality results because the successful activities and targets did not meet the required 80% threshold. There were particular challenges on the contractors meeting gender requirements such as equal pay for equal work, which was outside the project's control, because of (i) compliance with Vanuatu labor and workplace laws, which are silent on this issue and (ii) the

⁸ Various ADB technical assistance funds and the staff consultant fund were used.

DSCD consultant's lack of reporting against gender targets. This highlighted the need for careful assessment, including the importance of cultural norms, of gender targets during the project design phase and monitoring throughout project implementation (Appendix 7).

J. Safeguards

37. The project was classified as Category B for environment and involuntary resettlement and Category C for indigenous peoples.

38. **Environment.** The initial environmental examination (IEE), including an environmental management plan, was prepared by the Government of Vanuatu under the project preparatory TA.⁹ During project implementation, the IEE was divided into separate subproject documents and updated based on the detailed design. The updated IEEs were submitted to the DEPC for clearance under the country system and the DEPC issued environmental permits (with conditions) for the subprojects. The updated IEE and environmental permit were included in the bid and contract documents. Upon award of the contracts for each urban services package, the contractor prepared and submitted their construction environmental management plan to the PMU and DSCD consultant for review and approval. Overall, there were no measurable significant negative impacts on people or the environment and the mitigation measures identified were implemented and deemed effective in avoiding or reducing impacts. The overall process and activities were documented in the semiannual safeguards monitoring reports that were prepared during the project and disclosed on ADB's website. Inspections and audits identified minor non-compliances with the approved Site-Specific Environmental Management Plan, including dust, noise, access, and traffic management issues (particularly for the George Kalsikau Drive subproject in the central business district). The non-compliances were brought to the attention of the engineer, who instructed the contractor to resolve the matter. The process of corrective action request, action taken, and close-out were recorded in the semiannual safeguards monitoring reports.

39. To date, the project has resulted in environmental benefits, including greatly easing road flooding and reducing road hazards because of flooding and poor road conditions.¹⁰ Localized environmental conditions responded positively to improved sanitation facilities and practices and have improved in the particular localities.¹¹ There has been clear improvement in the environment for tourism and investment. However, the water quality in the coastal environment of Mele Bay did not improve significantly because of pollutants legally and illegally discharged from buildings, which is beyond the project's purview or control.¹²

40. **Involuntary resettlement.** Two resettlement plans and two due diligence reports were prepared and implemented. Land for the Bouffa sludge treatment plant subproject was owned by the PVMC, and 40 non-titled land users were affected by loss of access to that site; an alternative site (also municipal land) was provided to them for continued informal use as gardens. The roads and drainage subproject required about 2,700 square meters of leased and private land; this included agreeing with nine corporate and individual leaseholders to create a 3–5 meter wide drainage easement on their land (to address the increasingly serious flooding). 177 public access areas were partly built across smaller leasehold lands, but unlike the drainage easement, leaseholders were not required to change the conditions of their lease. The public sanitation

⁹ ADB. [Vanuatu: Port Vila Urban Development Project](#). Initial Environmental Examination (accessible from the list of linked documents in Appendix 2. Manila).

¹⁰ Site visits and comments from residents of Port Vila.

¹¹ ADB. 2016. *Port Vila Urban Development Project: Community Sanitation and Hygiene—End-of-project evaluation*. Consultant's report. Port Vila (Grant No. 0275/0276-VAN).

¹² Personal comment and summary from staff of the Ministry of Lands and Water indicated it was related to weak enforcement of building codes and environmental regulations.

facility and CSF subprojects used government- or municipality-owned land and did not affect any individual land users. As a result, the project did not cause landlessness, loss of homes, and/or loss of major income sources. Although there was no physical displacement, it took the project a long time to negotiate easements and land access because of a larger number of landowners, lessees, and users than anticipated in the project design. There are no outstanding claims or grievances in relation to easements, land access, and land use.

41. The PMU implemented a grievance redress mechanism for the complaints that the project received during the implementation. The grievance redress mechanism included representatives from MIPU, the contractor(s), the DSCD consultant, and community complainants. Grievances were minor, related to construction matters, addressed in a timely manner, resolved satisfactorily, and were reported in the semiannual safeguards monitoring reports. Consultations and disclosure processes, in line with the project's communication and consultation plan, were followed.

K. Monitoring and Reporting

42. Project supervision included regular monitoring missions by ADB and the Government of Australia. In addition to 12 consultation, inception, and special project administration missions, ADB conducted more than 30 missions and prepared detailed aides memoire or memorandums of understanding at the end of each mission. The ADB office in Vanuatu was closely engaged in this project and joined steering committee meetings as an observer. Project covenants have mostly been complied with. Although the Government of Australia provided O&M financing for some components, the Government of Vanuatu had not ensured funding for O&M of other infrastructure and facilities constructed under the project. One covenant was revised with ADB's agreement: the Government of Vanuatu would not be required to open project advance accounts for each financing resource. Instead, one advance account was opened for G0276-VAN. The status of compliance with the covenants in the grant and project agreements are in Appendix 8.

43. An ADB-funded consultancy established a detailed project monitoring system.¹³ This included some preliminary training for capacity building. The DMF was complex, with some performance indicators that were beyond the capacities of the Government of Vanuatu. For example, the DMF called for commuter and traffic surveys to help assess project benefits, which was conducted once in 2014 in the early stage of implementation, but not at project completion because of lack of capacity. Therefore, the economic cost and benefit analysis of the road component could not be recalculated with updated data.

44. Before 2017, the financial management arrangements of the borrower, the executing agency, and the implementing agency were adequate. Completion of accounts and audits lapsed, with 2017 accounts audited but not submitted to ADB. The 2018 accounts have been prepared but are pending audit and submission to ADB.

III. EVALUATION OF PERFORMANCE

A. Relevance

45. The project is rated *relevant*. At appraisal and at completion, the project's outcomes were aligned with the country's development priorities, ADB's country strategy, and cofinanciers' country priorities. The original project design was based on some underestimations which, together with the unexpected exchange rate fluctuations, led to a shortfall of funds. The project

¹³ Government of Vanuatu. 2017. *Port Vila Urban Development Project. Project Monitoring and Evaluation Framework*. Port Vila. The first draft report was prepared in November 2014.

scope was adjusted to reflect the priority needs within the available budget. After the major change of scope, the project remained relevant by addressing Port Vila's most urgent basic urban needs of roads, sanitation, and CSF services. The project modality was also suitable. The project relevance was strengthened by complementary physical works and capacity development delivered by the other development partners.¹⁴

B. Effectiveness

46. Overall, the project is rated as *less than effective*. The project is assessed as having achieved three of the four outcome indicators; one of the indicators could not be assessed.

47. **Outcome Indicator 1: Government budget commitment of \$400,000 per year maintained for maintenance works.** This indicator was not achieved. The Government of Vanuatu provided Vt65,027,892 (\$570,000 equivalent) in the 2019 national budget for development and maintenance of urban roads in Shefa Province, but the data was unavailable for the actual expenditure on road O&M.¹⁵

48. **Outcome Indicator 2: By 2019, 75% of households within the urban and peri-urban areas of Port Vila have access to improved sanitation.** This indicator was achieved, indeed it was significantly exceeded. The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation, and Hygiene estimated that by end of 2016, 92% of Vanuatu's urban population had access to improved sanitation.¹⁶ In Port Vila, 10,270 households (94%) have access to improved sanitation.

49. **Outcome Indicator 3: the incidence of diarrhea in Port Vila reduced by half from 892 reported cases per 1,000 people (WHO data).** This was achieved, and significantly exceeded. According to Ministry of Health 2018 statistics data, the number of reported cases of mild, moderate, and acute diarrhea in Efate (including Port Vila) was 8,000 cases, equivalent to 83 reported cases per 1,000 people, at nearly 90% lower than the target set.

50. **Outcome Indicator 4: At least 20% decrease in travel time (2010 baseline of 2 minutes per km), and 0.5% decrease in vehicle operations costs (2010 baseline of \$0.20 per km).** This indicator cannot be assessed because no commuter or traffic surveys were undertaken since the project implementation began in 2014. This highlighted the importance of identifying carefully designed, validated, and meaningful DMF indicators during the project design stage.

51. Output indicators were mainly achieved. The physical infrastructure outputs (outputs 1–3) were substantially achieved. Government staff training was conducted by a separate AusAID project instead of the project (outputs 4a–4b). Sanitation standards were fully complied with (output 4c). The training of women in CSF management (output 4d) was conducted as scheduled and achieved, with 54% women participants. The project was implemented with a reduced scope and smaller budget than originally envisaged because of foreign exchange losses and cost underestimation (output 5). GAP implementation is rated *unsuccessful*. Safeguards were implemented successfully.

¹⁴ Complementary development partner projects include the DFAT Roads for Development Project and the Government of New Zealand-funded Vanuatu Tourism Infrastructure Project. Project Completion Report. December 2017. Prepared for the Ministry of Infrastructure and Public Utilities, Government of Vanuatu.

¹⁵ Government of Vanuatu. 2019. *Budget 2019: Volume 2*. Port Vila.

¹⁶ WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene database. <https://washdata.org/data/household#/vut>.

C. Efficiency

52. Based solely on an assessment of process efficiency, the project is rated as *efficient*. Although loan effectiveness was delayed by 14 months, the project was completed within 5 years by December 2018 and within budget. The project's estimated economic internal rate of return was 23.4% at approval and 11.0% after the major change of scope, but lack of data precludes a full reevaluation for the project completion report. An indicative reevaluation at completion is in Appendix 9.

D. Sustainability

53. Overall, the project is rated *less than likely sustainable*. The project was not a revenue-generating project. There is no medium-term planning of public finances; the Government of Vanuatu has repeatedly attempted and failed to introduce a medium-term expenditure framework. The government has often inadequately budgeted O&M costs for roads, drainage, and septage operations, along with all other assets. Project sustainability requires the government to guarantee an adequate annual O&M budget combined with a strong public sector performance, including qualified leadership and management. On the other hand, the Port Vila communities that received the 18 CSFs are mostly operating the facilities well, including raising revenue to pay for the day to day operation. This CSF component will be likely sustainable.

54. The project has beneficial environmental and social impacts through its stormwater and road drainage improvements, innovative stormwater disposal solutions, and the CSF, water, and sanitation components. Overall, the project is less than likely to be sustainable, largely because of inadequate measures and resources to adopt effective maintenance regimes. Even though the government indicated an adequate O&M budget for 2019, it is too early to guarantee that the road and drainage system O&M practices are efficient and sustainable in the long run.

E. Development Impact

55. The project is rated as *satisfactory* because it substantially achieved the targeted development impact. The DMF impact was sustainable development of Port Vila. With the collaborative efforts of ADB and the cofinanciers—the Government of Australia and the GEF—the project provided essential urban services and facilities, including upgrading roads to improve transportation, constructing and rehabilitating drainage systems to reduce flooding risk, establishing the fecal sludge treatment plant to collect and treat all fecal sludge, and constructing new and upgrading existing CSFs to improve community sanitation services and health. It is clear that the project has led to positive economic, environmental, social, and poverty reduction impact. While the project delivered capacity development, this has not yet achieved a level of institutional impact that could make the project more sustainable. The contribution of the project to the ADB results framework is in Appendix 10.

F. Performance of the Borrower and the Executing Agency

56. The performance of the borrower, the executing agency, and the PMU is rated *satisfactory*. The performance of the government covers the roles of MFEM, MIPU, and PMU. Other government departments also contributed intermittently. In general, the borrower provided counterpart staff and support as defined in the financing agreement, and MFEM fulfilled its overall responsibility during project implementation. PMU was fully staffed and kept a clear record of the project accounts. It managed project implementation and safeguard requirements and implemented the project's grievance redress mechanism. PMU's responsibility grew into

managing all Vanuatu's major construction projects without additional staff or resources, stretching its capacity so thin that it could not provide sufficient leadership and guidance to the DSCD work. The government did not submit a project completion report to ADB. Early in implementation, MIPU did not show strong ownership because of lack of capacity, but this improved with the new director in 2018. After the project infrastructure components were completed and handed to MIPU, the ownership was strengthened with more effort on the O&M responsibility.

G. Performance of Cofinanciers

57. The performance of the cofinanciers is rated *satisfactory*. The Government of Australia provided significant grant cofinancing for road construction works, consulting services, and training. While this helped expand the initial project scope (from drainage and sanitation), it also added complexity. The signing of the cofinancing agreement was postponed because of the general elections in Vanuatu, which contributed to project delays. The significant exchange rate movements reduced available financing and necessitated the major change in scope of the project. Apart from this, AusAID (later known as DFAT) performed well, providing adequate attention and input during project review missions and closely monitoring difficulties of project implementation. When DFAT called for ADB to increase project supervision, ADB responded positively. The DFAT R4D project absorbed the capacity development component of the project and conducted this successfully. The performance of the GEF was satisfactory. It provided cofinancing as a timely source of additional financing. The GEF contribution primarily focused on the drainage system works and facilitated the nature-based and innovative approaches to reduce the flooding risk in Port Vila. The smooth working relationships between ADB and the two cofinanciers succeeded in implementing this challenging project within five years. ADB's \$5 million loan leveraged the total grant cofinancing of about \$27 million and brought with it significant improvement to Port Vila.

H. Performance of the Asian Development Bank

58. ADB's performance is rated *satisfactory*. The project preparation and design had several deficiencies. The project was designed to cover a wide range of priority urban needs, but this became an unrealistic target because of cost underestimations and insufficient understanding of local capacity and natural conditions. The DMF design was not suitable: some outcome indicators could not be validated while others were unrealistic. For indicator 1, the government O&M budget baseline could not be validated. For indicator 2, household access to improved sanitation was set in all urban and peri-urban areas, which was impractical because it was not possible to improve access beyond the project area. For indicator 3, the "incidence of diarrhea" is not a reliable project indicator because (i) it relates equally to diet, fresh food preservation, and hygiene conditions, and (ii) data is not readily available from health authorities and it was very difficult to obtain. For indicator 4, a 20% decrease in travel time was not an appropriate indicator for an urban services project because the project is likely to encourage transportation by cars; average journey time would be a more appropriate indicator.¹⁷ The project could not achieve the indicators as established in the DMF, resulting in a rating of *less than effective*. In addition, some indicators in the GAP, such as equal pay for equal work, were too ambitious for the project because of social and cultural norms.

59. ADB conducted more than 30 missions to review and monitor implementation. ADB's extended mission to Vanuatu also helped project portfolio management and mission visits. ADB

¹⁷ The travel time is the time required to travel fixed distance by cars. The journey time is the time required to travel between locations by different means such as cars, buses, bikes, or on foot.

maintained the same project officer throughout the seven year of project implementation as well as engagement of the same country office staff allowing for a depth of understanding of the project, its history, and its stakeholders. ADB responded in a positive manner to the shortfall of project funds by processing a major change in scope and securing additional financing from the GEF. ADB also responded to the revealed lack of capacity in government departments involved in project implementation by financing additional support (individual consultants) using ADB funds. ADB was able to leverage two cofinancing partners to implement the project, which significantly improved roads, drainage, sanitation services, and CSF in Port Vila.

60. The DSCD performance was *less than satisfactory* because of the unrealistic personnel schedule, including several substitutions of key roles to replace underqualified or inexperienced consultants fielded, high turnover of personnel, and poor overall performance, which delayed project implementation. The DSCD performance also caused the delay of the major civil works contract because of insufficient field investigations and delayed completion of detailed design. The performance of the individual consultants was *satisfactory*.

I. Overall Assessment

61. Overall, the project is assessed *less than successful*. Although the project is rated as *relevant* and *efficient*, it was *less than effective* and *less than likely sustainable*. The GAP implementation is rated as *less than satisfactory*. The overall ratings are shown in the table.

Overall Ratings	
Criteria	Rating
Relevance	Relevant
Effectiveness	Less than effective
Efficiency	Efficient
Sustainability	Less than likely sustainable
Overall Assessment	Less than Successful
Development impact	Satisfactory
Borrower and executing agency	Satisfactory
Performance of ADB	Satisfactory

ADB = Asian Development Bank.

Source: Asian Development Bank.

IV. ISSUES, LESSONS, AND RECOMMENDATIONS

A. Issues and Lessons

62. **Project preparation.** The project suffered from unrealistic project targets, ambitious and inappropriate GAP measures and targets, and impractical DMF indicators. Project preparation should include a thorough understanding of the project local capacity and natural conditions to enable the formulation of realistic cost estimates and DMF indicators. It is always essential to have solid project preparation and sound project design to facilitate implementation and eventual completion evaluation. Although ADB and the Government of Vanuatu both recognized the poor DSCD performance and discussed replacement at several points, because of the high opportunity cost of the DSCD contract termination and replacement, it was not replaced; instead individual consultants were replaced and arrangements reached to adjust billing to reflect poor firm performance. Such performance further constrained project design, management, institutional development, and implementation. Because of the low capacity of executing and implementing agencies in many Pacific island countries, they may require additional support by engaging

individual consultants to monitor the consulting firm's performance and oversee the technical design and implementation.

63. **Cofinancing.** The project successfully attracted two cofinancing partners – DFAT and the GEF – which enhanced the project and helped maximize the project scope and benefits. However, the delay in signing the cofinancing agreement with DFAT and the impact of foreign exchange losses were not predicted and led to a 2-year delay of loan effectiveness and subsequently necessitated a major change of scope. Cofinancing should be sought with development partners that can add value to a specific project rather than purely as an alternative or last-minute financing source. Development partners have their own agendas and approaches and to ensure these do not skew project delivery or performance, the benefits of bringing in cofinancing partners must be carefully assessed. This can be better managed by improved communication among donors and flexible loan effectiveness conditions.

64. **Sustainable operations and maintenance budgets.** The project might not be sustainable in the long term because of insufficient annual O&M budgets (see paragraph 53). This is recognized as a recurrent constraint in many Pacific island countries that needs to be addressed by central government agencies with the support of all development partners. The CSF component was more successful because of careful selection, extensive community consultations and preparation, and involvement of the users in O&M and collection of fees to finance O&M.

65. **Implementation of gender actions.** GAP implementation is rated unsuccessful. The challenges in achieving the gender targets and implementing activities underlines the need for: (i) better gender analysis and culturally appropriate target-setting during project preparation; (ii) continuous monitoring of GAP implementation and addressing challenges to meet GAP targets during project implementation; and (iii) improved understanding of GAP requirements by all project stakeholders.

66. **Transferring knowledge and skills.** Not all project consultants possessed the characteristics and capabilities required to transfer knowledge and skills to local counterparts, including crucial leadership and management skills. DSCD leadership did not emphasize the importance of, or need for, mentoring and skills transfer and therefore this was not deemed as a significant requirement of team members. These abilities are, however, essential. Effective management is most difficult in the social context of small, isolated, and closely-knit island societies and this constrains public sector performance, which is essential to the success of a complex project such as this.

67. In future projects, fielding individual consultants rather than a firm for key roles can be considered to ensure the “right fit” of consultants working closely with government staff and where there is an expectation of skills transfer. Terms of reference need to be clear on the personal characteristics and qualities required in addition to expertise and qualifications. Further, terms of reference for each consultant should include clear tasks and efforts for delivering capacity development, such as: “50% of consultant’s time and inputs will be put to capacity development, on-the-job training, mentoring and institutional strengthening. The consultant will be expected to keep a record of such activities and tasks to demonstrate this at the end of the assignment.” The covenants should be maintained for a further six months, particularly with respect to financial statements (Schedule IV Para 4.02).

B. Recommendations

68. **Project preparation.** The project, along with other ongoing ADB funded projects, was the subject of a country portfolio review mission in April 2018.¹⁸

69. Based on the lessons learned from the project and the mission outputs, individual actions recommended to improve project preparation and readiness that apply to future projects include: (i) ensure continuous monitoring and that opportunities to revise overly ambitious indicators in DMF and/or GAP, such as midterm review, are taken up; (ii) enable time and resources for feasibility study and detailed design by setting up a project readiness facility for future projects; (iii) ensure design quality by mainstreaming independent peer review of design; and (iv) adopt optimal approaches for projects by exploring alternative or innovative approaches and delivery modalities including design-build and design-build-operate.

70. **Operations and maintenance sustainability.** Individual actions recommended to improve resilience and sustainability include (i) enabling O&M by (a) developing sector plans in which O&M is an integral part, (b) ensuring that project design includes concrete and effective measures to ensure O&M is feasible, can be financed and can be operationalized on a sustained bases, and (c) ensuring project design considers lifetime costs, not just construction costs; and (ii) promote resilience by (a) considering durability and climate change adaptations in project design, not just least cost, (b) using advanced and modern technology and innovation, and (c) holistically integrating a “building back better” approach into overall project and components design, including O&M requirements.

71. **Further action or follow-up.** ADB continues to follow up on outstanding financial accounts with the government. No further actions are required to complete the project, support its initial operation, or to achieve project benefits. ADB is currently supporting the preparation of a second urban development project in Port Vila and another urban services improvement project in Luganville.¹⁹ It is important that the design and development of these projects respond to and are informed by the lessons learned from this project to ensure sustainability of outcomes. While some capacity development has been provided to MIPU, the PMU, and other implementing agencies through this and other projects, these efforts must be seen as crucial first steps in a longer-term institutional strengthening partnership between the government and ADB.²⁰ Because building DMC capacity is a development objective in and of itself, subsequent projects and supporting TA need to be designed with broader institutional strengthening as a goal and output, rather than with a narrow focus on project delivery and management. Each project and program should build upon, and leverage off of, the preceding efforts. In this way ADB can enhance its contribution to sustainable development in Vanuatu and the Pacific.

72. **Timing of the project performance evaluation report.** The project performance evaluation report should allow 12 months for the final covenants to be complied with.

¹⁸ Government of the Republic of Vanuatu, Asian Development Bank 2018. *Vanuatu Country Portfolio Review Mission 26–27 April 2018 Aide-Memoire*. Port Vila.

¹⁹ ADB 2019. [Port Vila Integrated Urban Improvements Project: Initial Poverty and Social Analysis](#). Manila.

²⁰ Other projects include the Vanuatu Energy Access Project; TCP Tanna Schools Reconstruction Project; TCP Ring Road Rehabilitation Project; and Vanuatu Inter-island Shipping Support Project.

REVISED DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Indicators and Targets	Project Achievements
<p>Impact Sustainable development of Port Vila achieved.</p>		<p>The project has upgraded and provided climate resilient roads, improved stormwater drainage and reduced flooding, improved fecal sludge treatment and disposal provided sanitation facilities to informal communities as well public sanitation facilities, delivered hygiene awareness and training to more than 10,000 people, and built operations and maintenance capacity for urban roads, drainage, and sanitation facilities.</p> <p>All these help the sustainable development in Port Vila.</p>
<p>Outcome Safer and less congested roads, reduced flooding and improved health and hygiene in Port Vila reduced</p>	<p>By 2019: The government maintains its initial budget commitment of \$400,000 per annum for maintenance works.</p> <p>75% of households within the urban and periurban areas in Port Vila have access to improved sanitation.</p> <p>Incidence of diarrhea in Port Vila reduced by half from 892 reported cases per 1,000 population in 2010.</p> <p>At least 20% decrease in travel time (2010 baseline is 2 minutes per km), and 0.5% decrease in vehicle operations costs.</p>	<p>By 2019 <u>Not Achieved</u> The government provided Vt65,027,892 (\$570,000 equivalent) in its 2019 National budget for development and maintenance of urban roads in Shefa Province, but data of the actual expenditure on roads O&M was unavailable.</p> <p><u>Achieved</u> The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) estimated that by end of 2016, 92% of Vanuatu's urban population had access to improved sanitation. In Port Vila, 10,270 households (94%) have access to improved sanitation.</p> <p><u>Achieved</u> According to Ministry of Health 2018 statistics data, the number of reported cases of mild, moderate, and acute diarrhea in Efate (including Port Vila) was 8,000 cases which was equivalent to 83 reported cases per 1,000 population.</p> <p><u>Not Achieved</u> It is not able to evaluate this indicator since no commuter and traffic surveys have been conducted since 2014. However, anecdotal evidence from Port Vila residents indicate that travel times through Port Vila have decreased due to the roads improved by the project (particularly the Lini Highway and the Kumul Highway), improved traffic controls at major road intersections. The project also constructed of bus bays and conducted intensive road safety campaigns to regulate the operation of minivans. They now collect or off-load passengers in the bus bays instead of stopping in the middle of roads and disrupting the traffic flow. The project improved stormwater drainage and reduced traffic jams during the heavy rains, particularly on the Kumul Highway (the fastest route to Port Vila's airport and northern Efate) which was frequently impassable at Manples due to flooding.</p>
<p>Outputs</p> <p>1. Road and drainage network in Port Vila improved</p>	<p>By 2019:</p> <p>1a. 13.3 km of urban roads rehabilitated.</p>	<p>1a. Achieved 12.1 km of roads were rehabilitated by 8 November 2019. The road rehabilitation comprised provision of climate resilient pavements including:</p>

Design Summary	Performance Indicators and Targets	Project Achievements
	<p>1b. 14.5 km of urban drainage constructed or rehabilitated.</p>	<p>(a) 6.5 km of asphaltic concrete for the Lini Highway and Kumul Highway which have high traffic volumes and heavy vehicular loads. The upgraded pavements were reinforced with asphalt reinforcing grid and polymer modified binder was applied for improved strength and durability and increased design life (15 years).</p> <p>(b) 5.2 km of double seal bituminous treatment to roads in the Central Business Area and other collector roads within the Port Vila municipal boundary. The bituminous treatments included the use of polymer modified binder for improved strength and durability and increased design life (10 years).</p> <p>(c) 0.4 km of concrete pavement for George Kalsakau Drive in the Central Business Area which is exposed to sea inundation during severe cyclones.</p> <p>In addition, 45 bus bays and 6.5 km of 2 m wide footpaths were constructed which significantly improved vehicular and pedestrian traffic flow on the Lini Highway and Kumul Highway.</p> <p>1b. Substantially achieved. Construction of the drainage component was completed in August 2018. A total of 6.4 km of drainage was constructed or rehabilitated comprising (i) 4.9 km of new pipe drainage, (ii) 0.3 km of grass-lined open drains, and (iii) 1.2 km of existing pipe drainage rehabilitated. An additional 15.4 km of roadside drainage (kerbs and gutters) was also constructed which was not included in the drainage targets at the major change of scope.</p> <p>In the major change of scope, it scheduled to improve drainage in 3 urban flooding areas by building 14.5 km drainage system. An effective and innovative drainage design approach was taken, including the adoption of nature-based stormwater disposal methods (infiltration basins), which resulted in a reduction of the drainage length to 6.4 km as well as the cost. At the end of construction, the project improved the drainage systems in 6 urban flooding areas. The output was doubled with cost savings.</p>
<p>2. The government has improved the sanitation system in greater Port Vila.</p>	<p>2a. All (domestic & commercial) sludge in Port Vila is treated and disposed.</p>	<p>2a. Achieved A fecal sludge treatment facility with a capacity of 28 m³/day was constructed under the project was commissioned in August 2017. It was initially operated by the civil works contractor for 8 months to prove the plant functionality and to train Port Vila Municipal Council (PVMC) personnel in the operations and maintenance of the plant. During the first 6 months of operations, 1,160 cubic meters of fecal sludge was delivered to the facility, that is 6.4 cubic meters a day from commercial sources and households. PVMC took over the management of the facility in May 2018. All fecal sludge collected in Port Vila and its surrounds is now treated at the facility. Inspections of the facility in 2019 showed that the facility was operating satisfactorily and well maintained.</p>
<p>3. Central area and settlement communities use improved hygiene facilities.</p>	<p>3a. 4 new multipurpose community sanitation & hygiene facilities at 2 informal settlements in greater Port Vila constructed and operational with the majority operated</p>	<p>3a. Achieved The project delivered 13 new communal sanitation facilities (CSF) to 6 informal settlements in Port Vila and have been handed over to the communities. 6 new CSFs built by contractors were completed in October 2017, serving the communities of Mele-Waisisi (3), Blacksans (1), Seaside Palma (1) and Seaside Futuna (1). 7 new CSFs were built by the communities with designs, materials, and technical expertise provided by the project. They were completed in 2018 serving Ohlen Nabanga (1) and Tokyo Buninga (6). Each CSF contains flush toilets, showers, and washing facilities. Separate toilet and shower facilities were provided for men and women. All facilities except for those at Tokyo Buninga provide facilities for</p>

Design Summary	Performance Indicators and Targets	Project Achievements
	by women's groups.	handicapped persons. Community sanitation committees were established to manage the new facilities and composed mostly of women.
4. Government agencies and communities and user groups have the capacity to manage sanitation, roads, and drainage systems effectively and efficiently.	<p>3b. 4 existing multipurpose community sanitation & hygiene facilities at 3 informal settlements in greater Port Vila refurbished with the majority operated by women's groups.</p> <p>3c. 3 new public toilet facilities with access for women, children & the disabled in the greater Port Vila constructed and operational.</p> <p>3d. 4 existing public toilet facility in greater Port Vila refurbished, including special provisions for women, children & the disabled.</p> <p>4a. Capacities of at least 50 government staff (50% being women) improved to manage and maintain sanitation, roads, and drainage facilities.</p> <p>4b. Drainage maintenance follows 100% annual maintenance schedule.</p>	<p>3b. Achieved The project refurbished 5 exiting sanitation facilities at 4 informal communities - Seaside Palma (1), Seaside Futuna (1) Seaside Tongoa (1) and Tokyo Buninga (2). All refurbishments were completed in October 2017 except for the refurbishments at Tokyo Buninga which was completed in December 2018. The refurbished facilities are managed by Community sanitation committees composed mostly of women.</p> <p>3c. Substantially achieved 2 new public sanitation facilities, including toilets and showers, were constructed (Fatumaru Bay and Independence Park). Construction of the facilities was completed in July 2018. The remaining toilet was not constructed due to lack of funds. The Fatumaru Bay facilities are managed and operated by PVMC and the Independence Park facilities by the Vanuatu Cricket Association. The latter's hours of operation are restricted.</p> <p>3d. Not achieved Two public toilet facilities, one at the Port Vila Hospital maternity wing and another one at Port Vila Hospital Eye and Anti-natal Clinic were refurbished and handed over to the Hospital for operation in July 2018. The remaining toilet facilities were not refurbished due to lack of funds.</p> <p>4a. Not achieved Capacity development for road and drainage system maintenance within MIPU was covered by the road maintenance capacity building provided by the DFAT through the Roads for Development (R4D) Program instead of the project. The R4D road maintenance capacity development delivered training to more than 100 people Public Works Department (a division of MIPU) personnel in Vanuatu. A total of 32 workers, including 3 women in MIPU's Shefa Division, which is responsible for the maintenance of roads in Port Vila, have received training related to road and drainage maintenance.</p> <p>Capacity development for PVMC personnel for operations and maintenance of the fecal sludge treatment facility was delivered by facilities civil works contractor over a period of 8 months. Six persons were trained including 2 women. The people trained now operate the facility.</p> <p>4b. Not achieved At the time of preparation of the PCR, it is too early to conclude if drainage maintenance is absolutely following the annual drainage schedule. However, MIPU has established drainage maintenance schedules for Port Vila drainage network and is implementing the schedule.</p> <p>Further, MIPU has adopted the nature-based stormwater disposal approach that was developed under the project and has constructed a</p>

Design Summary	Performance Indicators and Targets	Project Achievements
		similar facility at Seven Stars (a residential area north of Port Vila's central business area). No flooding at Seven Stars has been reported since the facility was constructed.
5. Efficient project management services are provided.	<p>4c. 100% of community sanitation facilities comply with sanitation standards at any time.</p> <p>4d. 100 women are trained in management of sanitation and hygiene facilities maintenance activities.</p> <p>5a. The project is implemented on time and within budget.</p>	<p>4c. Substantially achieved At the time of preparation of the PCR, 16 out of 18 CSFs delivered by the project, except 2 at Blacksans and Seaside Futuna, were fully maintained and operating well. Problems within the Blacksans and Seaside Futuna communities in collecting facility usage fees have led to delays in payment of water bills which facilities being shut on a number of occasions for several weeks until the community was able to raise the funds required to pay the water bill.</p> <p>4d. Achieved Capacity development for the operations and maintenance of community sanitation facilities was delivered through the project's hygiene awareness and education program which delivered training 2,697 women, 3,124 girls, 1,674 men, and 3,201 boys.</p> <p>5a. Not achieved The project completion was extended twice, two years delayed than planned. Budget available for project reduced by approximately 20% due to foreign exchanges losses of the cofinancing. A major change of scope was conducted.</p>

CSF = communal sanitation facility; DFAT = Department of Foreign Affairs and Trade; km = kilometer; m = meter; m³/day = cubic meters per day; MIPU = Ministry of Infrastructure and Public Utilities; PCR = project completion report; PVMC = Port Vila Municipal Council; R4D = Roads fir Development; UNICEF = United Nations Children's Fund; WHO = World Health Organization,

Source: Asian Development Bank.

PROJECT COST AT APPRAISAL AND ACTUAL
(\$ million)

Item	Appraisal Estimate ^a			Actual ^b		
	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange	Local Currency	Total Cost
A. Drainage and Road System Improvement						
1. Drainage System Improvement	3.100	5.500	8.600	0.000	0.000	0.000
2. Road Network Improvement	4.800	8.200	13.000	0.000	0.000	0.000
3. Drainage and Road Improvement			0.000	15.794	1.868	17.662
Subtotal (A)	7.900	13.700	21.600	15.794	1.868	17.662
B. Sanitation						
1. Sludge Treatment Plant	1.600	2.700	4.300	0.000	0.984	0.984
2. Biogas Plant & Copower Generation	0.300	0.500	0.800	0.000	0.000	0.000
3. Land Acquisition Cost	0.000	0.200	0.200	0.000	0.000	0.000
Subtotal (B)	1.900	3.400	5.300	0.000	0.984	0.984
C. Hygiene						
1. Rehabilitation of Existing MPMU Facilities	0.000	0.000	0.000	0.000	0.000	0.000
2. Construction of New MPMUs	0.100	0.800	0.900	0.000	1.141	1.141
Subtotal (C)	0.100	0.800	0.900	0.000	1.141	1.141
D. Institutional Strengthening						
1. Training for Staff	0.000	0.400	0.400	0.000	0.000	0.000
2. Training for Communities	0.000	0.400	0.400	0.000	0.000	0.000
3. Awareness Campaigns	0.000	0.400	0.400	0.000	0.000	0.000
4. Gender Mainstreaming	0.000	0.400	0.400	0.000	0.000	0.000
Subtotal (D)	0.000	1.500	1.500	0.000	0.000	0.000
E. Project Management and Operations						
1. Consulting Services ^c						
a. Implementation Advisory Consultants (International)	0.500	0.000	0.500	1.171	0.000	1.171
b. Design and Supervision Consultants						
Design and Supervision Consultants (international)	2.500	0.000	2.500	10.516	0.000	10.516
Design and Supervision Consultants (national)	1.200	0.000	1.200	0.000	0.103	0.103
2. Miscellaneous administration and support cost	0.100	0.200	0.300	0.063	0.106	0.168
3. Project Operations	0.000	0.200	0.200			
Subtotal (E)	4.300	0.400	4.700	11.750	0.209	11.959
F. Equipment						
Equipment	0.000	0.000	0.000	0.000	0.108	0.108
Subtotal (F)	0.000	0.000	0.000	0.000	0.108	0.108
Physical Contingencies	0.900	1.300	2.200	0.000	0.000	0.000
Price Contingencies	0.300	2.400	2.700	0.000	0.000	0.000
Interest During Implementation	0.100	0.000	0.100	0.031	0.000	0.031
Subtotal (G)	1.300	3.700	5.000	0.031	0.000	0.031
Total A+B+C+D+E+F+G	15.500	23.500	39.000	27.575	4.310	31.884

MPMU = multipurpose, multi-user.

^a Includes taxes and duties estimated at \$3.1 million equivalent.

^b Excludes taxes and duties which were exempted from the project but estimated at about \$3.0 million equivalent.

^c Includes all activities delivered under Item D: Institutional strengthening and covers training, awareness campaigns, and gender mainstreaming.

Source: Asian Development Bank estimates.

PROJECT COST BY FINANCIER

Table A3.1: Project Cost at Appraisal by Financier (\$ '000)

Item	Government		ADB		Government of Australia CFA		Government of Australia/Project Grant		Total Cost	
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	Taxes and Duties
A. Investment Costs										
1. Civil Works	0	0.00%	4,086	16.30%	3,282	13.10%	17,706	70.6%	25,074	0
2. Land Acquisition Cost	238	100.00%	0	0.00%	0	0.00%	0	0.00%	238	0
3. Trainings, Workshops, Campaigns	0	0.00%	0	0.00%	295	20.20%	1,161	79.8%	1,456	0
4. Consulting Services	0	0.00%	0	0.00%	1,752	41.8%	2,441	58.2%	4,193	0
5. Miscellaneous administration and Support Cost	0	0.00%	0	0.00%	60	21.2%	222	78.8%	282	0
6. Project Operational Cost	156	100.00%	0	0.00%	0	0.00%	0	0.00%	156	0
7. Taxes & Duties	2,614	100.00%	0	0.00%	0	0.00%	0	0.00%	2,614	0
Subtotal (A)	3,008	8.84%	4,086	12.00%	5,389	15.84%	21,530	63.29%	34,013	0
B. Recurrent Costs										
1. Salaries	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
2. Accommodation	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
3. Equipment operation and maintenance	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
Subtotal (B)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
Total Base Cost (A+B)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
C. Contingencies	11	0.50%	358	16.30%	0	0.00%	0	0.00%	369	0
D. Financial Charges During Implementation	0	0.00%	120	100.00%	0	0.00%	1,832	83.20%	1,952	0
Total Project Cost (A+B+C+D)	3,019		4,564		5,389		23,362		36,334	0
% Total Project Cost		8.3%		12.56%		14.83%		64.30%		100%

ADB = Asian Development Bank; CFA = Channel Financing Agreement between the Government of Australia and ADB.

1. Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

Table A3.2: Project Cost at Completion by Financier

Item	Government		ADB		Government of Australia CFA		Government of Australia/Project Grant		GEF(LDCF)		Total Cost	
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	Taxes and Duties
A. Investment Costs												
1. Civil Works	0	0.00%	4,393	22.13%	0	0.00%	13,194	66.47%	2,263	11.40%	19,850	0
2. Land Acquisition Cost	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	-	0
3. Trainings, Workshops, Campaigns	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	-	0
4. Consulting Services	0	0.00%	0	0.00%	4,307	36.21%	6,982	58.69%	607	5.10%	11,896	0
5. Miscellaneous administration, Support Cost	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	-	0
6. Project Operational Cost	0	0.00%	0	0.00%	108	100.00%	0	0.00%	0	0.00%	108	0
7. Taxes & Duties	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	-	0
Subtotal (A)	0	0.00%	4,393	13.79%	4,415	13.86%	20,176	63.34%	2,870	9.01%	31,853	0
B. Recurrent Costs												
1. Salaries	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
2. Accommodation	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
3. Equipment operation and maintenance	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
Subtotal (B)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
Total Base Cost (A+B)	0	0.00%	4,393	13.79%	4,415	13.86%	20,176	63.34%	2,870	9.01%	31,853	0
C. Contingencies	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0
D. Financial Charges During Implementation	0	0.00%	31	100.00%	0	0.00%	0	0.00%	0	0.00%	31.1706	0
Total Project Cost (A+B+C+D)	0	0.00%	4,425		4,415		20,176		2,870	9.00%	31,884	0

ADB = Asian Development Bank; CFA = Channel Financing Agreement between the Government of Australia and ADB; GEF = Global Environment Facility; LDCF = Least Developed Countries Fund.

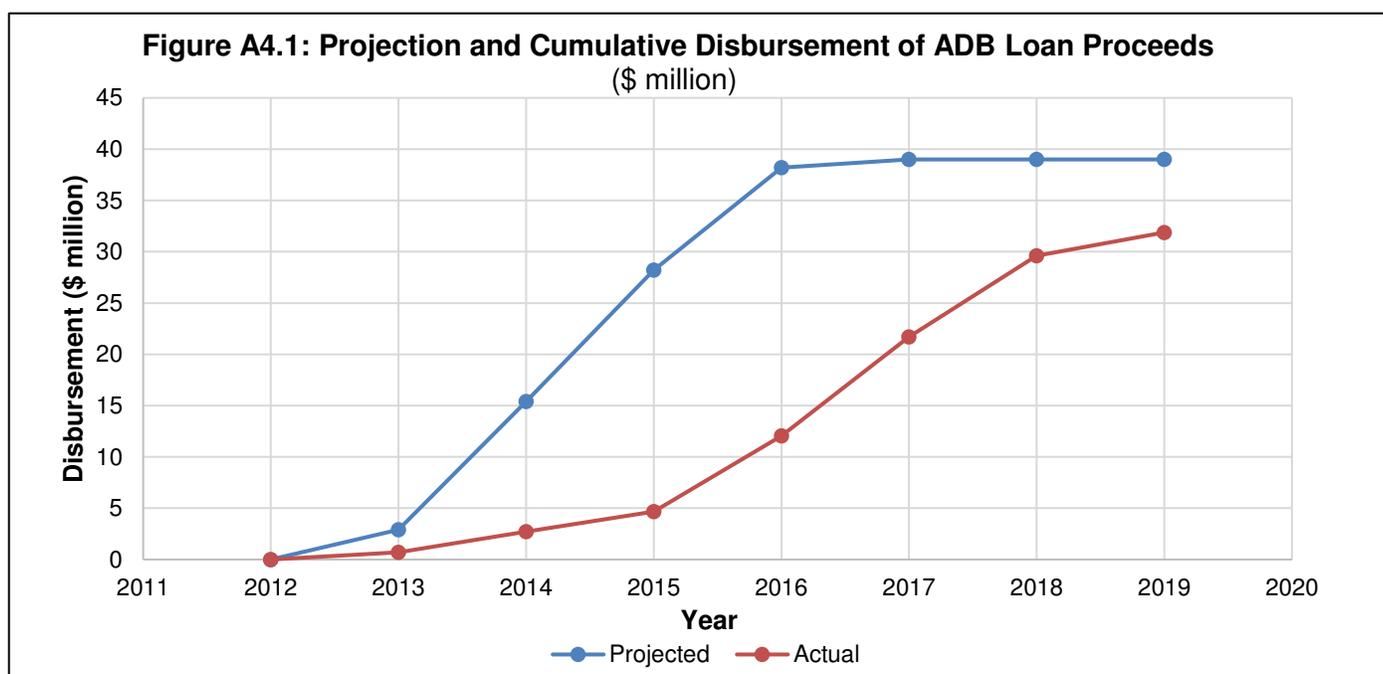
Source: Asian Development Bank.

DISBURSEMENT OF ADB LOAN AND GRANT PROCEEDS

Table A4.1: Annual and Cumulative Disbursement of ADB Loan Proceeds
(\$ million)

Year	Annual Disbursement		Cumulative Disbursement	
	Amount (\$ million)	% of Total	Amount (\$ million)	% of Total
2013	0.685	2.15%	0.685	2.15%
2014	2.092	6.56%	2.777	8.71%
2015	1.935	6.07%	4.712	14.78%
2016	7.344	23.03%	12.056	37.81%
2017	9.699	30.42%	21.755	68.23%
2018	7.848	24.61%	29.602	92.85%
2019	2.281	7.15%	31.884	100.00%
Total	31.884	100.00%		

ADB = Asian Development Bank.
Source: Asian Development Bank.



Source: Asian Development Bank.

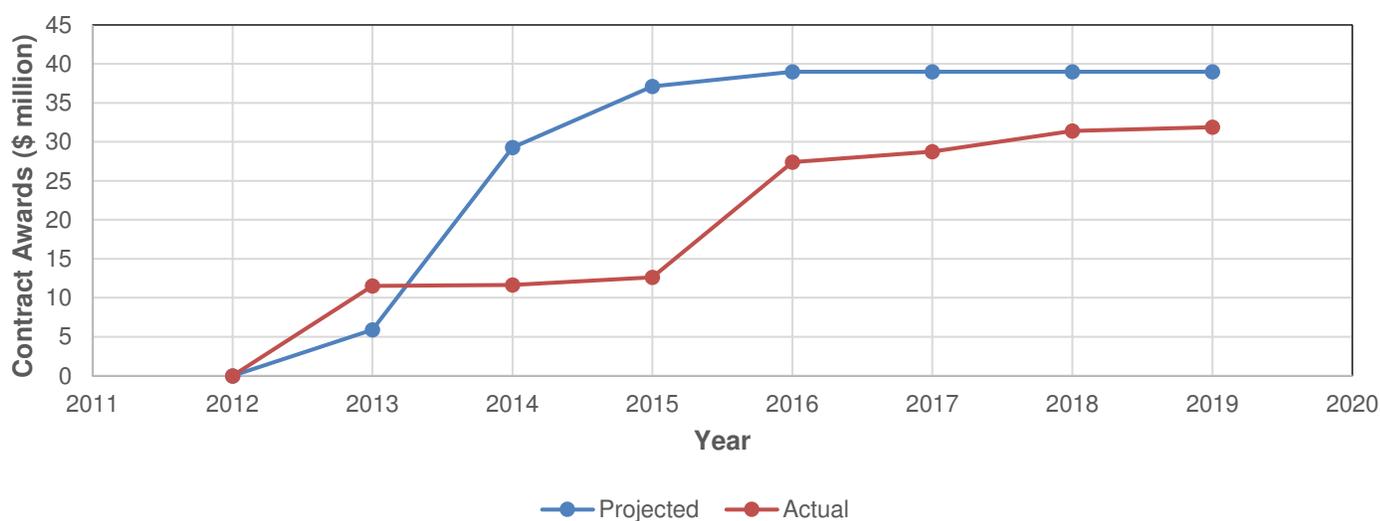
CONTRACT AWARDS OF ADB LOAN AND GRANT PROCEEDS

Table A5.1: Annual and Cumulative Contract Awards of ADB Loan Proceeds
(\$ million)

Year	Actual Annual Contract Awards		Actual Cumulative Contract Awards	
	Amount (\$ million)	% of Total	Amount (\$ million)	% of Total
2013	11.533	36.17%	11.533	36.17%
2014	0.137	0.43%	11.67	36.60%
2015	0.977	3.06%	12.647	39.67%
2016	14.764	46.31%	27.411	85.97%
2017	1.342	4.21%	28.753	90.18%
2018	2.663	8.35%	31.416	98.53%
2019	0.468	1.47%	31.884	100.00%
Total	31.884	100.00%		

ADB = Asian Development Bank.
Source: Asian Development Bank.

Figure A5.1: Projection and Cumulative Contract Awards of ADB Loan Proceeds
(\$ million)



Source: Asian Development Bank.

CHRONOLOGY OF MAIN EVENTS

Date	Event
30 November 2010	PPTA final report submitted by Egis Bceom in joint venture with Qualao Consulting Ltd.
26 August 2011	Council of Ministers decision 63/2011 to establish PMU
August 2011	Council of Ministers decision to combine ADB proposed drainage and sanitation project with Government of Australia roads project
13 December 2011	The Report and Recommendation to the President of the Port Vila Urban Development Project (PVUDP) approved including ADB loan of SDR3,174,000 and administration of grants from the Government of Australia totaling \$31 million. Original closing date of 31 December 2017
11 May 2012	Inaugural meeting of PVUDP Project Steering Committee
12 December 2012	Government signed loan and grant agreements
13 February 2013	PVUDP loan and grant declared effective
2 September 2013	Design, Supervision and Capacity Development (DSCD) consultancy signed
15 January 2014	DSCD Inception Workshop
8 April 2014	DSCD Preliminary Design Workshop
Sept 2014	The Steering Committee decide to build asphalt roads
13 March 2015	Cyclone Pam struck Port Vila, it was the second most intense tropical cyclone of the south Pacific Ocean.
23 July 2015	First civil works contract for George Kalsakau Drive awarded
July 2015	Design issues resolved between DSCD consultant and VPMU and project design and budget finalized
July 2015	Additional technical advisory support provided to PWD to help strengthen due diligence and project oversight.
September 2015	Replacement of Australian funded Project Management Adviser in VPMU
October 2015	PVUDP categorized as "actual problem" by ADB and "investment requiring improvement" by DFAT
Jan 2016	Mid-Term Review and extension of project closing date to 31 December 2018
March 2016	Contract for the construction of a septage treatment facility (STF) at Bouffa was signed.
April 2016	The Port Vila Municipal Council (PVMC) issued a notice to all property owners within the Municipality advising that: (i) the connection of sewer and septic tank pipes to the storm water system is prohibited under the Public health Act, the Pollution Act, the Environmental Management and Conservation Act, and the PVMC Nuisance Bye Law
April 2016	Contract for the construction of community sanitation facilities signed with the Contractor on site by 11 May 2016.
20 May 2016	Revised closing date of 31 December 2018 approved
May 2016	ADB, VPMU and PWD agreed with DFAT recommendations on harmonizing PVUDP's scope with the DFAT Roads for Development Program (R4D). This included R4D taking over responsibility for capacity development support.
June 2016	ADB approved a staff contract to extend the services of the Project Management Advisor (PMA) until 8 August 2016 while the recruitment of a PMA, funded by the Governance for Growth Program is finalized.

Date	Event
June 2016	International contract administration manager mobilized for up to 15 months funded by ADB to strengthen the contracts administration capacity of PWD and MIPU
October 2016	Community sanitation and hygiene end-of-project evaluation report conducted
December 2016	Mobilization of the national project manager.
December 2016	Major change of scope approved by the Board of ADB
December 2016	Additional grant financing of \$2.87 million from the Global Environment Facility's Least Developed Country Fund approved
31 January 2017	Recruitment of replacement national project manager funded by ADB for a period of up to 21 months through a regional technical assistance
31 January 2017	Mobilization of international project manager advisor
13 February 2017	By Variation Order No.7, capacity development was varied out of DSCD's consultant's contract.
29 August 2017	Bouffa septage treatment facility officially opened.
September 2017	A Completion Certificate issued for all works under the Communities Sanitation Facilities. However, there are still a number of outstanding defects at the time of the PCR.
July 2018	DSCD consultancy contract ceased. Following a VPMU assessment of the structure and arrangements to support the administration and construction oversight of PVUDP contract, the SC resolved to terminate the services of DSCD consultant and engage individual consultants to deliver DSCD services
31 December 2018	PVUDP physically completed
20 November 2019	PVUDP financially closed

ADB = Asian Development Bank; DSCD = design, supervision and capacity development; DFAT = Government of Australia Department of Foreign Affairs and Trade; MIPU = Ministry of Infrastructure and Public Utilities; PCR = project completion report; PMA = project management advisor; PPTA = project preparatory technical assistance; PVMC = Port Vila Municipal Council; PVUDP = Port Vila Urban Development Project; PWD = Public Works Department; RRP = report and recommendation to the President; SC = steering committee; STF = Septage Treatment Facility; TA = technical assistance; VPMU = Vanuatu Project Management Unit.

IMPLEMENTATION OF GENDER ACTION PLAN AND ACHIEVEMENTS

A. Introduction/Overview of the Project

1. Port Vila has expanded beyond its originally defined boundaries as a result of rapid economic development, rural-urban migration and proliferating informal settlements. Urban services have significant inadequacies, particularly in drainage, roads, sanitation and hygiene services. The poor conditions of these services have had an impact on public health, quality of life and economic activity—particularly tourism led economic growth in Vanuatu.

2. The initial anticipated impact of the Port Vila Urban Development Project (PVUDP) was sustained urban development of Port Vila. The expected outcome was that the government sustainably improved hygiene situation and reduced water-based hazards in Port Vila. Originally, the project had five outputs: (i) the government has improved the road network and drainage system in greater Port Vila; (ii) the government has improved the sanitation system in greater Port Vila; (iii) Central areas and settlement communities use improved hygiene facilities; (iv) Government agencies and community and user organizations have the capacity to manage sanitation, roads, and drainage systems effectively and efficiently; and (v) efficient project management services are provided. A major change in scope approved by the Board in December 2016 resulted in reducing the scope of the project. The extent of some activities was reduced due to errors in the Port Vila Stormwater Master Plan and the project's target outcome was changed to improve road safety, reduce road congestion, minimize urban flooding, and improve health and hygiene conditions in Port Vila. Two components under project Output 4, on capacity development (4a) and maintenance (4b) elements, were removed to avoid duplication of capacity development activities.

B. Gender Issues

3. Project preparation highlighted that despite positive progress being made at the policy level on gender, women still faced significant challenges in Vanuatu including limited participation in decision making and development initiatives; challenges to income generation and economic empowerment; health issues, including time spent caring for family members with water borne and hygiene related illnesses.

C. Project Gender Features

4. The project is classified as “effective gender mainstreaming” (EGM) in accordance with the ADB’s Gender and Development Policy. A Gender Action Plan (GAP) is incorporated in the project to address the key gender issues identified at design stage. To ensure women benefit from project-related activities, including participation, access and empowerment through various activities, the GAP aimed to implement the following features:

- (i) measures to ensure equitable participation of women and men in community consultations for project site identification, design and construction of roads and drainage and (O&M) of sanitation facilities;
- (ii) construction and renovation of community sanitation and hygiene facilities with majority of these facilities being operated by women’s groups;
- (iii) actions to maximize employment, training and income generation opportunities for women during construction with at least 30% of project labor force are women;
- (iv) access of women workers to skills trainings and awareness education activities on gender issues and HIV prevention;

- (v) specific measures to ensure road and drainage design address the particular needs of women, children and persons with disabilities; and
- (vi) provisions to integrate gender in project management framework and collection of gender-related data for monitoring purposes of the project.

5. Due to the project's major change of scope, the GAP was updated to focus on gender-specific activities and quantitative targets included in Output 1 (Improved Roads and Drainage System in Greater Port Vila), Output 2 (Improved Sanitation System in Greater Port Vila) and Output 3: (Central area and settlement communities use improved hygiene facilities).

D. Gender Action Plan Achievements

6. As noted previously, the major change of scope to the project resulted in the GAP being amended. A social safeguards review mission in March 2017 resulted in agreement to change the GAP by reducing the project outputs from 5 to 3 outputs. However, these changes were not communicated to relevant ADB stakeholders (e.g., SDCC-GEN). As such, reporting is against the GAP outlined in the PAM (which incorporated the changes made as a result of major change of scope to the project in 2016). Because of these changes in 2017, data and reporting were not consistently collected for outputs 4 and 5 below. Overall, the project met 63% of the quantitative targets (5/8) and 65% (19/29) of the activities outlined in the GAP.

Gender Action Plan Achievements Matrix

Action/target in GAP	Target in GAP progress report	Achievement
Output 1: Roads and drainage network in Port Vila improved		
Activity 1.1 Consult with women during the development of roads and drainage works.	Women and men participate equitably in consultation on improved roads and drainage design and construction	Achieved: Consultation with women's community groups and private sector. In total, 158 women and 150 men were consulted. One woman was appointed on the Traffic taskforce.
Activity 1.2 Improve safety and convenience for women, children and persons with a disability in locations targeted for improved roads and drainage	Road and drainage design meet the specific needs of women, children and disabled persons	Achieved: Consultations with VSPD (10 men, 6 women) on disability access to footpaths and overall scope of project. Meetings with VSPD (2 women, 1 man) to discuss location, regulation and awareness raising of disability parking spaces planned for GKD. Final road infrastructure included; 30 new bus bays with signage, 11 warning signs around schools and communities, 7 km of footpaths with pram ramps, road marking and signage. The project also implemented a Traffic Awareness Campaign (TRS) which included billboards, posters, social media, radio messages and animated videos shown in cinemas and other locations.
Maximize employment, training and income generation opportunities for women during construction	Target 1.1 30% of project labor force are women	Not achieved: In 2018 RMS included: 14.5% of Ni-Vanuatu personnel were women and 6% of expatriate personnel were women. On-site at GKD Concourse women's employment on site has been between 15-21% (two women out of 7-11 men).
	Activity 1.3. Work environments are	Achieved.

Action/target in GAP	Target in GAP progress report	Achievement
	conducive to women's employment	All contractors provided gender segregated toilets.
	Activity 1.4 Women or women's groups access opportunities for non-formal income generation	Achieved: RMS and subcontractor workforce are highly mobile, they access Mama's markets where available. CCECC worked at GKD, close to the central market. DSCD team employ disabled persons for traffic surveys and pedestrian counts.
	Activity 1.5 Labor force receive awareness education training on HIV and Gender issues	Achieved: HIV awareness sessions with laborers and the public, reaching 99 men and 155 women in 2017. CCECC contracted WSB for HIV awareness sessions reaching 24 men and 1 woman. Downer contracted WSB for HIV and Gender Awareness targeting GKD Concourse personnel and the public, reaching 64 men and 52 women. All contractors maintain a supply of condoms and IEC materials on site.
	Activity 1.6 Women access opportunities for skills training	Achieved: RMS woman traffic controller trained and promoted to concrete leveler. CCECC employed 1 woman OHS officer. Downer 2 women traffic controllers received training and experience as manual laborers
Activity 1.7 Prohibit sex discrimination in employment	Female and male employees are treated equitably	Achieved: Complaints mechanism in place for RMS and CCECC and Downer. Positive feedback received from women RMS employees. RMS submitting formal written concerns to VPMU and Police in support of women traffic controllers.
Output 2: The government has improved the sanitation system in greater Port Vila		
Activity 2.1 Consult with women and men to inform design of sewage treatment facility (STF)	Women and men participate equitably during consultation on design and location of STF	Achieved: In Q4 2015, DSCD conducted a socio-economic survey and census of loss involving 12 women and 28 men land users/gardeners. Additional consultation was carried out with 21 women and 38 men from Etas Elang (Bouffa community) regarding impacts of STF and resettlement of gardens. Consultation was conducted with 9 women and 38 men stakeholder partners from government, NGO and private sector.
Maximize employment, training and income generation opportunities for women during construction	Target 2.1 30% of STF project labor force are women	Achieved: 2 of 4 Downer employees are women (50%).
	Activity 2.2 Work environments are conducive to women's employment	Not achieved: STF had 2 staff on site daily, 1 man and 1 woman, who share a single toilet.
	Activity 2.3 Women or women's groups access increased opportunities for non-formal income generation	Not achieved: No formal arrangements made for local women to sell lunches to workforce

Action/target in GAP	Target in GAP progress report	Achievement
	Activity 2.4 Labor force receive awareness education training on HIV and Gender issues	Not achieved: HIV and gender awareness was not an aspect of the STF management contract.
	Activity 2.5 Women access opportunities for skills training	Achieved: 2 women employees trained in data collection and record keeping. 2 of 4 employees are women (50%).
Activity 2.6 Prohibit sex discrimination in employment	Female and male employees are treated equitably	Achieved: Complaints mechanism in place. Downer employment policy in place for equal pay for equal work.
Output 3: Central area and settlement communities use improved hygiene facilities		
	Target 3.1 4 new multipurpose community sanitation & hygiene facilities at 2 informal settlements in greater Port Vila constructed and operational with the majority operated by women's groups	Achieved: The project delivered 13 new CSFs at six informal settlements, including: (i) six new CSFs, built by the contractors completed by October 2017, serving three communities of Mele-Waisisi, and one community in each of Blacksans, Seaside Palma and Seaside Futuna; and (ii) seven new CSFs, built by the communities with the designs, materials, and technical expertise provided by PVUDP, completed in 2018 serving the communities Ohlen Nabanga (one) and Tokyo Buninga (six). Each CSF contains flush toilets, showers, and clothes washing facilities, with separate toilet and shower facilities provided for men and women. All facilities, except for those at Tokyo Buninga, also provide facilities for people with disabilities. All the new CSFs are managed by community sanitation committees, mostly composed of women.
	Target 3.2. 4 existing multipurpose community sanitation & hygiene facilities at 3 informal settlements in greater Port Vila refurbished with the majority operated by women's groups	Achieved: The project refurbished 5 exiting sanitation facilities at 4 informal communities - Seaside Palma (1), Seaside Futuna (1) Seaside Tongoa (1) and Tokyo Buninga (2). All refurbishments were completed in October 2017 except for the refurbishments at Tokyo Buninga which was completed in December 2018. The refurbished facilities are managed by Community sanitation committees composed mostly of women.
	Target 3.3 3 new public toilet facilities with access for women, children & the disabled in the greater Port Vila constructed and operational	Not achieved: 2 new public sanitation facilities, including toilets and showers, were constructed (Fatumaru Bay and Independence Park). Construction of the facilities was completed in July 2018. The Fatumaru Bay facilities are managed and operated by PVMC and the Independence Park facilities by the Vanuatu Cricket Association.
	Target 3.4 4 existing public toilet facility in greater Port Vila refurbished including special provisions for women, children & the disabled	Not achieved: One public toilet facility at the Port Vila Hospital maternity wing was refurbished and handed over to the Hospital for operation in July 2018.
Consult with women and men on the design of CSFs and PTs	Target 3.5 Women and men participate equitably (at least 50% women) during	Achieved: Extensive consultation with sanitation committees (composed of 47 women and 34 men in 2016 rose to 70 women 44 men in 2017)

Action/target in GAP	Target in GAP progress report	Achievement
	consultation on the design of CSFs and PTs	have resulted in revisions to design based on community feedback. Site inspections with Vanuatu Society for People with Disabilities lead to structural alterations at 2 facilities to improve wheel chair access to sanitation facilities. This involved the widening of a concrete wheel chair path and adding a safety lip, decreasing the incline of a wheel chair ramp and adding a small access ramp where required. Extensive consultations with Central Market Stakeholders in 2017 including Craft Mama's, Restaurant and Green's Mama's (58 women and 26 men) informed the revision of designs for the Central Market PSF (this PSF has been removed from the scope of the project).
Activity 3.1 Consult with women's groups, community leaders, government and CSOs to identify viable sites for new/improved community sanitation facilities (CSF) and public toilets (PTs)	Ensure that the needs of women, children and disabled persons are prioritized when identifying locations for new/improved CSFs and PTs	Achieved: 140 women, 138 men, 26 persons living with a disability and 18 women caregivers were consulted on the initial design of the community sanitation facilities. Public sanitation facilities also involved extensive consultation with 16 government agencies and women's groups, including 167 women and 165 men.
Activity 3.2 Consult with women and men to inform the development of solid waste management and facility operation and maintenance (O&M) plans for CSFs and PTs	Women and men participate equitably in consultation on development of plans to reduce, reuse, recycle and dispose of solid waste and in the development of O&M plans for CSFs and PTs	Achieved: In 2016 SCs were composed of 47 women and 34 men and by Q1 2018 these numbers have increased to 70 women and 44 men. Independent evaluation (2017) noted a visibly cleaner community.
Activity 3.3 Design and implement an awareness and education program on sanitation and hygiene, including O&M of sanitation facilities	Improved knowledge, attitude and practice in terms of sanitation and hygiene in target settlement communities and public toilet sites. Community sanitation and hygiene committees able to operate and maintain new and improved CSFs and PTs	Achieved: SCs have received to-date a total of 331 days of education and training reaching 2,847 women, 1,777 men, 3,154 girls and 3,230 boys. Independent evaluation report of September 2016, indicated that 45% of 222 people surveyed (137 women and 85 men) stated that the major change they had seen in the community during the project period was 'visibly cleaner community.' 52% of respondents said diarrhea is caused by not washing hands after using the toilet compared to 15% in the 2014 baseline survey; those who said diarrhea was caused by not washing hands before eating rose from 35%–62%. 11% of respondents stated that a decrease in sickness (mainly diarrhea) and an increase in hand washing were the biggest changes they had seen in their community.
Maximize employment, training and informal income generation	Target 3.6 30% of CSF and PT project labor force are women	Substantially Achieved CSF – 28% of David's Construction labor force were women (23 men and 9 women). Women employed as general construction laborers.

Action/target in GAP	Target in GAP progress report	Achievement
opportunities for women during construction of CSFs and PTs	Activity 3.4 Work environments are conducive to women's employment	Achieved: All toilets are gender segregated
	Activity 3.5 Women or women's groups access increased opportunities for nonformal income generation	Not achieved: CSF – Local women informally selling lunches to labor force PSF – no reports of non-formal income generation
	Activity 3.6 Labor force receive awareness education training on HIV and Gender issues	Achieved: HIV awareness under the project has reached 392 men and 334 women including contractor personnel, community members and the general public.
	Activity 3.7 Women access opportunities for skills training	Achieved: CSF - 9 women laborers received on-the-job construction training. Tokyo Buninga women involved in construction safety training.
Activity 3.8 Prohibit sex discrimination in employment	Female and male employees are treated equitably	Not achieved: Report No. 74, Social Safeguards CSF End-of-Contract Report, documents evidence that the contractor did not comply with the labor laws of Vanuatu and the VNPf Act. Most women and some men employees were paid less than minimum wage.
Output 4: Government agencies and communities and user groups have the capacity to manage sanitation, roads, drainage systems effectively and efficiently		
Activity 4.1 Develop communication plan to increase awareness on (GOV) policy for sanitation, roads, traffic and building code.	Increased understanding among key government agencies, general public and private sector on GOV policies on sanitation, building code, roads and traffic management Government of Vanuatu.	Achieved DSCD Consultants developed a communications strategy, which was implemented to ensure that the general public, government departments and the private sector were fully aware of the project objectives and progress against outcomes. Key activities implemented within the strategy included: monthly newsletters, public notice board, electronic notice board, traffic management working group, community liaison committee, regularly scheduled radio program and active engagement with the news media. A 3-page article titled "Sistas at Work" was featured in the October/November/December 2016 issue of Island Life magazine featuring the work of women employed by RMS and PVUDP plans to improve sanitation and hygiene at the main market.
Activity 4.2 Support key GOV agencies (MIPU, PWD, DEPC) to develop gender policy and engage in gender training on road, drainage and sanitation infrastructure	Increased understanding among target government workers on gender issues related to road, drainage and sanitation infrastructure maintenance.	Achieved: Capacity development for road and drainage system maintenance within MIPU was covered by the road maintenance capacity building provided by the DFAT through the Roads for Development (R4D) Program instead of PVUDP. The R4D road maintenance capacity development delivered training to more than 100 people Public Works Department (a division of MIPU) personnel in Vanuatu. A total of 32 workers, including 3 women in MIPU's Shefa Division, which is responsible for the maintenance of roads in Port Vila, have received training related to road and drainage maintenance. Capacity development for PVMC personnel for operations and maintenance of the fecal sludge treatment facility was delivered by facilities civil works contractor over a period of 8 months. Six

Action/target in GAP	Target in GAP progress report	Achievement
		persons were trained including 2 women. The people trained now operate the facility.
Output 5: Efficient Project Management services are provided		
Develop a gender-sensitive project management framework	Activity 5.1 Gender action sufficiently resourced on project	Not achieved: No progress reported
	Activity 5.2 Project GAP designed, reviewed, implemented and monitored	Not achieved: No progress reported.
	Activity 5.3 Project management plans include gender actions	Not achieved: No progress reported
	Activity 5.4 Sex-disaggregated indicators included in M&E Framework	Not achieved: No progress reported
Activity 5.5 Ensure subcontractors develop gender-sensitive project management framework	Sub-contractors develop and implement gender action plans	Not achieved: Contractors were supported to develop gender action plans but these were not monitored and implemented.
Activity 5.6 Develop a mechanism to ensure women have a voice in high level decision-making for project	Women and men participate equitably on high level project decision-making	Achieved: This was mainstreamed into other outputs e.g. Activity 1.1, Activity 1.2, Activity 2.1.

CCECC = China Civil Engineering Construction Corporation, CSF = community sanitation facilities, CSO = community service obligation, DEPC = Department of Environmental Protection and Conservation, GAP = Gender Action Plan, GKD = George Kalsakau Drive, GOV = Government of Vanuatu, km = kilometer, M&E = mechanical and electrical, MIPU = Ministry of Infrastructure and Public Utilities, NGO = nongovernment organization, O&M = operation and maintenance, OHS = occupational health and safety, PSF = public sanitation facility, PT = public toilet, PVMC = Port Vila Municipal Council, PVUDP = Port Vila Urban Development Project, PWD = Public Works Department, R4D = Roads for Development, STF = sewage treatment facility, TRS = traffic awareness campaign.

E. Case Study

7. Meriam was born prematurely and struggled with limited movement and poor eyesight that left her largely confined to her home. PVUDP's work in her peri-urban Port Vila community, has benefitted Meriam's health, improved her eyesight and has resulted in her attending school for the first time. Before the project, Meriam's community lived with poor sanitation and waste management, with water sourced from an underground-well. The projects formed sanitation committees, promoted better WASH and waste management practices and supported better nutrition. Meriam's mother Joana stated that "the community has become more cautious about the good benefits of healthy lifestyle by cleaning their backyards, recycling tin-cans, bottles and creating their own compost from their food waste." "We've installed tippy taps on every toilet and taught people about the importance of hand washing... children's lives have started to change." she said. In addition, Joana learnt more about cooking healthily and with local food crops and

vegetables. As the community became healthier, with fewer instances of diarrhea especially in children, Meriam's eyesight began to improve.

F. Conclusions and Lessons

8. Overall, the project successfully upgraded and built the roads in central Port Vila areas under Output 1 and improved septage service for whole city under Output 2, both benefiting the urban population of 50,000, of which 50% are women. The WHO/UNICEF Joint Monitoring Program for Water Supply, Sanitation and Hygiene (JMP) estimated that by end of 2016, 92% of Vanuatu's urban population had access to improved sanitation. In Port Vila, 10,270 households (94%) have access to improved sanitation. According to Ministry of Health 2018 statistics data, the number of reported cases of mild, moderate, and acute diarrhea in Efate (including Port Vila) was greatly decreased (8,000 cases which was equivalent to 83 reported cases per 1,000 population).

9. The project renovated and built eighteen community sanitation facilities under Output 3, bringing proper water supply and sanitation service to almost 1,700 people in Port Vila of which 50% are women. The provision of basic water and sanitation service had a direct positive impact on women and children through reducing the waterborne disease. The project's GAP enhanced benefits to women through trainings and awareness-raising program. Nongovernment organizations were engaged to raise community awareness of health and hygiene issues and they did it successfully. As a result of the project women played an important role in educating their families and communities about sanitation and hygiene practices

10. Highlights of the GAP implementation includes: the meaningful participation of women during project design consultations; a significant number of women receiving information and training related to WASH and HIV/AIDS (almost 3000); delivery of gender sensitive infrastructure; and women's increased participation in sanitation committees at the community level. However, there were a number of challenges in the overall delivery of the project and implementation of the GAP that resulted in a number of GAP targets and activities not being met. The implementation against the GAP is rated as unsuccessful in delivering intended gender equality results: the project met 63% of the targets (5/8) and 65% (19/29) of the activities outlined in the GAP.¹

Lessons Learned:

- (i) The community-based elements of the project, delivered by NGOs, resulted in positive impacts for women and girls. An independent evaluation confirmed the increased level of awareness of WASH information and an anecdotal decrease in the incidence of diarrhea (therefore decreasing the time women and girls spend caring for sick relatives). In addition the evaluation stated that communities were visibly cleaner – an issue that women and girls had highlighted was an issue in consultations. Finally, in Mele Waisisi, the project supported installation of taps near homes (previously they were using bush toilets and accessing well water). This led to significant time saving for women who could more quickly access safe water and spend less time caring for sick relatives.
- (ii) Creative mechanisms such as community plays helped to deliver health messages: Community plays were the key way that people heard about health, hygiene and waste management. During evaluations, many people could still give

¹ The rating is confirmed by the Gender Equity Thematic Group of Sustainable Development and Climate Change Department, ADB.

examples of what they had learned despite many months passing since they saw the plays. Community members reported that the plays were effective in contributing to change because many people could participate as they were held in the afternoon when women and children were around.

- (iii) Challenges with contractors were the biggest impediment to successful GAP implementation: The challenges with local contractors impacted the overall project (not just GAP implementation). Specific GAP implementation issues included: not adhering to equal pay for equal work for women; lack of proactive engagement in employing women; poor quality of infrastructure; and lack of regular reporting on gender and HIV actions.
- (iv) Extensive consultations resulted in positive engagement: Extensive consultation with key stakeholders has ensured that the voice of women, as well as men, has informed every step of project development; from site selection for community and public sanitation facilities to the initial design and subsequent revision of designs for both CSF and PSF. Persons living with disability have played a key role in sight inspections to ensure that facilities are fully accessible.
- (v) Need for more realistic employment targets: Whilst the project and contractors could be more proactive in engaging women in employment, there were challenges in finding women with the necessary technical expertise (particularly for the construction of the septage treatment facility).
- (vi) Not all of the positive outcomes are reflected in the GAP. Independent evaluation found that at the community level women and girls highlighted the benefits of nutrition information delivered by the NGO. Women in the sanitation committees noted that they learned the importance of breastfeeding a baby until six months and that this has resulted in more women breastfeeding for longer.
- (vii) Importance of monitoring unintended consequences for women – particularly for women who are working in non-traditional roles. A number of verbal and physical abuse cases towards women traffic controllers were logged. The project and VPMU supported the coordination of a response and is continuing to work with the police to address this.

11. These challenges underline the need for: (i) better gender analysis during project preparation in order to develop GAPs that are aligned with project outcome and reflective of what is culturally appropriate and feasible; (ii) better ongoing monitoring of GAP implementation and support to project teams to regularly collect sex-disaggregated data and address challenges to meeting GAP targets and activities during project implementation; (iii) continued understanding of, and engagement with, existing community structures, including women's groups and youth groups, to gain support for the project and to ensure parallel structures are not created inadvertently; (iv) working closely with contractors to ensure that they are delivering on GAP commitments; and (v) ensuring budget for evaluation which could highlight positive outcomes for women and girls not necessarily captured by monitoring the GAP.

STATUS OF COMPLIANCE WITH LOAN AND GRANT COVENANTS

Loan 2832-VAN(SF)

Schedule	Para No.	Description	Remarks/Issues
III	3.01	The Borrower shall cause the proceeds of the Loan to be applied to the financing of expenditures on the Project in accordance with the provisions of this Loan Agreement.	Complied with
III	3.03	Except as ADB may otherwise agree, the Borrower shall procure, or cause to be procured, the items of expenditure to be financed out of the proceeds of the Loan in accordance with the provisions of Schedule 4 to this Loan Agreement.	Complied with
III	3.04	Except as ADB may otherwise agree, the Borrower shall cause all items of expenditure financed out of the proceeds of the Loan to be used exclusively in the carrying out of the Project.	Complied with
IV	4.02(a)	Section 4.02. (a) The Borrower shall (i) maintain, or cause to be maintained, separate accounts for the Project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB; (iii) furnish to ADB, as soon as available but in any event not later than 6 months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Loan proceeds and compliance with the financial covenants of this Loan Agreement as well as on the use of the procedures for imprest account), all in the English language; and (iv) furnish to ADB such other information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.	Partially complied with. The 2013 - 2018 accounts were audited and submitted to ADB. 2019 accounts auditing was pending for submission. ADB is following up with GOV
IV	4.02(b)	The Borrower shall enable ADB, upon ADB's request, to discuss the Borrower's financial statements for the Project and its financial affairs related to the Project from time to time with the auditors appointed by the Borrower pursuant to subsection (a) hereinabove, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB, provided that any such discussion shall be conducted only in the presence of an authorized officer of the Borrower unless the Borrower shall otherwise agree.	Complied with
IV	4.03	The Borrower shall enable ADB's representatives to inspect the Project, the Goods and Works, and any relevant records and documents.	Complied with.

Schedule	Para No.	Description	Remarks/Issues
3	6	Except as ADB may otherwise agree, the Borrower shall establish immediately after the Effective Date, an imprest account at the Reserve Bank. The imprest account shall be established, managed, replenished and liquidated in accordance with the Loan Disbursement Handbook, and detailed arrangements agreed upon between the Borrower and ADB. The imprest account shall only be used for the purposes of the Project. The currency of the imprest account shall be the Dollar. Except as ADB may otherwise agree, the ceiling for the imprest account shall not exceed the lower of (a) the estimated expenditure to be financed from the imprest account for the following 6 months of Project implementation, or (b) \$100,000.	With ADB's agreement, the government opened one imprest account for the project.
4	5	Domestic Preference The Borrower may grant a margin of preference in the evaluation of bids under international competitive bidding in accordance with paragraphs 2.55(a) and 2.56 of the Procurement Guidelines for domestically manufactured Goods.	Complied with
4	6	National Competitive Bidding The Borrower and ADB shall ensure that, prior to the commencement of any procurement activity under national competitive bidding (NCB), the Borrower's national competitive bidding procedures are consistent with the Procurement Guidelines. Any modifications or clarifications to such procedures agreed between the Borrower and ADB shall be set out in the Procurement Plan. Any subsequent change to the agreed modifications and clarifications shall become effective only after approval of such change by the Borrower and ADB.	Complied with
4	7	The Borrower shall not award any Work contracts which involves environmental impacts until: (i) the relevant environment authority of the Borrower has granted the final approval of the IEE; and; (ii) the Borrower has incorporated the relevant provisions from the EMP into the Works contract.	Complied with
4	8	The Borrower shall not award any Works contract which involves involuntary resettlement impacts, until the Borrower has prepared and submitted to ADB the final RP based on the Project's detailed design, and obtained ADB's clearance of such RP.	Complied with
4	9	The Borrower shall not award any Works contract under Parts 1, 2 and 3 of the Project until it has obtained approval of ADB to the subprojects thereunder based on Project's detailed design.	Complied with
4	10	Except as ADB may otherwise agree, and except as set forth in the paragraph below, and in the Procurement Plan, the Borrower shall apply quality- and cost-based selection for selecting and engaging Consulting Services.	Complied with
4	11	The Borrower shall recruit the individual consultants for a part of the services under Part 5 of the Project in accordance with procedures acceptable to ADB for recruiting individual consultants.	Complied with

Schedule	Para No.	Description	Remarks/Issues
4	12	(i) The Borrower shall ensure that all Goods and Works procured (including without limitation all computer hardware, software and systems, whether separately procured or incorporated within other goods and services procured) do not violate or infringe any industrial property or intellectual property right or claim of any third party. (ii) The Borrower shall ensure that all contracts for the procurement of Goods and Works contain appropriate representations, warranties and, if appropriate, indemnities from the contractor or supplier with respect to the matters referred to in subparagraph (a) of this paragraph.	Complied with
4	13	The Borrower shall ensure that all ADB-financed contracts with consultants contain appropriate representations, warranties and, if appropriate, indemnities from the consultants to ensure that the Consulting Services provided do not violate or infringe any industrial property or intellectual property right or claim of any third party.	Complied with
5	1	Implementation Arrangement: The Borrower shall ensure that the Project is implemented in accordance with the detailed arrangements set forth in the PAM. Any subsequent change to the PAM shall become effective only after approval of such change by the Borrower and ADB. In the event of any discrepancy between the PAM and the Loan Agreement, the provisions of this Loan Agreement shall prevail.	Complied with
5	2	The Borrower shall ensure sustainable operation and maintenance of infrastructure and facilities financed under the Project by (a) providing increased recurrent budgetary resources for such operation and maintenance; (b) improving the revenue collection system; (c) providing training to the agencies involved in revenue collection; and (d) maximizing private sector participation in operation and maintenance.	Partially complied with. O&M of the community water and sanitation facilities and the public toilets are largely sustainable. (a) Actual recurrent budgetary expenditure for other O&M fell short of that required and allocated. (b) and (c) Improved revenue collection and

Schedule	Para No.	Description	Remarks/Issues
			training were not provided. (d) There has been private sector participation in the O&M of the CSFs and toilets but not the other components as yet.
5	3	Within 6 months of the Effective Date, the Borrower shall establish the Project performance and monitoring system acceptable to ADB.	Complied with
5	4	Upon completion of detailed design, the Borrower shall obtain prior approvals of ADB in respect of final subprojects under Parts 1, 2 and 3 of the Project.	Complied with.
5	5	Environment The Borrower shall ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the IEE, the EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	Complied with
5	6	Land Acquisition and Involuntary Resettlement The Borrower shall ensure that all land and all rights-of-way required for the Project are made available to the Works contractor in accordance with the schedule agreed under the related Works contract and all land acquisition and resettlement activities are implemented in compliance with (a) all applicable laws and regulations of the Borrower relating to land acquisition and involuntary resettlement; (b) the Involuntary Resettlement Safeguards; (c) the RF; and (d) all measures and requirements set forth in the RP, and any corrective or preventative actions set forth in the Safeguards Monitoring Report.	Complied with
5	7	Without limiting the application of the Involuntary Resettlement Safeguards, the RF or the RP, the Borrower shall ensure that no physical or economic displacement takes place in connection with the Project until: (i) compensation and other entitlements have been provided to affected people in accordance with the RP; and (ii) a comprehensive income and livelihood restoration program has been established in accordance with the RP.	Complied with.

Schedule	Para No.	Description	Remarks/Issues
5	8	Human and Financial Resources to Implement Safeguards Requirements The Borrower shall make available necessary budgetary and human resources to fully implement the EMP and the RP.	Complied with
5	9	Safeguards-Related Provisions in Bidding Documents and Works Contracts The Borrower shall ensure that all bidding documents and contracts for Works contain provisions that require contractors to: (i) comply with the measures relevant to the contractor set forth in the IEE, the EMP and the RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set forth in a Safeguards Monitoring Report; (ii) make available a budget for all such environmental and social measures; (iii) provide the Borrower with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP and the RP; (iv) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and (v) reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	Complied with
5	10	Safeguards Monitoring and Reporting The Borrower shall do the following: (i) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission; (ii) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP and the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; (iii) in the event unexpected significant safeguard impacts are identified, promptly engage qualified and experienced external expert or agency under a selection process and terms of reference acceptable to ADB, to verify information produced through the Project monitoring process, and facilitate the carrying out of any verification activities by such external experts; and (iv) report any actual or potential breach of compliance with the measures and requirements set forth in the EMP or the RP promptly after becoming aware of the breach.	Complied with
5	11	Prohibited List of Investments: The Borrower shall ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	Complied with
5	12	Labor Standards: The Borrower shall ensure that all Works contracts include provisions requiring contractors: (a) to comply with all workplace occupational safety norms, applicable local labor laws and core labor standards; (b) not to employ child labor in any aspect of their activities; (c) to provide appropriate facilities for children in construction campsites if such	Complied with. ADB received complaint indicating two local contractors

Schedule	Para No.	Description	Remarks/Issues
		sites are established; and (d) not to differentiate wages between men and women for work of equal value.	did not comply with Vanuatu labor laws related to payments. With ADB's help, the government conducted the investigation and was unable to substantiate the allegation.
5	13	Gender and Development: The Borrower shall ensure that (a) the GAP is implemented in accordance with its terms; (b) the bidding documents include relevant provisions for contractors to comply with the measures set forth in the GAP; (c) adequate resources are allocated for the implementation of the GAP; and (d) key gender outcome and output targets are monitored regularly and achieved.	Complied with
5	14	Governance and Anticorruption: The Borrower shall (a) comply with ADB's Anticorruption Policy (1998, as amended to date) and acknowledge that ADB reserves the right to investigate directly, or through its agents, any alleged corrupt, fraudulent, collusive or coercive practice relating to the Project; and (b) cooperate with any such investigation and extend all necessary assistance for satisfactory completion of such investigation.	Complied with
5	15	The Borrower shall ensure that the anticorruption provisions acceptable to ADB are included in all bidding documents and contracts, including provisions specifying the right of ADB to audit and examine the records and accounts of the executing and implementing agencies and all contractors, suppliers, consultants, and other service providers as they relate to the Project.	Complied with
5	16	The Borrower shall facilitate financial audit of the Project by its Auditor General's office, and also allow random and independent spot checks of implementation and fund flow by ADB. The Borrower shall maintain a Project website and update it regularly to include (a) bidding procedures, bidders, and contract awards; (b) use of the funds disbursed under the Project; and (c) the physical progress of the Project.	Complied with
5	17	Within 6 months of the Effective Date, the Borrower shall prepare an anticorruption strategy and action plan to cover agencies involved in tender evaluation and contractor selection processes and establish a complaints mechanism. The Borrower shall support anticorruption efforts through consultations on major Project decisions, subproject selection and implementation.	Complied with

Schedule	Para No.	Description	Remarks/Issues
5	18	Within 18 months of the Effective Date, the Borrower shall (a) draft and submit the following legislations to its parliament: the Public Road Act, Traffic Management Act, and Building Standards Control Act; and (b) cause its office of the auditor-general to undertake performance audit of its public works department (PWD).	<p>Partially (two thirds) complied.</p> <p>The Public Road Act and the Building Standards Control Act were approved by Parliament in December 2013 and January 2014 respectively, in a timely manner.</p> <p>The performance audit of PWD was completed timely in August 2015.</p> <p>The Traffic Management Bill was not presented to Parliament as GOV issued a change in regulations in 2018 instead.</p>

Grant 0275-VAN(EF), Grant 0276-VAN(EF), and Grant 0526-VAN(EF)

Schedule	Para No.	Description	Remarks/Issues
III	3.01	The Recipient shall cause the proceeds of the Grant to be applied to the financing of expenditures on the Project in accordance with the provisions of this Grant Agreement and the Loan Agreement.	Complied with
III	3.02	Except as ADB may otherwise agree, the Recipient shall procure, or cause to be procured, items of expenditure to be financed out of the proceeds of the Grant in accordance with the provisions of Schedule 4 to the Loan Agreement.	Complied with
IV	4.02	The Recipient shall enable ADB's representatives to inspect the Project, the Goods and Works, and any relevant records and documents.	Complied with
IV	4.03(a)	The Recipient shall (i) maintain, or cause to be maintained, separate accounts for the Project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB; (iii) furnish to ADB, as soon as available but in any event not later than 6 months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Grant proceeds and compliance with the financial covenants of this Grant Agreement as well as on the use of the procedures for imprest account), all in the English language; and (iv) furnish to ADB such other information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.	Complied with
I V	4.03(b)	The Recipient shall enable ADB, upon ADB's request, to discuss the Recipient's financial statements for the Project and its financial affairs related to the Project from time to time with the auditors appointed by the Recipient pursuant to subsection (a) hereinabove, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB, provided that any such discussion shall be conducted only in the presence of an authorized officer of the Recipient unless the Recipient shall otherwise agree.	Complied with

Schedule	Para No.	Description	Remarks/Issues
IV	4.04	The Recipient shall (a) ensure that the proceeds of the Grant are used for the purposes of the Project and not diverted for any other purpose; (b) promptly inform ADB if it becomes aware that the proceeds of the Grant are being or have been used for the purpose of any payment to a person or entity, or for import of goods, if such payment or import is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations; and (c) take necessary measures to ensure that entities to which the Recipient makes the proceeds of the Grant available comply with the provisions of this paragraph.	Complied with
1	5	Except as ADB may otherwise agree, the Borrower shall establish immediately after the Effective Date, an imprest account at the Reserve Bank. The imprest account shall be established, managed, replenished and liquidated in accordance with the Loan Disbursement Handbook, and detailed arrangements agreed upon between the Borrower and ADB. The imprest account shall only be used for the purposes of the Project. The currency of the imprest account shall be the Dollar. Except as ADB may otherwise agree, the ceiling for the imprest account shall not exceed the lower of (a) the estimated expenditure to be financed from the imprest account for the following 6 months of Project implementation, or (b) \$100,000.	Complied. with ADB's agreement, the government opened one project imprest account for GF0276-VAN.

ECONOMIC REEVALUATION OF THE PROJECT

A. Objective of the Reevaluation

1. This appendix re-estimates the economic internal rates of return (EIRRs) of the (i) drainage and road improvements, (ii) sanitation improvements, (iii) hygiene improvements, and (iv) overall project. Due to lack of background information and post-project data precluding a full re-assessment of economic viability at closure, the assessments presented here are treated as purely indicative based on adjustments to the assumptions used at appraisal and information from other data sources that can help derive likely benefit estimates.

B. Methodology

2. Costs and benefits were evaluated following Asian Development Bank guidelines for the economic analysis of investment projects. The reevaluation of economic viability updates the project economic analyses, as revised during the major change in scope, with final costs and close-of-project specifications. Benefit estimates were updated to 2019 prices, and adjusted to clarify underlying assumptions where possible and remove possible double-counting.

3. Economic costs and benefits were derived from financial ones by excluding interest during implementation (there were no taxes, duties, or physical contingencies indicated in the costs at closure). The calculations used the domestic price numeraire, the shadow exchange rate factor of 1.12, and shadow wage rate factors of 1.0 (skilled labor) and 0.6 (unskilled), all of which were retained from both the economic analyses at appraisal and during the major change in scope. Investment costs for consulting services and equipment were incorporated into the cost-benefit calculations by being distributed across the three major components based on their respective proportions of total civil works costs.

C. Results of the Economic Reevaluation

4. Improvements to the drainage and road systems. The drainage subprojects were seen to reduce damage to homes and gardens. The economic analysis at appraisal estimated that about 20% of properties need repairs after flooding brought about by heavy rain events occurring once a month. It also assumed that drainage improvements would reduce vehicle diversion costs (from detouring) and lost productive time due to road inundations, but this reevaluation excludes these to avoid possible redundancy with benefits from road improvements, and retains only 50% of the estimated drainage benefit (updated to 2019 prices).

5. The road subprojects were seen to reduce vehicle operating costs (VOCs) and productive time lost, derived from traffic forecasts, estimated VOCs, and official average wage rates. The economic analysis at appraisal developed traffic forecasts based on official registration office records, adjusted upwards to account for higher volumes observed in Port Vila's central business district and peri-urban area; projected normal traffic to grow by 3.0% a year (a function of tourist arrivals, growth in population and per capita incomes); and assumed an additional 0.5% growth from generated and induced traffic. Further, the analysis at appraisal used field observation and consultation to estimate VOC for vehicle type and road usage by type of road or area; and estimated the value of time savings based on average time saved per kilometer (km) of road usage, average occupancy per vehicle, average commuting distance, and weighted average wage rate. This reevaluation retains these assumptions.

6. O&M for the drainage subprojects was estimated on a per-kilometer basis based on available information during the major change in scope, and updated to 2019 prices. O&M for the road subprojects were estimated by road type. For asphaltic concrete and double bitumen-sealed roads, civil works costs were first estimated on a per-kilometer basis, again based on available information during the major change in scope, and adjusted to 2019 prices and the actual length of roads constructed. O&M for asphaltic concrete roads was assumed to be 1% of the resulting estimated civil works cost until Year 14 of the evaluation period, increasing to 5% beginning Year 15. O&M for double bitumen-sealed roads was assumed to be 2% of the civil works cost throughout the evaluation period, except in Years 7, 14, and 21 where it would be 5%. Concrete roads were assumed to not require any maintenance during their 50-year useful life.

7. The drainage and roads component was completed as planned and under budget, with civil works costing \$19.0 million or Vt2.2 billion, in economic terms, at closure versus \$33.6 million (Vt3.6 billion) as of major change in scope. Besides realizing significant cost savings, an innovative design approach allowed the project to construct or rehabilitate 21.8 km of drainage versus the planned 14.5 km including extensive additional roadside drainage not targeted during the major change in scope, which increased estimated benefits from drainage works by 150.3%. Road improvements were also implemented largely as planned, but because there is only anecdotal evidence that travel times have decreased, benefits from road improvements were conservatively assumed to be 50% of the initial estimates. This reevaluation estimates EIRR at closure to be 12.4% (Table 1), an improvement from the 9.8% estimated during the major change in scope because investment costs were significantly lower and offset the reduction in estimated benefits. The EIRR at appraisal was 22.1%.

Table A9.1: Drainage and Road Improvements: Close-of-Project Cost-Benefit Analysis
(Vt million)

Year	Costs			Benefits			Net benefits	
	Investment	O&M	Total	Drainage	Road			Total
					VOC savings	Travel time savings		
2013	46.7		46.7				(46.7)	
2014	139.5		139.5				(139.5)	
2015	131.3		131.3				(131.3)	
2016	466.4		66.4				(466.4)	
2017	682.3		682.3				(682.3)	
2018	536.7	0.5	537.2	11.5		11.5	(525.8)	
2019	168.2	1.6	169.9	70.2		70.2	(99.6)	
2020		19.0	19.0	107.8	17.6	18.3	143.6	124.7
2021		19.0	19.0	146.9	36.2	37.8	221.0	202.0
2022		19.0	19.0	187.8	56.0	58.5	302.3	283.3
2023		19.0	19.0	191.9	77.1	80.5	349.5	330.6
2024		19.0	19.0	196.3	99.5	103.9	399.7	380.7
2025		19.0	19.0	200.7	102.4	107.1	410.2	391.2
2026		29.2	29.2	205.2	105.5	110.2	420.9	391.7
2027		19.0	19.0	209.8	108.7	113.5	432.1	413.1
2028		19.0	19.0	214.6	111.9	117.0	443.5	424.5
2029		19.0	19.0	219.4	115.3	120.4	455.1	436.1
2030		19.0	19.0	224.4	118.8	124.1	467.2	448.2
2031		19.0	19.0	229.4	122.3	127.8	479.5	460.5

Year	Costs			Benefits			Net benefits	
	Investment	O&M	Total	Drainage	Road			Total
					VOC savings	Travel time savings		
2032		19.0	19.0	234.6	126.0	131.6	492.2	473.2
2033		29.2	29.2	239.8	129.8	135.6	505.2	475.9
2034		61.0	61.0	245.3	133.6	139.7	518.6	457.7
2035		19.0	19.0	250.8	137.7	143.8	532.3	513.4
2036		19.0	19.0	256.5	141.8	48.2	546.5	527.6
2037		19.0	19.0	262.3	146.0	152.6	560.9	541.9
2038		19.0	19.0	268.2	150.4	157.2	575.8	556.9
2039		19.0	19.0	274.3	155.0	161.9	591.2	572.3
2040		29.2	29.2	280.5	159.6	166.7	606.8	577.6
2041		19.0	19.0	286.9	164.4	171.8	623.0	604.1
2042		19.0	19.0	293.3	169.3	176.9	639.6	620.6
2043		19.0	19.0	299.9	174.4	182.2	656.6	637.6
2044		19.0	19.0	306.7	179.6	187.7	674.0	655.1
							EIRR @ 12%	12.4%
							ENPV @ 12%	51.0

EIRR = economic internal rate of return, ENPV = economic net present value, O&M = operation and maintenance, VOC = vehicle operating cost, Vt = vatu.

Source: Asian Development Bank.

8. Sanitation and hygiene improvements. The viability of these components is revisited in tandem because of the very strong linkage between their respective benefits, which could result in double-counting if viability was assessed separately, and to refine benefit estimates made at appraisal. Both components are seen to help reduce medical expenditures and absenteeism from work. Based on 2010 household income and expenditure survey data, this reevaluation estimates the average urban resident to spend Vt3.60 (\$0.03) a day on medical care; of this, 6.4% is assumed to be for waterborne illnesses (the proportion of disability-adjusted life-years—years lost to ill-health, disability, or early death—related to waterborne illness based on latest available estimates from the World Health Organization). It retains the assumptions made at appraisal that about 25% of the population is vulnerable and experiences an average of 5 days of illness a year due to poor sanitation, and that the prevailing official average wage rate (Vt1,056.00 or \$9.30 per day, in economic terms) is used to estimate the cost of absenteeism. This reevaluation also assumes that 60.3% of the population is of working age, and that the beneficiaries are equivalent to 50.0% of the population in the greater Port Vila area. The population in Port Vila was 50,944 persons in 2016, growing by 2.6% a year, based on information from the 2016 Mini-Census conducted after Cyclone Pam. Further, 35% of medical costs, and 30% of absenteeism costs, are assumed to be avoided under the project.

9. Annual O&M for the sanitation component was estimated to be equivalent to 2% of the civil works cost throughout the evaluation period. Annual O&M for the hygiene component was estimated to be equivalent to 0.5% of the civil works cost throughout the evaluation period.

10. The sanitation component was completed under budget and on schedule. Economic cost of civil works is estimated at \$708,480 (Vt80.8 million) at closure compared to \$924,457 (Vt100.7 million) during the major change in scope. The hygiene component was also completed under budget, with civil works estimated at \$821,520 (Vt93.7 million) in economic terms at closure

compared with \$1.0 million (Vt112.2 million) during the major change in scope. The combined EIRR for these components is estimated at 14.2% (Table 2). The EIRR for the sanitation component was estimated at 28.1% at appraisal, increasing to 66.2% during the major change in scope due to significantly lower investment costs and inflation-related adjustments to estimated benefits. The EIRR for the hygiene component was estimated at 18.8% at appraisal, increasing slightly to 24.3% as of the major change in scope also due to adjusted benefit estimates.

Table A9.2: Sanitation and Hygiene Improvements: Close-of-Project Cost-Benefit Analysis
(Vt million)

Year	Costs				Total	Benefits			Net benefits
	Investment		O&M			Medical cost savings	Avoided productivity loss	Total	
	Sanitation	Hygiene	Sanitation	Hygiene					
2013	1.7	2.0			3.8				(3.8)
2014	5.2	6.0			11.2				(11.2)
2015	4.9	5.7			10.6				(10.6)
2016	42.8	22.4			65.2				(65.2)
2017	16.9	20.4	0.5	0.5	38.4	0.001	7.5	7.5	(30.9)
2018	9.1	35.1	1.6	0.5	46.3	0.001	12.8	12.8	(33.5)
2019	0.2	2.1	1.6	0.5	4.4	0.003	26.3	26.3	21.9
2020			1.6	0.5	2.1	0.003	27.0	27.0	24.9
2021			1.6	0.5	2.1	0.003	27.7	27.7	25.6
2022			1.6	0.5	2.1	0.003	28.4	28.4	26.3
2023			1.6	0.5	2.1	0.003	29.1	29.1	27.0
2024			1.6	0.5	2.1	0.003	29.9	29.9	27.8
2025			1.6	0.5	2.1	0.003	30.7	30.7	28.6
2026			1.6	0.5	2.1	0.003	31.4	31.5	29.4
2027			1.6	0.5	2.1	0.003	32.3	32.3	30.2
2028			1.6	0.5	2.1	0.003	33.1	33.1	31.0
2029			1.6	0.5	2.1	0.004	34.0	34.0	31.9
2030			1.6	0.5	2.1	0.004	34.8	34.9	32.8
2031			1.6	0.5	2.1	0.004	35.8	35.8	33.7
2032			1.6	0.5	2.1	0.004	36.7	36.7	34.6
2033			1.6	0.5	2.1	0.004	37.6	37.6	35.6
2034			1.6	0.5	2.1	0.004	38.6	38.6	36.5
2035			1.6	0.5	2.1	0.004	39.6	39.6	37.5
2036			1.6	0.5	2.1	0.004	40.7	40.7	38.6
2037			1.6	0.5	2.1	0.004	41.7	41.7	39.6
2038			1.6	0.5	2.1	0.005	42.8	42.8	40.7
2039			1.6	0.5	2.1	0.005	43.9	43.9	41.8
2040			1.6	0.5	2.1	0.005	45.0	45.1	43.0
2041			1.6	0.5	2.1	0.005	46.2	46.2	44.1

Year	Costs					Benefits			Net benefits
	Investment		O&M		Total	Medical cost savings	Avoided productivity loss	Total	
	Sanitation	Hygiene	Sanitation	Hygiene					
2042			1.6	0.5	2.1	0.005	47.4	47.4	45.3
2043			1.6	0.5	2.1	0.005	48.7	48.7	46.6
2044			1.6	0.5	2.1	0.005	49.9	49.9	47.8
								EIRR @ 12%	14.2%
								ENPV @ 12%	22.0

EIRR = economic internal rate of return, ENPV = economic net present value, O&M = operation and maintenance, Vt = vatu.
Source: Asian Development Bank.

11. Overall project. This reevaluation estimates EIRR for all components to be 12.5% (Table 3) based on the 12.0% discount used during appraisal and the major change in scope. Overall EIRR at appraisal was estimated at 23.4%, and fell to 11.0% during the major change in scope when investment costs were raised for the sanitation and especially the drainage/roads component.. Viability improved under this reevaluation due to significant downward adjustments in investment costs.

Table A9.3: Overall Close-of-Project Cost-Benefit Analysis
(Vt million)

Year	Costs			Benefits	Net benefits
	Investment	O&M	Total		
2013	50.4	-	50.4	-	(50.4)
2014	150.7	-	150.7	-	(150.7)
2015	141.8	-	141.8	-	(141.8)
2016	531.7	-	531.7	-	(531.7)
2017	719.7	1.0	720.7	7.5	(713.2)
2018	580.9	2.6	583.6	24.3	(559.3)
2019	170.5	3.7	174.2	96.5	(77.7)
2020	-	21.0	21.0	170.6	149.6
2021	-	21.0	21.0	248.6	227.6
2022	-	21.0	21.0	330.7	309.6
2023	-	21.0	21.0	378.7	357.6
2024	-	21.0	21.0	429.6	408.5
2025	-	21.0	21.0	440.8	419.8
2026	-	31.3	31.3	452.4	421.1
2027	-	21.0	21.0	464.3	443.3
2028	-	21.0	21.0	476.6	455.5
2029	-	21.0	21.0	489.0	468.0
2030	-	21.0	21.0	502.0	481.0
2031	-	21.0	21.0	515.2	494.2
2032	-	21.0	21.0	528.9	507.8
2033	-	31.3	31.3	542.8	511.5
2034	-	63.0	63.0	557.3	494.2
2035	-	21.0	21.0	572.0	550.9
2036	-	21.0	21.0	587.2	566.1
2037	-	21.0	21.0	602.6	581.6
2038	-	21.0	21.0	618.6	597.6
2039	-	21.0	21.0	635.1	614.1
2040	-	31.3	31.3	651.9	620.6
2041	-	21.0	21.0	669.2	648.2
2042	-	21.0	21.0	687.0	665.9
2043	-	21.0	21.0	705.2	684.2
2044	-	21.0	21.0	724.0	702.9
EIRR @ 12%					12.5%
ENPV @ 12%					73.0

EIRR = economic internal rate of return, ENPV = economic net present value, Vt = vatu.

Note: Total investment costs include equipment and consulting services.

Source: Asian Development Bank.

CONTRIBUTION TO THE ADB RESULTS FRAMEWORK

Results Framework Indicators (Level 2)	Targets	Achievements
Greenhouse gas emission reduction (tCO ² – equivalent per year)	4,200	Not estimated
National highways, provincial, district, and rural roads built or upgraded (km)	22	12.1
Beneficiaries from road projects (number)	44,000	50,000 (Port Vila 2016 Mini Census population)
Wastewater treatment capacity added (m ³ per day)	22.5	27.7
Households served with improved sanitation	4,549	10,400 (Shefa Province Mini-Census 2016)
Land improved through new drainage (square kilometers)	3	Targeted 3 catchments and implemented 6