ADB

Report and Recommendation of the President to the Board of Directors

Project Number: 51271-001
September 2019

Proposed Loan, Grant, and Administration of Grant Solomon Islands: Urban Water Supply and Sanitation Sector Project

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 27 August 2019)

Currency unit	–	Solomon Island dollar/s (SI$)		
SI$1.00	=	$0.125	or	€0.112
$1.00	=	SI$8.013	or	€0.901
€1.00	=	SI$8.895	or	$1.110

ABBREVIATIONS

ADB	–	Asian Development Bank
EMP	–	environmental management plan
EU	–	European Union
FIRR	–	financial internal rate of return
FNPV	–	financial net present value
GHA	–	The Greater Honiara area
km	–	kilometer
m^2	–	square meter
MLD	–	million liters per day
NRW	–	nonrevenue water
O&M	–	operation and maintenance
PAM	–	project administration manual
PMU	–	project management unit
SIWA	–	Solomon Islands Water Authority
UNICEF	–	United Nations Children's Fund

NOTE

In this report, "$" refers to United States dollars, unless otherwise stated.

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PROJECT AT A GLANCE

1. Basic Data **Project Number:** 51271-001

Project Name	Urban Water Supply and Sanitation Sector Project
Country	Solomon Islands
Borrower	Solomon Islands
Country Economic Indicators	https://www.adb.org/Documents/LinkedDocs/?id=51271-001-CEI
Portfolio at a Glance	https://www.adb.org/Documents/LinkedDocs/?id=51271-001-PortAtaGlance
Department /Division	PARD/PAUW
Executing Agency	Ministry of Finance and Treasury

2. Sector

	Subsector(s)	ADB Financing ($ million)
✓ **Water and other urban infrastructure and services**	Urban sanitation	6.53
	Urban water supply	30.47
	Total	**37.00**

3. Operational Priorities

- ✓ Addressing remaining poverty and reducing inequalities
- ✓ Accelerating progress in gender equality
- ✓ Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability
- ✓ Making cities more livable
- ✓ Strengthening governance and institutional capacity

Climate Change Information

CO_2 reduction (tons per annum)	1,450
Climate Change impact on the Project	Medium

ADB Financing

Adaptation ($ million)	6.31

Sustainable Development Goals

SDG 1.5
SDG 5.c
SDG 6.2, 6.3
SDG 10.3
SDG 13.a

Gender Equity and Mainstreaming

Effective gender mainstreaming (EGM) ✓

Poverty Targeting

Geographic Targeting ✓

4. Risk Categorization: Low

5. Safeguard Categorization **Environment:** B **Involuntary Resettlement:** B **Indigenous Peoples:** C

6. Financing

Modality and Sources	Amount ($ million)
ADB	**37.00**
Sovereign Sector grant: Asian Development Fund	9.00
Sovereign Sector (Concessional Loan): Ordinary capital resources	28.00
Cofinancing	**35.35**
European Union - Sector grant (Full ADB Administration)	20.35
World Bank - Sector loan (Not ADB Administered)	15.00
Counterpart	**20.47**
Government	9.00
Project Sponsor	11.47
Total	**92.82**

Currency of ADB Financing: US Dollar

Source: Asian Development Bank

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan and a proposed grant, both to Solomon Islands, for the Urban Water Supply and Sanitation Sector Project. The report also describes the proposed administration of a grant to be provided by the European Union (EU) for the project, and if the Board approves the proposed loan and grant, I, acting under the authority delegated to me by the Board, approve the administration of the grant.

2. The project adopts a sector approach for developing sustainable, inclusive, and climate-resilient water supply and improved sanitation in the greater Honiara area (GHA) and in five other towns of Auki, Gizo, Noro, Munda, and Tulagi in Solomon Islands.[1] The project will implement high priority components following the government's water and sanitation sector plan to increase access to piped water supply and sanitation service, especially among the poor households; reduce reliance on groundwater and rainwater harvest and ensure more efficient use of water. The project will also enhance hygiene awareness, promote water conservation and improve fecal sludge management.

II. THE PROJECT

A. Rationale

3. **Economic growth**. Solomon Islands is the third largest developing island country in Pacific with a population of around 660,000. The Asian Development Bank (ADB) recognizes Solomon Islands as a fragile and conflict-affected situation following the civil conflict from 1998 to 2003.[2] Since the end of the conflict, Solomon Islands has experienced steady economic growth. However, economic development has been largely diluted across a fast-increasing population base (more than 2% per year since 2004) and the projected 2019 per capita gross domestic product of $1,751, when adjusted for inflation, remains lower today than it was before the conflict. The United Nations classifies it as a least-developed country.[3]

4. **Vulnerability to natural hazards**. Solomon Islands is highly vulnerable to natural hazards, including tropical storms and earthquakes, and is highly susceptible to climate change impacts. Since 1930, Solomon Islands has been struck by some 71 disasters triggered by natural hazards. The Global Facility for Disaster Reduction and Recovery estimates that Solomon Islands incurs losses of $20 million annually because of earthquakes and tropical cyclones.[4] Flash flooding in April 2014, which impacted Honiara, Makira, Malaita, and the Isabel Islands, caused 47 deaths, affected some 52,000 persons, and resulted in damage and losses of $107.8 million (9.2% of gross domestic product). Honiara experienced flash flooding, which resulted in prolonged disruptions to water supply and sewerage services. Climate change models indicate a high likelihood that the frequency and intensity of extreme rainfall events will increase, and that the average duration of extreme drought could increase to 30 months or more by 2050.

5. **Urban development context**. About 152,000 (24%) of the Solomon Islands' population live in 7 urban and peri-urban areas. About one third of the urban population live in informal

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[1] Asian Development Bank (ADB) provided a technical assistance grant and project readiness financing to prepare the project. ADB. 2017. *Transaction Technical Assistance Facility (F-TRTA): Pacific Urban Development Investment Planning and Capacity Development Facility.* Manila (TA 9347-REG), and ADB. 2018.*: Proposed Project Readiness Grant to Solomon Islands for Preparing the Urban Water Supply and Sanitation Project*. Manila (G 6014-SOL).

[2] ADB. 2018. *ADB Strategy 2030 Prosperous Inclusive Resilient Sustainable Asia and the Pacific*. Manila.

[3] United Nations. *Least Developed Countries. Department of Economic and Social Affairs.* Retrieved 2018-03-02. https://www.un.org/development/desa/dpad/least-developed-country-category.html.

[4] Global Facility for Disaster Reduction and Recovery. https://www.gfdrr.org/en/solomon-islands.

settlements with a high growth. The urban households obtain their drinking water from the public water supply schemes (55%), household rainwater tanks (42%), wells and springs (1%), and other sources such as bottled water and streams (2%). Groundwater and springs are the main water source for the piped water supplies.[5] Rainwater harvesting is being increasingly utilized by households to increase access to potable water but is not secure due to seasonal rainfall patterns and more frequent droughts due to climate change. GHA, comprising the Solomon Islands capital of Honiara, and surrounding peri-urban areas is the largest urban center with a population of about 105,000 and a land area of about 133 square kilometers. Currently, about 60% of people living in GHA have access to the public water supply system and 75% have access to basic sanitation.

6. Based on medium growth projections, Solomon Islands' urban population may grow to 430,000 by 2050 while the population of GHA is expected to surpass 300,000. Urban development in Solomon Islands presents a number of challenges, including: (i) a rapid urban population growth (4.7%) which is more than double the national population growth; (ii) expansion of informal settlements; and (iii) decreasing rates of access to basic urban services such as electricity, public water supply and sanitation, solid waste collection and drainage. Investment in urban infrastructure has not been commensurate with the growing urban population and budgets for operations and maintenance have historically been inadequate. Due to lack of coordination, urban planning, management and development has been ad hoc. To better address the urban challenges facing GHA, the Government of Solomon Islands endorsed the Greater Honiara Urban Development Strategy and Action Plan in September 2018.[6] The action plan prioritizes investments to improve the coverage and quality of water supply and sanitation services for sustainable urban development and better living conditions in GHA.

7. The Solomon Islands Water Authority (SIWA), a state-owned enterprise created under the Solomon Islands Water Authority Act 1992, is mandated to develop and manage urban water supply and sewerage services in Solomon Islands. SIWA has 145 staff. It delivers water supply services to 8,000 households in GHA and 1,000 in the other three urban centers (Auki, Noro, and Tulagi). Sixty percent of water resource is from surface water springs and 40% from wellbores. SIWA also provides sewerage services in GHA to approximately 10% of the residents. GHA covers 90% of SIWA's water supply customers and all sewerage customers. Under the project, SIWA will expand its water supply operations to cover 1,200 households in both Gizo and Munda.

8. Historically, the financial management of SIWA was poor. In August 2010, the Solomon Islands Government commenced a series of reforms to strengthen SIWA. As a result, its financial position has improved following tariff adjustments in 2016 and 2018 and improved bill collection. Financial projections indicate that SIWA's financial position will continue to improve. SIWA is committed to strengthening asset management further by contributing to the project's investment costs.

9. In GHA, currently SIWA water production is 32.0 MLD and water is supplied or 22 hours per day. The water supply gap is primarily due to high non-revenue water (NRW) of 62% of water production.[7] The project will reduce NRW to 30% or less and expand the water treatment capacity to enable SIWA to expand its service from 8,000 to 14,000 households (49% to 65%) with continuous water supply in GHA. If the new water source needed for GHA is built by 2028, SIWA will continue to extend its water supply service to 95% of the GHA population by 2047.

[5] SIWA. 2017. *Social and Consumer Assessment.* Honiara.
[6] The Greater Honiara Urban Development Strategy and Action Plan was prepared by ADB assistance, (footnote 2).
[7] SIWA. 2018. *Non-Revenue Water Reduction Strategy Report*. Honiara.

10. The GHA sewage network comprises 15 discrete gravity collection systems of which 13 outfalls discharge to ocean and 2 discharge to river outfalls. The total length of the sewers is 36 kilometers serving about 1,000 households. The sewer network was constructed more than fifty years ago without adequate maintenance. The ocean outfalls have broken above the shoreline and raw sewage is discharged to beaches and rivers, creating many environmental and health hazards. Through the project, SIWA will upgrade and join sewer systems to reduce the outfalls. It will expand its sewage network coverage to at least 4,000 households (20% of residential) and most of non-residential properties. The remaining households in the city are served by on-site sanitation systems (mainly septic tanks and pit latrines), which are regulated by Honiara City Council. Septic tank desludging is provided by the private sector on demand basis. Fecal sludge collected from septic tanks is currently transported to a dump site or illegally dumped elsewhere, leading to health and environmental hazards. There is urgent need to improve the septic management.

11. **Need for a sector approach**.[8] SIWA has prepared a comprehensive strategic sector plan, the Solomon Water 30 Year Strategic Plan, and a 5 Year Action Plan.[9] The project will be implemented through a sector modality and will be implemented in GHA and five other urban towns. Feasibility studies and due diligence review for selected subprojects in GHA have been conducted.[10] The detailed engineering design is ongoing. Additional subprojects will be confirmed and prepared during the implementation stage based on selection criteria and readiness.[11] The project is aligned with the government's Medium Term Strategy Objective 3: All Solomon Islanders have access to quality social services, including education and health, and will assist Solomon Islands to meet Goal 6 of the Sustainable Development Goals. The project is also aligned with ADB's Strategy 2030, specifically the differentiated approach for fragile and conflict affected situations, small island developing states and its operational priorities of making cities more livable and tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability. Climate resilience and climate change adaptation costs are estimated to be $7.7 million. ADB is administering 79.3% of the adaptation costs. Details are in the climate risk assessment.[12]

B. Project Description

12. The project is aligned with the following impact: access to safe water and improved sanitation in urban areas increased.[13] The project will have the following outcome: efficiency, climate change and disaster resiliency, and sustainability of safe water and sanitation in GHA and other five urban areas improved.[14]

13. **Output 1: Urban water supplies are continuous and safe**. Selected subprojects in this output are located in GHA and will: (i) expand the surface water intake with additional 5 MLD, upgrade water treatment plant capacity in Kongulai (15 MLD), (ii) build new 11 km treated water trunk mains in Mataniko and White River areas, (iii) build two new reservoirs (12 million liters). Additional subprojects include (i) leak detection and repair including rehabilitation of 10km water pipes, expansion 70km new water pipes in GHA, (ii) upgrading water systems in Auki, Noro, and

[8] Sector assessment summary (accessible from the list of linked documents in Appendix 2).
[9] SIWA. 2017. *Solomon Water 30 Year Strategic Plan*. Honiara. SIWA. 2017. *Solomon Water 5 Year Action Plan*. Honiara.
[10] The cost estimate of the selected subprojects is $44.3 million (excluding taxes and duties), representing 48% of estimated project cost.
[11] Subproject Selection Criteria (accessible from the list of linked documents in Appendix 2).
[12] Climate risk assessment (accessible from the list of linked documents in Appendix 2).
[13] Government of Solomon Islands. 2016. *Medium-Term Development Plan 2016–2020.* Honiara.
[14] The design and monitoring framework is in Appendix 1.

Tulagi, (iii) building new water systems in Gizo and Munda; and (iv) building new metered connections to the households.[15] Prepayment water meters will be installed on the new and the existing connections.

14. **Output 2: Urban sanitation services are effective, efficient, and safe in GHA**. Selected subprojects in this output will: (i) rehabilitate and upgrade three ocean outfalls and build a new ocean outfall, (ii) build six new sewage pump stations and rehabilitate both King George VI and Point Cruz sewage pump stations, and (iii) build new septage treatment facility (60 m^3/day). The additional subproject will expand sewer systems by 7km to connect 3000 new households.

15. **Output 3: Enhanced and sustained awareness and behavior of hygiene and water conservation in GHA and five towns**. The subproject in this output is selected. It will design and deliver a gender-sensitive education program to raise community awareness about water conservation, environmental protection, and hygiene practices including informal settlements (at least 50% are women). The costs of delivering water supply and sanitation services and the need for water and sanitation tariffs will be highlighted. Menstrual hygiene management training and products would be provided to women and girls.

16. **Output 4: Solomon Islands Water Authority is financially and technically sustainable**. The subprojects in this output are selected. They will: (i) prepare and implement financial management policies including tariff management framework and tariff review process, among others; (ii) design and implement capacity building programs for SIWA staff including the technical training and on-the-job training; (iii) design and implement preventative maintenance programs and asset management; (iv) expand SIWA's telemetry system; and (v) introduce and implement SIWA personnel incentive schemes. Since SIWA is responsible for all urban water supply and sewage service, Output 4 will support SIWA to continue the recovery of its annual operations and maintenance costs, asset depreciation costs, and debt servicing costs.

C. Value Added by ADB

17. ADB's engagement in Solomon Islands' water and sanitation sector adds value in several areas, including (i) bringing in extensive Pacific developing member country experience in water and sanitation infrastructure investments and associated technical assistance, (ii) providing best practices for water utility institutional strengthening and capacity building, (iii) expanding services in low-income and informal areas, (iv) cost-effective citywide fecal sludge management, and (v) helping the government and SIWA to address project environmental and social safeguard issues. ADB provided technical assistance to support project preparation and also provided a $3 million project readiness facility grant that finances detailed engineering designs and strengthens the capacity of SIWA and the project management unit (PMU). Project design reflects lessons from previous relevant ADB and development partner sector operations in Pacific developing member countries. Key lessons include (i) improving the project design and ensuring adequate technical understanding of the factors affecting the project, such as water source availability and cost estimation, (ii) prioritized investment should be more focused to avoid dilution of resources, and (iii) urban service demand and willingness to pay must be ensured.

[15] New metered connections will include 6,000 in GHA, 100 in Auki, 1,000 in Gizo, 100 in Noro, 200 in Munda, and 100 in Tulagi. 2019 baseline: GHA: 8,000, Auki: 500, Gizo: 0, Munda: 0, Noro: 400, and Tulagi: 100.

D. Summary Cost Estimates and Financing Plan

18. The project is estimated to cost $92.82 million (Table 1). Detailed cost estimates by expenditure category and by financier are in the project administration manual (PAM).[16] The government has requested (i) a concessional loan of $28.00 million from ADB's ordinary capital resources and (ii) a grant not exceeding $9.00 million from ADB's Special Funds resources (Asian Development Fund) to help finance the project. The loan will have a 32-year term, including a grace period of 8 years; an interest rate of 1.0% per year during the grace period and 1.5% per year thereafter; and such other terms and conditions set forth in the draft loan and project agreements. The government has also applied to the EU for a grant in the amount of €18.00 million, to be fully administered by ADB, to help finance the project. EU cofinancing of the project will be on a pro rata basis. The World Bank will also provide a concessional loan of $15.00 million toward the costs of the project on a joint collaborative basis. The government will contribute $11.47 million equivalent through the exemption of taxes and duties and SIWA will contribute $9.00 million equivalent toward the project cost. The government will relend the ADB and World Bank loans funds to SIWA on terms acceptable to ADB and World Bank. The government will on-grant the grant proceeds to SIWA to support its move towards a sustainable financial position. The summary financing plan is in Table 2.

Table 1: Summary Cost Estimates

($ million)

Item		Amount[a]
A.	**Base Cost**[b]	
	1. Continuous and safe urban water supplies	53.15
	2. Effective, efficient, and safe urban sanitation services in GHA	20.58
	3. Enhanced and sustained awareness of hygiene and water conservation in GHA and five other towns	2.53
	4. Solomon Islands Water Authority is financially and technically sustainable	3.48
	Subtotal (A)	**79.75**
B.	**Contingencies**[c]	**12.01**
C.	**Financial Charges During Implementation**[d]	**1.06**
	Total (A+B+C)	**92.82**

Note: Numbers may not sum precisely because of rounding.

[a] Includes taxes and duties of $11.47 million. Such amount does not represent an excessive share of the project cost. The government will finance taxes and duties of $11.47 million through exemptions.

[b] In early-2019 prices as of 22 April 2019.

[c] Physical and price contingencies, and a provision for exchange rate fluctuation, are included.

[d] Includes interest, commitment and other charges on all sources of financing.

Source: Asian Development Bank estimates.

Table 2: Summary Financing Plan

($ million)

Source	Amount	% of Total
Asian Development Bank		
Ordinary capital resources (concessional loan)	28.00	30.2
Special Funds resources (ADF grant)	9.00	9.7
European Union (grant)[a]	20.35	21.9
World Bank (concessional loan)	15.00	16.2
Government of Solomon Islands	11.47	12.3
Solomon Islands Water Authority	9.00	9.7
Total	**92.82**	**100.0**

ADF = Asian Development Fund.

[a] Includes the grant administration fee totaling €400,000 applied to the European Union grant.

Source: Asian Development Bank estimates.

[16] Project Administration Manual (accessible from the list of linked documents in Appendix 2).

E. Implementation Arrangements

19. The Ministry of Finance and Treasury will be the executing agency. SIWA will be the implementing agency. A PMU is established in SIWA comprising SIWA personnel and is responsible for project implementation, including all procurement. The implementation arrangements are summarized in Table 3 and described in detail in the PAM (footnote 16).

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	November 2019–June 2027		
Estimated completion date	30 June 2027		
Estimated loan and grant closing date	31 December 2027		
Management			
(i) Oversight body	Project Steering Committee[a]		
(ii) Executing agency	Ministry of Finance and Treasury		
(iii) Key implementing agency	Solomon Islands Water Authority		
(iv) Implementation unit	Project management unit located within Solomon Islands Water Authority comprising 11 staff: (i) project manager, (ii) international environment specialist, (iii) contract manager, (iv) land management officer, (v) national resettlement specialist, (vi) national environment specialist, (vii) gender specialist, (viii) stakeholder strategy manager, (ix) construction manager, (x) water supply networks engineer, and (xi) project engineer		
Procurement	Open competitive bidding	14 contracts including 6 for selected subprojects	$60.8 million (excluding taxes and duties)
Consulting services	QCBS	220 person-months	$5.50 million (excluding taxes and duties)
	ICS	90 person-months	$2.00 million (excluding taxes and duties)
Retroactive financing and/or advance contracting	Up to 20% of each of the loan, ADB grant, and European Union grant will be eligible for retroactive financing in respect of goods, works, and consulting services.		
Disbursement	The loan and grant proceeds will be disbursed following ADB's *Loan Disbursement Handbook* (2017, as amended from time to time) and detailed arrangements agreed between the government and ADB.		

ADB = Asian Development Bank, ICS = individual consultant selection, PSC = project steering committee, QCBS = quality- and cost-based selection.

[a] The PSC comprises officials from government ministries, SIWA (Chair), Honiara City Council, Guadalcanal Province, the Solomon Islands National Council of Women, and the Chamber of Commerce and Industry A list of PSC members is in the Project Administration Manual (accessible from the list of linked documents in Appendix 2).

Source: Asian Development Bank.

20. As the project includes cofinancing from the World Bank and the EU, universal procurement will apply.[17] Following the procurement framework agreement entered into by ADB and the World Bank in December 2018, implementing the alternative procurement arrangements allowed under their respective procurement policies, a project implementation agreement has been signed under which ADB has been designated the lead cofinancier for the project. Consequently, SIWA will procure all works, goods, and services (including those jointly financed

[17] ADB. 2013. *Blanket Waiver of Member Country Procurement Eligibility Restrictions in Cases of Cofinancing for Operations Financed from Asian Development Fund Resources*. Manila.

by the World Bank) to be jointly financed under the project following the ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). Further, following the procurement framework agreement, the respective debarment lists of both ADB and the World Bank will need to be made applicable to jointly financed contracts under the project. As the World Bank has debarred entities that ADB has not,[18] approval by the ADB Board of Directors is sought to apply the World Bank's debarment list for jointly financed contracts under the project.

III. DUE DILIGENCE

A. Technical

21. The project design represents a technically viable approach to improve access to water supply and sanitation services in GHA and five other towns. Engineering designs are built on past studies, including the 30 Year Strategic Plan and the 5 Year Action Plan. Until the implementation of a new major water production system (Lungga), recommended by the 30 Year Strategic Plan in the mid-2020s, the additional water demand from SIWA's customers will be met by (i) reducing NRW, (ii) enhancing water conservation management (including installing prepayment meters), and (iii) upgrading the existing water production capacity.

B. Economic and Financial Viability

22. Financial analyses of the water supply and sanitation selected subprojects were undertaken using with- and without-project scenarios over a 30-year operational period, with the residual value at the end of this period assumed to be zero. The financial costs were used, including the recurrent replacement costs of capital equipment items, but excluding price contingencies and interest and other charges during construction. Consulting costs were included in the analysis. The water supply subproject on its own has a financial internal rate of return (FIRR) of 11.1% and financial net present value (FNPV) of $128.4 million, while the sanitation subproject has an FIRR of 0.9% and FNPV of –$3.9 million. The overall project has an FIRR of 11.9% and FNPV of $247.9 million.

23. Economic analyses were undertaken for the selected subprojects by comparing the discounted costs and benefits under the with- and without-project scenarios over 2020–2050 in constant 2019 prices. The without-project case represents a continuation of the existing situation while the with-project case represents the project investment scenario. The economic internal rate of return for the selected subprojects is estimated at 13.1%, higher than the opportunity cost of capital (9%). Sensitivity analysis was carried out with respect to the key parameters of incremental costs including investment, operation and maintenance (O&M), and incremental benefits. The sensitivity analysis tested the following scenarios: (i) a 20% increase in investment costs, (ii) a 20% increase in O&M costs, (iii) a 20% decrease in the incremental supply benefits, and (iv) a 2-year delay. Under these scenarios, the viability of the selected subprojects reduces, with economic internal rates of return ranging from 9.8% to 12.9%.

C. Sustainability

24. To ensure the technical sustainability of the project, the infrastructure will be designed and built using climate-proofed approaches and high durability of materials. Projected climate change impacts are considered including longer severe droughts; sea level rise; and increased rainfall

[18] The Agreement for Mutual Enforcement of Debarment Decisions dated 9 April 2010 entered into between ADB and other multilateral development banks (including the World Bank), which enables ADB to cross-debar entities debarred by other multilateral development banks (including the World Bank), is insufficient because only debarments that meet certain conditions are eligible for cross-debarment.

variability, both seasonally and annually, which is likely to cause flash floods and landslides. The reduction of NRW will increase water availability for the households, conserve water resources and reduce energy consumption and carbon emission. As result was found in recent pilot areas in GHA, the installation of prepayment meters in the project will also lead to a potential water conservation.[19] The upgrading of water sources will further balance the use of groundwater and surface water resources in SIWA's portfolio, thereby hedging the related risks. In parallel, to ensure sustainability from the customer or user perspective, the project will implement a comprehensive awareness and behavior campaign to promote good hygiene practices, water conservation and importance to pay the tariffs in the communities.

25. The project sustainability is further guaranteed by the investment from SIWA, which will finance $9 million to the project. This shows the healthy financial position of the utility, high priority and strong ownership of the project, and confidence in sustaining long-term O&M. Overall, the project's financial sustainability will be ensured through (i) improving SIWA's operational efficiency to minimize operating costs; (ii) expanding SIWA's customer base to increase revenues; (iii) promoting a regulated water and sewage tariff and ensuring the service affordability; [20] and (iv) the government's commitment to SIWA's financial sustainability, which was formally reiterated by the Ministry of Finance and Treasury to SIWA in late 2018.

D. Governance

26. Since the financial reforms initiated in 2010, SIWA's operational capacity and performance have also been improved such as metering, billing and collections, and operating profits. Currently, 93% of SIWA's water customers are billed on meter readings and the remaining customers are billed at a fixed rate. In 2018, the water and sewage tariff collection ratio reached 100%, and the operational cost coverage ratio reached 1.37. SIWA's financial position changed from an operating loss in 2010 to a surplus of about $2.0 million in 2017.

27. The financial management assessment of the executing agency concluded that the financial management risk was *low*. In the case of SIWA, the financial management risk was assessed *substantial* because (i) SIWA has no prior experience as an implementing agency with responsibilities for loan and grant disbursements and advance account management, but has previous experience with international funding support (grants); and (ii) SIWA's accounting system is adequate, but will require modification to integrate project-specific accounting, budgeting, auditing, and reporting requirements. To mitigate these risks, (i) SIWA will hire adequately skilled staff with project accounting experience to directly oversee the financial operations of the project (including reporting) and (ii) SIWA staff will undergo online training on ADB's procurement and disbursement processes before project implementation starts and regularly as part of their on-the-job training. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and SIWA. The specific policy requirements and supplementary measures are described in the PAM (footnote 16).

E. Poverty, Social, and Gender

28. An estimated 25% of Solomon Islanders live below the international poverty line of $1.90 per person per day in 2011 purchasing power parity terms. The rapid rural–urban migration and unplanned urban expansion in Solomon Islands is resulting in housing pressure, public health risks, a high cost of urban living, and water supply and sanitation challenges. Peri-urban

[19] In the pilot cases, per capita per day water consumption dropped from 169 liters to 137 liters.

[20] A legal covenant has been included in the legal agreements to ensure that a review of SIWA's water tariffs (including a focus on affordability aspects) is completed by the end of 2020.

households in GHA suffer from disproportionate levels of poverty, with up to 25% of the population below Solomon Islands poverty line of basic needs.[21] The project will indirectly reduce poverty by extending potable water and sanitation services, particularly to informal settlements. Poor quality of drinking water has increased disease burden, with negative economic consequences that disproportionately impact women, the poor, and vulnerable sections of the society. Households without proper toilet facilities are more exposed to the risk of waterborne diseases. This significantly impacts productivity and family health expenditures.

29. Other social and poverty issues in the country include (i) unemployment, with 45% of youth unemployed; (ii) lack of skills and expertise as a result of poor quality education and inadequate training; (iii) poor transport infrastructure, leading to isolation and lack of markets; and (iv) gender inequality, resulting in high rates of violence against women. The government's National Development Strategy addresses many of these issues and other development partners supporting health, education, and transport reforms.[22]

30. The project is classified *effective gender mainstreaming*. Unsafe and insecure water and sanitation services significantly affect women's time poverty (time collecting and preparing water as well as caring for sick family members as a result of waterborne diseases). Other issues highlighted by women and girls include barriers in connecting to services (such as connection fees and documentation needed), menstrual hygiene, limited income-generation opportunities for women, and limited participation in decision making. Specific gender design features include (i) supporting women's employment; (ii) supporting women's decision making by setting up water user groups; (iii) addressing barriers to connecting to services by providing gender-sensitive water, sanitation, and hygiene-awareness and behavior campaigns and training for households on willingness to pay for services, including discussion in the household on women's role in water collection and preparation; and (iv) provision of menstrual hygiene training and products.

F. Safeguards

31. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows:[23]

32. **Environment (category B)**. The project is classified *category B* for environment. An initial environmental examination and environmental assessment and review framework were prepared for the project in accordance with ADB's Safeguard Policy Statement (2009).[24] The project provides positive environmental benefits by improving sewerage and sanitation (including treatment and discharge operations), and delivering high-priority elements of SIWA's 30 Year Strategic Plan and 5 Year Action Plan. Adverse environmental impacts of the project will be site-specific, largely related to construction activities, which are expected to be minimal for land-based works and for which mitigation measures can be readily implemented. The proposed sewer effluent outfall construction requires that the mitigation measures identified in the environmental management plan (EMP) are implemented to reduce and manage impacts on the marine environment. The EMP also outlines the risks and mitigating actions to be undertaken during project implementation. SIWA's environmental management capacity is limited, and an international and a national environment specialist will be engaged through the project to support SIWA's implementation and monitoring of the EMP and to strengthen SIWA's environmental management capacity.

[21] The basic needs poverty line in Honiara is estimated at $2.49 per person per day.
[22] Government of Solomon Islands. 2016. National Development Strategy, 2016–2035: Improving the Social and Economic Livelihoods of all Solomon Islanders. Honiara.
[23] Safeguard Categories.
[24] Initial Environmental Examination and Environmental Assessment and Review Framework (accessible from the list of linked documents in Appendix 2).

33. **Involuntary resettlement (category B) and indigenous peoples (category C)**. A resettlement framework was prepared in accordance with ADB's Safeguard Policy Statement, and a resettlement plan was prepared for selected subprojects. The project affects about 20,648 square meters (m^2) and requires the acquisition of 15,706 m^2 of land. The balance of the impacted land (4,942 m^2) is within existing reserves and easements and government-owned land. Non-land impacts are associated with one informal residential structure to be relocated, some gardens and crops, and temporary impacts on nonresidential structure that could be reestablished once the works are completed. Some 75 persons will be affected, with 11 considered significantly affected. This will be confirmed following the detailed design and during the update of the resettlement plan. Consultations have been undertaken with the affected persons and will continue during project implementation. The draft safeguard documents have been disclosed by SIWA. SIWA and the government will finance, implement, and monitor the resettlement plan. The PMU, which includes a social safeguards specialist, will support SIWA in implementing the resettlement plan and provide safeguard capacity building to SIWA staff. The project is not expected to have a negative impact on any distinct or vulnerable group of indigenous peoples as defined under ADB's Safeguard Policy Statement.

G. Summary of Risk Assessment and Risk Management Plan

34. Significant risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan. [25]

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigation Measures
Future water tariff adjustments proposed by Solomon Islands Water Authority to ensure full O&M cost recovery is not approved by the government.	A covenant has been included in the legal agreements to ensure that a review of SIWA's water tariffs is completed in 2020.
Work overload for SIWA finance unit if mainstream finance personnel are utilized for project implementation	SIWA will hire adequately skilled staff with project accounting experience to directly oversee the financial operations (including reporting) of the project.
Availability of cleared sites may lead to delays in project implementation and result in cost and time overruns.	The government and SIWA will ensure availability of unencumbered land. The government's obligations include ensuring right of access of contractors.

Source: Asian Development Bank.

IV. ASSURANCES AND CONDITIONS

35. The government and SIWA have assured ADB that implementation of the project shall conform to all applicable ADB requirements, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, financial management, and disbursement as described in detail in the PAM and loan documents. The government and SIWA have agreed with ADB on certain covenants for the project, which are set forth in the draft loan agreement, grant agreements, and project agreement.

36. Each of the ADB and World Bank financing agreements include cross-effectiveness conditions. Effectiveness of the ADB financing agreements will also be subject to effectiveness of the subsidiary financing agreement to be entered into between the government and SIWA pursuant to which the proceeds of the ADB and World Bank financings will be made available to SIWA.

[25] Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

V. RECOMMENDATION

37. I am satisfied that the proposed loan and grant would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

(i) the loan of $28,000,000 to Solomon Islands for the Urban Water Supply and Sanitation Sector Project, from ADB's ordinary capital resources, in concessional terms, with an interest charge at the rate of 1% per year during the grace period and 1.5% per year thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board;

(ii) the grant not exceeding $9,000,000 to Solomon Islands from ADB's Special Funds resources (Asian Development Fund) for the Urban Water Supply and Sanitation Sector Project, on terms and conditions that are substantially in accordance with those set forth in the draft grant and project agreements presented to the Board; and

(iii) the proposal in para. 22 in this report to apply the World Bank's debarment list in addition to ADB's debarment list for jointly financed contracts under the Urban Water Supply and Sanitation Sector Project.

Takehiko Nakao
President

3 September 2019

DESIGN AND MONITORING FRAMEWORK

Impact the Project is Aligned with
Access to safe water and improved sanitation in towns increased (Solomon Islands Medium-Term Development Plan 2016–2020).

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Efficiency, climate change and disaster resiliency, and sustainability of safe water and sanitation improved in GHA, Auki, Gizo, Noro, Munda, and Tulagi towns.	By July 2027: a. 16,500 households, including 12% headed by women use improved and climate- and disaster-resilient water supplies. (2019 baseline: 9,000)	a. (i) SIWA annual report; and (ii) SIWA water production records released monthly	Population growth of the greater Honiara area exceeds growth projections
	b. Nonrevenue water in GHA is reduced to 30%. (2019 baseline: 62%)	b. (i) SIWA annual report; and (ii) Pacific Water Utility Benching Report, Pacific Water and Wastewater Association, published annually	Work overload for SIWA finance unit if mainstream finance personnel is utilized for project implementation
	c. 4,000 households (20%) in GHA are covered by sewer network. (2019 baseline: 1,000 households)	c. (i) SIWA annual report; and (ii) Pacific Water Utility Benching Report, Pacific Water and Wastewater Association, [b] published annually	
	d. 14,000 households (64%) in GHA, access improved on-site sanitation policies and fecal sludge management. (2019 baseline: 0 households)	d. Honiara City Council Environmental Health Unit reports	
	e. Sewage discharged from the sewer system complies with water quality standards in GHA. (2019 baseline: 0%)	e. (i) SIWA annual report; and (ii) Pacific Water Utility Benching Report, Pacific Water and Wastewater Association, [b] published annually	
	f. SIWA continues to recover its annual operation and maintenance costs, asset depreciation costs, and debt servicing costs from user charges and government community service obligation payments. (2019 baseline: 100%)	f. (i) SIWA annual report; and (ii) SIWA annual audit reports,	
Outputs 1. Urban water supplies are continuous and safe	By July 2027: Selected subprojects 1a. The volume of treated water for the GHA increases by 5 MLD. (2019 baseline: 32 MLD) 1b. 11 km of new water trunks are installed and 2 new storage reservoirs of 12 million liters are built in GHA. (2019 baseline: 0)	1a – 1g. (i) SIWA annual report; and (ii) SIWA asset management database updated annually	Government and community commitment to improving water supply services and sanitation services wanes

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	1c. Construction contractor personnel will comprise at least 20% women. (2019 baseline: 0%) Additional subprojects 1d. 70 km of new water supply mains are installed, and 10 km of the existing water supply mains upgraded in GHA. (2019 baseline: 0%) 1e. Three water supply systems upgraded in Auki, Noro and Tulagi towns. (2019 baseline: 0%) 1f. Two new water supply systems built in Gizo and Munda towns. (2019 baseline: 0%) 1g. 7,500 prepaid water meters installed in GHA and five towns. (2019 baseline: 0%)		Monitoring of project expenditure, contractor payments, and auditing delayed as SIWA accounting systems do not incorporate project-specific accounting and financial reporting Delays in land acquisition result in delays in project implementation and result in cost and time overruns.
2. Urban sanitation services are effective, efficient, and safe in GHA.	Selected subprojects 2a. Three ocean outfalls rehabilitated and a new outfall constructed. (2019 baseline: 0) 2b. Six new sewer pump stations constructed and two sewage pump stations rehabilitated. (2019 baseline: 0) 2c. New septage treatment facility (60 m3/day) constructed. (2019 baseline: 0) 2d. Construction contractor personnel will comprise at least 20% women. (2019 baseline: 0) Additional subprojects 2e. 7 km new sewer pipes built. (2019 baseline: 0)	2a – 2e. (i) SIWA annual report; and (ii) SIWA asset management database updated annually	
3. Enhanced and sustained awareness and behaviors of hygiene and water conservation in GHA and five towns	Selected subproject 3a. 10,000 persons are reached directly with gender-sensitive awareness and behavior programs of hygiene and water conservation (disaggregated by gender), of which 70% are women. (2019 baseline: 0 persons) 3b. At least 80% of children aged 5–15 years have improved awareness of hygiene and water conservation (disaggregated by gender) of which 50% are girls. (2019 baseline: less than 0%)	3a. Hygiene awareness and education program semiannual monitoring reports 3b. (i) Annual report of Ministry of Education and Human Resources Development; and (ii) Ministry of Health reports issued periodically	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	3c. 3,000 women and girls are provided with menstrual hygiene training and products. (2019 baseline: 0)	3c. Hygiene awareness and education program semiannual monitoring reports	
4. SIWA is financially and technically sustainable	Selected subproject 4a. Water tariff framework with regular review is set up and reviewed. (2019 baseline: 0)	4a. SIWA annual report	
	4b. All SIWA staff have updated knowledge on technical, financial or O&M (disaggregated by gender). (2019 baseline: 0)	4b. (i) SIWA annual report	

Key Activities with Milestones

1. Continuous and safe urban water supplies

1.1 Increase water production capacity from 32 MLD to 35 MLD by 31 December 2025
1.2 Commission new trunk mains to service Mataniko–Panatina and White River (11 km) by 31 December 2025
1.3 Construct new water supply reservoirs at Titinge (6 ML) and Kola (6 ML) by 31 December 2025
1.4 Fully implement leak-detection repairs and metering programs by 31 December 2026
1.5 Construct 70 km of new water mains in Honiara by 30 June 2027
1.6 Upgrade provincial town water supply schemes to Auki, Gizo, Noro, and Tulagi by 31 December 2025
1.7 Commission and construct Munda water supply scheme by 31 December 2024

2. Effective, efficient, and safe urban sanitation services

2.1 Reduce sea outfalls from 15 to three and eliminate river outfalls by 31 December 2025
2.2 Rehabilitate two existing sewage pump stations, and construct 6 new pump stations by 31 December 2025

3. Enhanced sustained awareness and behavior of hygiene and water conservation in GHA and five towns

3.1 Deliver hygiene awareness program from June 2020 to June 2024

4.1 SIWA is financially and technically sustainable

4.1 Prepare and implement financial management policies including tariff management framework and tariff review process
4.2 Design and implement capacity building programs for SIWA staff including the on-the-job training
4.3 Design and implement preventative maintenance programs and asset management
4.4 Expand SIWA's telemetry system
4.5 Introduce and implement SIWA personnel incentive schemes.

Inputs

Asian Development Bank:	$28.0 million (concessional ordinary capital resources loan) $9.0 million (Asian Development Fund grant)
European Union:	€18.0 million
World Bank:	$15.0 million (concessional loan)
Government of Solomon Islands:	$11.5 million (taxes and duties)
Solomon Water:	$9.0 million

HH = households; km = kilometer, GHA = the greater Honiara area, ML = million liters, MLD = million liters per day, O&M = operation and maintenance, SIWA = Solomon Islands Water Authority.

[a] Government of Solomon Islands. 2016. *Medium-Term Development Plan, 2016–2020*. Honiara.

Source: Asian Development Bank.

[b] Pacific Water and Wastewater Association. Annual benchmarking reports. Apia

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=51271-001-3

1. Loan Agreement
2. Grant Agreement: Special Operations
3. Grant Agreement: Externally Financed – European Union
4. Project Agreement
5. Sector Assessment (Summary): Water and Other Urban Infrastructure and Services
6. Project Administration Manual
7. Financial Analysis
8. Economic Analysis
9. Summary Poverty Reduction and Social Strategy
10. Risk Assessment and Risk Management Plan
11. Climate Change Assessment
12. Gender Action Plan
13. Initial Environmental Examination
14. Environmental Assessment and Review Framework
15. Resettlement Plan
16. Resettlement Framework