



# Project Design Advance Project Administration Manual

---

Project Number: 49001-001  
Loan Number: 6004  
December 2015

## Fiji: Project Design Advance for Urban Water Supply and Wastewater Management Project

## CONTENTS

I.	PROPOSED PROJECT DESCRIPTION	1
A.	Outputs	2
II.	IMPLEMENTATION PLANS	4
A.	PDA Readiness Activities	4
B.	Overall PDA Project Implementation Plan	4
III.	PDA PROJECT MANAGEMENT ARRANGEMENTS	6
A.	PDA Project Implementation Organizations – Roles and Responsibilities	6
B.	Key Persons Involved in Implementation	7
C.	PDA Project Organization Structure	8
IV.	COSTS AND FINANCING	9
A.	Cost Categories and Assumptions	10
B.	Cost Estimates Revisions	12
V.	FINANCIAL MANAGEMENT	13
A.	Financial Management Assessment	13
B.	Disbursement	18
C.	Accounting	19
D.	Auditing	20
VI.	PROCUREMENT AND CONSULTING SERVICES	22
A.	Advance Contracting	22
B.	Procurement of Goods and Consulting Services	22
C.	Procurement Plan	23
VII.	SAFEGUARDS	31
VIII.	GENDER AND SOCIAL DIMENSIONS	32
IX.	PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION	32
A.	Monitoring and Evaluation	32
B.	Reporting	33
C.	Stakeholder Communication Strategy	33
X.	ANTICORRUPTION POLICY	34
XI.	ACCOUNTABILITY MECHANISM	34
XII.	RECORD OF PAM CHANGES	34
ANNEX I		35
A.	DETAILED TERMS OF REFERENCE	35

**Project Administration Manual (PAM) for the Project Design Advance (PDA):  
Purpose and Process**

The PAM for the PDA is an abridged version of Asian Development Bank's (ADB) regular PAM and describes the essential administrative and management requirements to implement the PDA on time, within budget, and in accordance with Government and ADB policies and procedures. The PDA PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Ministry of Finance (MOF) and Water Authority of Fiji (WAF) are wholly responsible for the implementation of ADB financed PDA projects, as agreed jointly between the Government and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by MOF and WAF of their obligations and responsibilities for PDA project implementation in accordance with ADB's policies and procedures.

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

After ADB's approval of the PDA proposal, changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions), and upon such approval they will be subsequently incorporated in the PDA PAM.

## Abbreviations

ADB	=	Asian Development Bank
AFS	=	audited financial statements
DBO	=	design-build operate
QCBS	=	quality and cost based selection
NCB	=	national competitive bidding
NRW	=	non-revenue water
PAM	=	project administration manual
PDA	=	project design advance
TOR	=	terms of reference
WSS	=	water supply system
WTP	=	water treatment plant

## I. PROPOSED PROJECT DESCRIPTION

1. The project will increase the capacity of the Water Authority of Fiji (WAF) to provide safe water and sewerage services to the urban population of the greater Suva area (GSA) where approximately 30% of Fiji's population lives.<sup>1</sup> The project will build infrastructure to increase water production by 20% and wastewater treatment (WWT) by 200% in the GSA. In addition, WAF will be supported to improve the efficiency of its operation and quality of service delivery including reducing non-revenue water (NRW). The project will also support government to develop and implement policy and regulatory reforms in water and sewerage to make WAF a more sustainable and accountable institution. A capacity development technical assistance was provided to prepare the project.<sup>2</sup>

2. Fiji has a population of approximately 868,000, of which 53% is urban.<sup>3</sup> By 2030, it is estimated that two in three Fijians will be living in the country's urban centers.<sup>4</sup> While poverty rates in Fiji are highest in rural areas, the rapid growth of peri-urban squatter settlements<sup>5</sup> implies that the majority of poor people in Fiji now live in and around urban areas. Fiji's urban sector accounts for 60% of the country's gross domestic product, with the share of the GSA estimated at 40%.<sup>6</sup> The GSA, which consists of Suva City—the national capital—as well as the towns of Lami, Nasinu, and Nausori and their surrounding peri-urban areas, accounts for 57% of Fiji's urban population. By 2023, the population of the GSA is expected to grow by 12.8%.<sup>7</sup>

3. Despite the economic importance of the country's cities and towns, urban infrastructure and services have not kept pace with rapid urban growth. Inevitably this is contributing to environmental degradation and increased health risks, and acts as a binding constraint on social and economic development. The improved delivery of urban water supply and sanitation services is thus essential for ongoing economic development and is a high priority for government.<sup>8</sup>

4. **Wastewater Management.** Current planning regulations ban high-density urban development in unsewered areas. Existing sewerage infrastructure covers only 36% of the GSA and the lack of adequate wastewater infrastructure has constrained high density development. This is directly contributing to urban sprawl and environmental degradation. To address this problem, the government intends to increase sewerage coverage in the GSA to 90% by 2023.<sup>9</sup>

---

<sup>1</sup> World Bank and Fiji Bureau of Statistics. 2011. Republic of Fiji: Poverty Trends, Profiles and Small Area Estimation (Poverty Maps) in Republic of Fiji (2003-2009). World Bank. Washington DC.

<sup>2</sup> ADB. 2013. *Technical Assistance to Fiji for Urban Development Planning and Institutional Capacity Building*. Manila (TA8526-FIJ, \$1,370,000 approved on 4 December).

<sup>3</sup> United Nations Statistics Division. Country Profile: Fiji. <http://data.un.org/CountryProfile.aspx?crName=FIJI> (accessed 20 September 2013).

<sup>4</sup> Ministry of Local Government, Urban Development, Housing and Environment. Official communication.

<sup>5</sup> In 2007, it was estimated that upwards of 140,000 people (15% of Fiji population) were living in 200 informal settlements. The majority of these settlements are located along the Lami-Suva-Nausori corridor, Nadi-Lautoka-Ba corridor, and Labasa (McKinnon, J, Whitehead, S. Chung, M. and Taylor, L. 2007. Report of the Informal Settlements Scoping Mission. NZAID. Wellington).

<sup>6</sup> Cities Development Initiative for Asia. 2012. *Pre-Feasibility Study for GSA Sustainable Urban Transport Project*. Volume 1. Manila.

<sup>7</sup> Ministry of Local Government, Urban Development, Housing and Environment Draft Urban Growth Map 2013-2013

<sup>8</sup> Government of Fiji. 2009. Roadmap for Democracy and Sustainable Socio-Economic Development, 2010–2014. Suva. Government of Fiji. 2014. A Green Growth Framework for Fiji: *Restoring the Balance in Development that is Sustainable for our Future*. Suva.

<sup>9</sup> Government of Fiji. 2009. Roadmap for Democracy and Sustainable Socio-Economic Development, 2010–2014. Suva. Government of Fiji. 2014. A Green Growth Framework for Fiji: *Restoring the Balance in Development that is Sustainable for our Future*. Suva.

The main WWT facility in the GSA, the Kinoya WWT plant, is currently working at full capacity and needs to be upgraded and expanded before additional flows can be treated. Wastewater modeling has also revealed major deficiencies in the pump stations and gravity and rising mains. These need to be rectified before any additional connections to the system.

5. **Water Supply.** The Waimanu River is the only raw water source for the Waila and Tamavua water treatment plants which currently serve the GSA. Both water treatment plants are running 24 hours at full capacity and at times cannot meet peak demands. With NRW calculated at 50% by WAF, WAF has no capacity to extend the network to peri-urban areas or new growth areas. As a consequence, some of the served areas suffer intermittent service. Service interruptions are more pronounced during drought periods, when the Waimanu River flow is insufficient to operate the plants at their full production capacity and during periods of high rainfall, when the Waimanu waters become highly turbid, reducing both plant outputs as the filters require more frequent backwashing. The situation is compounded with the predicted onset of climate change and the expected increase in drought and heavy rainfall incidences, forecasting more frequent interruptions to supply into the future. The reduction of NRW is a parallel priority but even if the 25% target is achieved, current production will still not be sufficient to cater for growing demand.

6. **Institutional Framework.** WAF is a commercial statutory authority promulgated under the ambit of the Public Enterprise Act 1996. WAF took over responsibilities, functions and operations previously carried out by the water and sewerage department in January 2010. WAF manages both water and wastewater services across Fiji in accordance with the functions and powers of the Promulgation reporting to the Ministry of Infrastructure and Transport (MoIT). Since becoming a statutory authority in 2010, WAF has been focusing on operational improvements to both the supply of water and wastewater systems. Some key achievements have included improvement of water treatment quality and the reduction of intermittent zones from 64 to 24 in the GSA. WAF however has yet to be fully corporatized and key areas such as financial autonomy, human resources management, procurement process and role and governance of the board need to be strengthened.<sup>10</sup> For WAF to be able to improve its financial sustainability and to be more accountable to regulatory bodies, government will need to tackle water and sewerage tariff reform, introducing and enforcing liquid trade waste regulations and reviewing regulations that affect municipal waste water management.

7. **Impact and Outcome.** The project impact will ensure that residents of some of Fiji's most densely populated areas have improved access to safe piped water and an environmentally friendly sewerage system. The project's impact is aligned with the government's policy to improve delivery of water supply and sanitation services as articulated in the Roadmap for Democracy and Sustainable Socio-Economic Development, 2010–2014. The outcome will be improved access to sustainable water supply and sewerage services.

#### A. Outputs

8. **Output 1:** WAF increases access to reliable and safe water supply in the GSA through: (i) increasing production by 30,000 m<sup>3</sup> per day by designing and constructing a new water supply source in the Rewa river, water treatment plant, pumping station and reservoir to serve

---

<sup>10</sup> WAF is undergoing an assessment using Aqua Rating, which is a tool developed by the International Water Association to assess water utilities' performance. The assessment covers all areas, including quality of service, asset management, operation and maintenance, customer service, financial sustainability, corporate governance, etc. The assessment is then audited by an independent technical team certified by the International Water Association and its recommendations will allow WAF to prepare a road map to implement key reforms.

the GSA water supply system; and (ii) reducing NRW due to technical losses and non-technical losses by replacing meters; improving leak detection and repairs; establishing district metering and demand management areas and pressure management systems. This will address the existing shortfall in bulk water supply and water treatment during peak dry weather periods, therefore improving water supply reliability and continuity across the GSA water supply system; and provide additional bulk water supply and water treatment capacity to allow the servicing of areas not currently supplied by the system as well as to service future growth in GSA.

9. **Output 2:** WAF increases sewer coverage capacity and reliability of WWT processes in the GSA through: (i) increasing WWT capacity of Kinoya to approximately 277,000 p.e by designing and building new treatment facilities, namely two primary sedimentation tanks, a new digester and upgrade dewatering plant; (ii) upgrading around 31 existing wastewater pumping stations to allow more flow to the treatment plant; (iii) replacing of around 18km of wastewater trunk mains and relining of around 18km of wastewater trunk mains that are reaching the end of their asset life; and (iv) the design and construction of new wastewater infrastructure to service additional 15% of the households in backlog areas and new development areas (approximately servicing 4,500 new lots). This will improve overall effluent quality and help to minimize the incidents of treatment plant bypassing, thereby improving water quality downstream in receiving waters. More importantly it will enable the servicing of backlog sewerage areas and allow future growth within the Suva-Nausori wastewater system.

10. **Output 3:** WAF management and sustainable service delivery capacity improved through: (i) supporting WAF with the implementation of a water demand management program, NRW program and the national liquid trade waste program; (ii) supporting the Department of Environment with the review of the environmental regulatory framework for municipal WWT discharge as well as sludge treatment and disposal practices and standards, and with monitoring and enforcement of these regulations; (iii) assisting the government and WAF with completing the corporatization of WAF, including transfer of assets, governance arrangements, greater financial sustainability and the retention of revenue within WAF; (iv) assisting the Ministry of Local Government, Housing and Environment (MLGHE) and WAF with formulating a catchment plan to protect the quantity and quality of the water at the intakes for all the water sources in the project area (this should consist of developing land use plans and ensuring required protective measures are in place for all water source locations); (v) reviewing policies used by WAF in financial reporting and supporting the implementation of changes to WAF accounting policies and financial management, including the provision of accounting training; (vi) carrying a study on options long terms alternatives to reduce energy consumption of the GSA WWT system in the GSA and (vii) supporting the promotion of gender equity within WAF business practices.

11. The PDA is included in Fiji's Country Operations Business Plan, 2016–2018 and advance contracting of consultants was approved on 13 May 2015. The proposed ADB financing for the PDA is \$2.65 million and which would be advanced from a total of \$67 million allocated to the Project from the Ordinary Capital Resources. The request from the government for the PDA came on 27 November 2015. The ensuing project is expected to be co-financed by EIB and GCF, with the GCF Board approving a grant of \$31 million in November 2015. The ADB OCR financing for the ensuing project is scheduled to be considered for Board approval in December 2016.

12. **Purpose of the PDA.** To avoid delays in project implementation and improve project design, during the PDA financing period, the government with the support of the PDA financed consultants will deliver the concept design for Design Build Operate, conceptual and detailed



ADB = Asian Development Bank; EOI = expressions of interest; GOF = Government of Fiji; PDA = project design advance; RFP = request for proposal;

### III. PDA PROJECT MANAGEMENT ARRANGEMENTS

#### A. PDA Project Implementation Organizations – Roles and Responsibilities

PDA Project implementation organizations	Management Roles and Responsibilities
<b>Coordination body</b>	
<ul style="list-style-type: none"> <li>• Project Preparatory Coordination Committee (PPCC)</li> </ul>	<ul style="list-style-type: none"> <li>(i) The PPCC will include representatives from MOF (chair), MOIT, MOFA, MLGHE (Department of Environment and Department of Town and Country Planning), MLMR, TLTB, WAF, FCC (members); and ADB.</li> <li>(ii) Oversee implementation of the PDA project and its consistency with ensuing proposed project to ensure it is in line with national government policies (Green Growth Framework, Roadmap to Democracy and Sustainable Socioeconomic Development, Public Sector Investment Program, Updated National Infrastructure Policies and Plan)</li> <li>(iii) Monitor PDA project progress and cooperatively resolve issues hindering progress</li> <li>(iv) Guide the implementing agency</li> </ul>
<b>Executing agency</b>	
<ul style="list-style-type: none"> <li>• Ministry of Finance</li> </ul>	<ul style="list-style-type: none"> <li>(i) Cause WAF to implement the project</li> <li>(ii) Submit withdrawal application to ADB</li> <li>(iii) Submit required annual audit reports and financial statements of PDA project account to ADB</li> <li>(iv) Coordinate appropriate government representation for PDA loan negotiations, PDA loan signing, and PDA loan effectiveness</li> </ul>
<b>PDA Implementing agency</b>	
<ul style="list-style-type: none"> <li>• Water Authority of Fiji</li> </ul>	<ul style="list-style-type: none"> <li>(i) Recruitment of PDA consulting services in accordance with Guidelines on Use of Consultants by ADB and its Borrowers</li> <li>(ii) Establish a Project Management Unit which will be responsible for day to day implementation of the PDA project</li> <li>(iii) Prepare overall implementation plan and annual budgets</li> <li>(iv) Supervise PDA consultants</li> <li>(v) Oversee detailed design of ensuing project</li> <li>(vi) Ensures timely advance procurement for civil works contracts for the ensuing project in accordance with ADB Procurement Guidelines</li> <li>(vii) Supervise and ensures timely advance of all project preparatory work required to complete due diligence for the ensuing project, including social and environmental safeguards plans in accordance with ADB Guidelines and consultation and communications plan.</li> <li>(viii) Review of withdrawal applications before submission to executing agency</li> </ul>
<b>ADB</b>	<p>Supervise WAF's implementation of the Project by:</p> <ul style="list-style-type: none"> <li>(i) Reviewing and facilitating approval of project implementation and procurement documents submitted by EA</li> <li>(ii) Disclosing project information to the public</li> <li>(iii) Fielding review missions</li> <li>(iv) Facilitating knowledge sharing</li> </ul>

ADB = Asian Development Bank; FCC = Fiji Commerce Commission; MOF = Ministry of Finance; MOFA = Ministry of Foreign Affairs; MOIT = Ministry of Infrastructure and Transport; MLGHE = Ministry of Local Government, Housing and Environment; MLMR = Ministry of Lands and Mineral Resources, PDA = project design advance; PPCC = project preparatory coordination committee; TLTB = iTaukei Land Trust Board; WAF = Water Authority of Fiji.

**B. Key Persons Involved in Implementation****Executing Agency**

Ministry of Finance

Mr. Filimone Waqabaca  
Permanent Secretary  
Ministry of Finance

**Implementing Agency**

Water Authority of Fiji

Mr. Opetaiia Ravai  
Chief Executive Officer  
Water Authority of Fiji  
Level 6, Manohan Building  
Cnr of Kings & Wainivula Road, Nasinu  
PO Box 1272, Suva

**ADB**

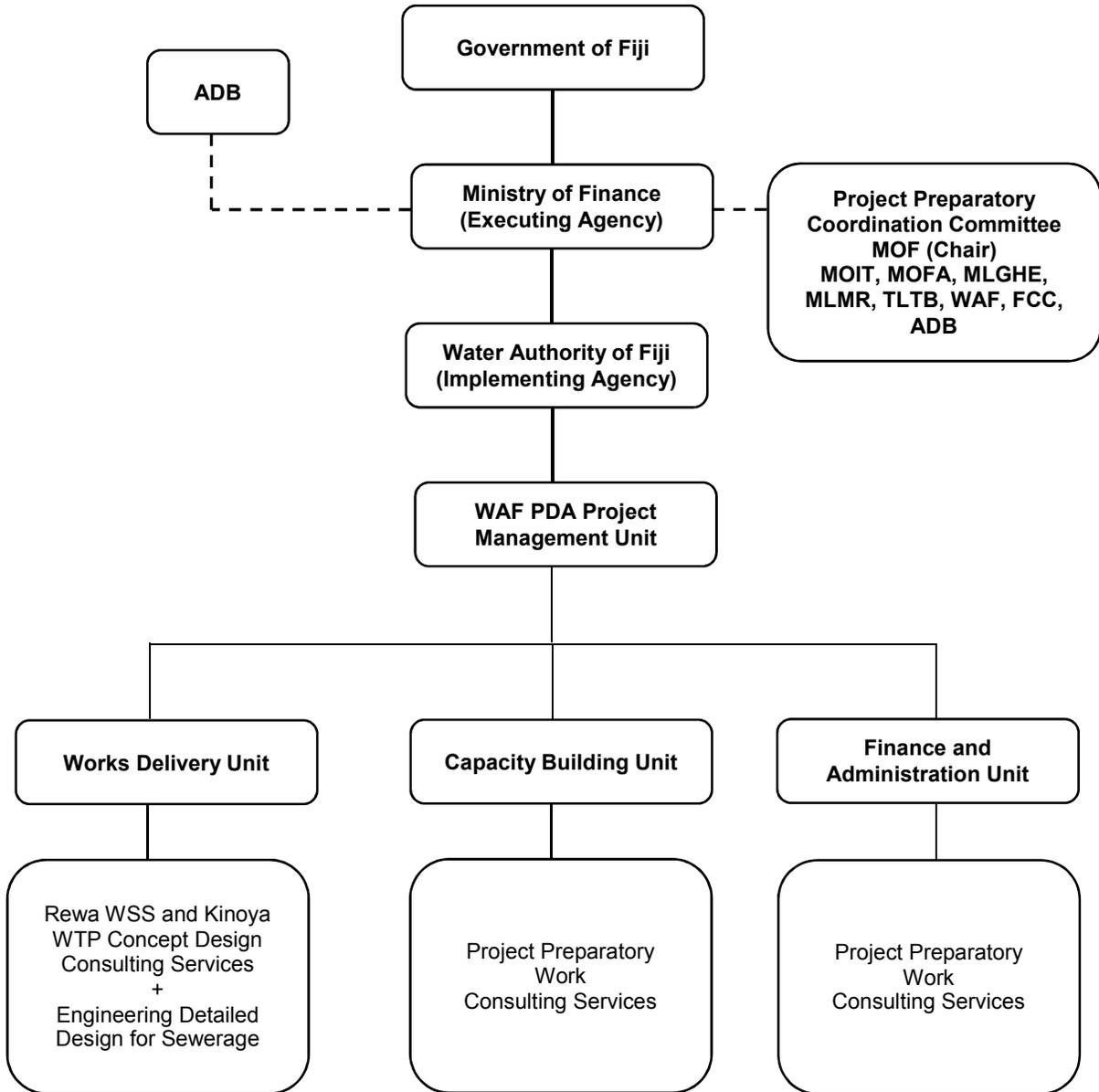
Pacific Subregional Office

Robert Jauncey  
Regional Director  
Telephone No. +679 331 8101  
Email address rjauncey@adb.org

**Mission Leader**

Maria Paniagua  
Unit Head, Project Administration  
Telephone No. +679 331 8101  
Email address mppaniagua@adb.org

**C. PDA Project Organization Structure**



ADB = Asian Development Bank; FCC = Fiji Commerce Commission; MOF = Ministry of Finance; MOFA = Ministry of Foreign Affairs; MLGHE = Ministry of Local Government, Housing and Environment; MLMR = Ministry of Lands and Mineral Resources; TLTB = iTaukei Land Trust Board; WAF = Water Authority of Fiji.

#### IV. COSTS AND FINANCING

15. The PDA project is tentatively estimated to cost \$9,350,000 including taxes, duties, land acquisition and resettlement, and contingencies during PDA loan administration. The tentative investment and financing plan is summarized in Table 1. It is proposed that an amount of \$2,650,000 from ADB's ordinary capital resources (OCR) be provided to help finance the PDA project.

16. The Government of Fiji has requested a loan of \$2,650,000 from ADB's OCR to help finance the PDA project. The loan will have a 20-year term and an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility. The PDA loan interest will be deferred until the PDA is repaid from the ensuing financing or other repayment terms take effect. Commitment charges are waived for a period of 2 years from PDA effectiveness. If the ensuing financing does not become effective within that period, commitment charges of 0.15% per year will accrue thereafter. Local transport and insurance for the goods required to carry out the consulting contracts will be eligible under the PDA loan.

**Table 1: PDA Project Investment and Financing Plan**  
(\$ million)

Item	Cost <sup>b</sup>	ADB	Government <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>			
1. Project Preparatory Work	3.80	0.77	3.03
2. Concept Design Rewa WSS and Kinoya WTP	1.81	0.61	1.20
3. Detailed Design for Sewerage Extension	3.07	1.03	2.03
<b>Subtotal (A)</b>	<b>8.68</b>	<b>2.42</b>	<b>6.26</b>
<b>B. Contingencies<sup>c</sup></b>	<b>0.67</b>	<b>0.23</b>	<b>0.44</b>
<b>Total (A+B)</b>	<b>9.35</b>	<b>2.65</b>	<b>6.70</b>

WSS = water supply scheme; WTP = waste treatment plant.

<sup>a</sup> Includes cost of land acquisition and resettlement of \$1.5 million and taxes and duties of \$0.04 million to be financed from government resources as an exemption.

<sup>b</sup> In mid-2015 prices.

<sup>c</sup> Contingencies computed at 7% for consulting services.

Source: Asian Development Bank Estimates

## A. Cost Categories and Assumptions

**Table 2: Detailed Cost Estimates by Expenditure Category<sup>a</sup>**

<b>Category</b>	<b>Project Preparatory Work Part A</b>	<b>Concept Design Rewa WSS Kinoya WTP Part A</b>	<b>Detailed Design for Sewerage Extension Part A</b>	<b>Total Part A</b>
<b>1. Consultants</b>				
a. Remuneration and Per Diem				
i. International Consultants	\$1,736,255	\$1,511,990	\$ 1,894,415	\$5,142,660
ii. National Consultants	\$265,200	-		\$265,200
b. International and Local Travel	\$88,000	\$54,000	\$40,000	\$182,000
c. Equipment	\$87,500	\$8,400	\$65,000	\$160,900
d. Consultations & Workshops	\$3,000	\$5,500	\$ 5,688	\$14,188
e. Out of Pocket Expenses	\$49,800	\$3,200	\$89,914	\$142,914
f. Provisional Sums	\$50,000	\$225,000	\$950,000	\$1,225,000
g. Indirect Local Taxes <sup>b</sup>	\$21,045	\$2,565	\$ 23,338	\$46,948
<b>3. Land Acquisition and Resettlement</b>	<b>\$1,500,000</b>	-	-	<b>\$1,500,000</b>
<b>4. Contingencies<sup>c</sup></b>	<b>\$229,200</b>	<b>\$179,345</b>	<b>\$ 261,646</b>	<b>\$670,190</b>
<b>TOTAL</b>	<b>\$4,030,000</b>	<b>\$1,990,000</b>	<b>\$3,330,000</b>	<b>\$9,350,000</b>

ADB = Asian Development Bank

<sup>a</sup> In 2015 prices

<sup>b</sup> Indirect Local Taxes and duties of \$46,986 to be financed from government as an exemption

<sup>c</sup> Physical contingencies computed at 7% for consulting services

Source: Asian Development Bank estimates

**Table 3: Detailed Cost Estimates by Expenditure Category and Financier<sup>a</sup>**

Item	<u>ADB Loan</u>		<u>Government<sup>b</sup></u>		Total	% of Total Base Cost
	Amount (\$ million)	% of Cost Category	Amount (\$ million)	% of Cost Category		
<b>A. Investment Costs</b>						
1. Consultants <sup>c</sup>						
1a. Project Preparatory Work	774,229	34	1,526,571	66	2,300,800	25
1b. Concept Design for Rewa WSS and Kinoya WTP	614,047	34	1,196,608	66	1,810,655	19
1c. Detailed Design for Sewerage Extension	1,034,120	34	2,034,235	66	3,068,355	33
2. Land Acquisition and Resettlement	-	0	1,500,000	100	1,500,000	16
<b>Subtotal (A)</b>	<b>2,422,396</b>	<b>28</b>	<b>6,257,414</b>	<b>72.</b>	<b>8,679,810</b>	<b>93</b>
<b>B. Contingencies<sup>d</sup></b>	<b>227,604</b>	<b>34</b>	<b>442,586</b>	<b>66.0</b>	<b>670,190</b>	<b>7</b>
<b>Total PDA Project Cost</b>	<b>2,650,000</b>	<b>28</b>	<b>6,700,000</b>	<b>71.7</b>	<b>9,350,000</b>	<b>100</b>

ADB = Asian Development Bank

<sup>a</sup> In 2015 prices

<sup>b</sup> Includes taxes and duties of \$46,986 to be financed as an exemption

<sup>c</sup> Includes allocation for equipment and vehicles, workshops and consultations, out of pocket expenses and studies and geotechnical surveys.

<sup>d</sup> Physical contingencies computed at 7% for consulting services

Source: Asian Development Bank estimates

**Table 4. Allocation and Withdrawal of PDA Loan Proceeds**

<b>Number</b>	<b>Category</b>	<b>Amount of PDA Loan</b>	<b>Basis for Withdrawal from the PDA Loan Account</b>
1	Consulting Services	2, 650,000	34% of total expenditure claimed*
	<b>Total</b>	<b>2,650,000</b>	

PDA = project design advance

\*Exclusive of cost of taxes and duties imposed within the territory of the Government.

Source: Asian Development Bank.

### **B. Cost Estimates Revisions**

17. Revisions of the cost estimates will be the responsibility of WAF who will update the estimates after contract awards and quarterly during implementation.

## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

18. A financial management assessment (FMA) for the PDA project was carried out in accordance with ADB's Financial Management Guidelines<sup>11</sup> and Financial Due Diligence Methodology Note, under a project preparatory technical assistance (PPTA). The FMA considered the Ministry of Finance (MOF) as the proposed executing agency (EA) and the Water Authority of Fiji (WAF) as the proposed implementing agency (IA). The assessed financial management risk of the project is considered substantial. WAF's staffing, accounting and reporting capacities are weak. Also, the entity financial statements are overdue and a disclaimer and an adverse opinion were issued by the auditors for WAF's first 2 years' of operation. The PDA project will fund 2 finance specialists (a long-term national specialist and a short-term international specialist) who will conduct detailed reviews of WAF's accounting, reporting and internal audit policies and implement recommendations for improvement. The specialists will also provide on-the-job training to all WAF finance and audit staff. The PDA project will also fund a full-time qualified project accountant, who will be responsible for all project financial management work.

19. The FMA consisted of (i) completing the FMA questionnaire; (ii) assessing the FM internal control and risk; and (iii) evaluating the implementing agency's FM personnel, accounting policies and procedures, internal and external audit, and information systems for financial reporting. Interviews were conducted with WAF's finance division and senior management, officers of MOF's Debt and Cash Flow Management Unit, and staff of the Office of the Auditor General (OAG).

20. Fiji has an adequate legal framework for public financial management and budgeting, provided for under the Financial Management Act, 2004 and Finance Instructions, 2005 and 2010. Public financial management (PFM) arrangements were assessed using the Public Expenditure Financial Accountability (PEFA) PFM assessment framework in 2013. MOF are now preparing a PFM Reform Plan, which will be published together with the PEFA report by September 2015.<sup>12</sup> ADB's County Program Strategy (CPS), 2014-2018 approved by the Board in November 2014 will focus support on strengthening public sector management capacity in core government functions, including budgeting, debt management, and other public financial management and SOE reforms.

21. The MOF is current executing agency for L3210-FIJ: Transport Infrastructure and Investment Sector Project and has been the executing agency for previous ADB projects including G0286-FIJ: Flood Rehabilitation Project which closed in July 2014; G0283-FIJ: Fiji Flood Emergency Response which closed in October 2015; L2514-FIJ: Third Road Upgrading (Sector) Project (Supplementary) which closed in May 2014; and L2603-FIJ Suva Nausori Water Supply and Sewerage Project (Supplementary) which closed in April 2015. Staff of the Cash Flow and Debt Management Unit in the MOF are well-versed with ADB's disbursements requirements and have attended in-country training, conducted by ADB from 2011. MOF staff

---

<sup>11</sup> ADB. 2005. 2010. *Guidelines for the Financial Management and Analysis of Projects*. Manila.

<sup>12</sup> Under the PEFA framework, performance is assessed in relation to seven dimensions of public financial management: credibility of the budget; comprehensiveness and transparency; degree to which the budget is prepared with due regard to government policy; predictability and control in budget execution; accounting, recording and reporting; external scrutiny and audit operations; appropriateness of development partner practices in country; and intergovernmental fiscal relationships.

also attended a financial reporting and auditing requirements in-country training, conducted by ADB in 2013.

22. WAF was established under the WAF Promulgation 2007 Act and from 1 January 2010, officially took over from the Water and Sewerage Department (WSD). WAF is governed by a Board of Directors appointed by government and the daily operations of WAF are delegated to the Chief Executive Officer (CEO). Reporting to the CEO are the Chief Operating Officer (COO) and the Chief Financial Officer (CFO). Three regional managers (central eastern, western and northern) report to the COO and the finance team reports to the CFO. WAF has separate departments for human resources, internal audit, legal, strategic planning and customer services. The total workforce at WAF is 1,200 full time and 1,350 project staff, the latter being recruited for the duration of projects being implemented. The finance division comprises of teams responsible for payments, projects, operations (reconciliations), revenue and payroll and consists of 39 staff. The IT, procurement and fleet management staff totaling 36, also report to the CFO. A major issue faced by WAF has been the retention of qualified finance staff. The current CFO, who joined WAF in January 2014, is the 6th since WAF was established and is an accredited chartered accountant with the Fiji Institute of Accountants. WAF also recruited a Manager Finance in June 2014, who is accredited to CPA Australia.

23. The financial statements of WAF's first year of operation (2010) were audited in 2013 and a disclaimer of opinion, due to lack of audit evidence, was issued by the OAG. The instances cited were: (i) adjustments to the accounts without proper evidence and authority; (ii) inventory GL was sub-ledger balance did not reconcile; (iii) lack of valuation of property, plant and equipment taken over by WAF when it was established; and (iv) stock take not undertaken at year end. For the 2011 financial statements, an adverse opinion was issued by OAG due to the (i) inclusion of water and sewerage charges and corresponding receivables when proceeds from these sources are deposited in government's consolidated account and accounted by government as their revenue; (ii) lack of internal control over journal entries; (iii) lack of valuation of property, plant and equipment taken over by WAF when it was established; (iv) stock take not undertaken at year end; and (v) lack of evidence for other payables. Regarding the inclusion of water and sewerage charges in their financial statements, WAF sought a second opinion from one of the big four audit firms and was advised that their treatment of the proceeds was correct. For 2012, WAF submitted the draft financial statements to OAG in March 2015 and the audit report was signed in October 2015. A qualified opinion was issued by OAG due to the following: (i) inclusion of water and sewerage charges and corresponding receivables when proceeds from these sources are deposited in government's consolidated account and accounted by government as their revenue; (ii) lack of valuation of property, plant and equipment taken over by WAF when it was established; and (iii) stock take not undertaken at year end. WAF are currently undertaking a review of their assets and once completed, a full asset valuation will be carried out. The draft 2013 and 2014 financial statements were submitted by WAF to OAG in October 2015 and OAG will complete their field work in January 2016. WAF plan to submit the draft financial statements for 2015 to OAG by March 2016.

24. WAF has been an IA for four ADB projects - L2055-FIJ Suva-Nausori Water Supply and Sewerage Project which closed in June 2013; L2603-FIJ Suva Nausori Water Supply and Sewerage Project (Supplementary) which closed in June 2014; L2541-FIJ Emergency Flood Recovery Project which closed in July 2015, and G0283-FIJ Fiji Flood Emergency Response which closed in October 2015. Under all projects, WAF staff prepared the withdrawal applications, which were then forwarded for signature, to MOF where the authorized signatories are based. WAF staff also prepared the project financial statements for auditing and handled responses to the audit management letter. The WAF and MOF staff who handle this work are

well-versed with ADB's disbursements and financial reporting and auditing requirements and attended in-country training, conducted by ADB in 2012 and 2013.

25. Unqualified opinions have been issued by the OAG for all project financial statements under L2055-FIJ, L2603-FIJ and L2514-FIJ. Under the first four year's project financial statements for L2055-FIJ, the OAG noted issues relating to differences between WAF's and MOF's records, poor financial planning, records for a particular purchase not being available, incorrect charging of VAT and improper storage of files and in the seventh year, an incorrect USD-FJD exchange rate was used. For the G0283-FIJ project, the OAG confirmed that the financial statements were presented fairly in accordance with the Grant but issued a disclaimer of opinion due to nine internal control weaknesses. These included some tenders not being called for services; tenders being extended by the CEO without Board approval; completed works certified by staff other than engineers/supervisors; contractor vehicle registration numbers not stated on WAF contract documents; idle time not inputted on daily machine tally sheets; purchase orders issued after invoices were received; adequate supporting documents not always attached to payment vouchers; expenses posted in the GL according to expenditure allocations and not according to depots; and failure to produce some documents for audit. WAF strongly disagreed with the OAG's opinion and was disappointed that their responses were not taken into account by the OAG and several meetings were held on this. The WAF management was tasked by the Board to investigate the audit findings and after a review; the Board was satisfied with the explanations given by Management. The Board also acknowledged that the relief work had to be done quickly and as there was competition for resources, some lapses in established procedures were inevitable. In the long term, WAF would incorporate new sections in its procedure manuals, outlining processes to follow, in times of natural disasters and emergencies, and this was done in October 2013. In September 2015, WAF confirmed that all issues raised by the auditors, have been addressed.

26. With regards to the submission of audited project financial statements, there were significant delays with the L2055-FIJ project when it was under the responsibility of the WSD, including the loan being suspended in April 2008 because the 2005 and 2006 audited project financial statements had not been received by ADB. The audited project financial statements for 2005 and 2006 were finally received by ADB 17 months and 5 months respectively, after the due dates. Since WAF was established, there have been improvements in the submission dates of audited project financial statements for all projects, including two submissions being received before the due dates.

27. To assist WAF, the proposed project will finance a long-term national financial specialist and a short-term international financial specialist to assist the CFO in training the finance and internal audit staff, as well as to review the accounting, financial management and internal auditing policies and support the implementation of changes needed. The proposed project will also finance a qualified full-time project accountant, who will handle all financial work for the project.

28. A Financial Management Internal Control and Risk Management Assessment, based largely on International Standard on Auditing 400 Risk Assessment and Internal Control, was conducting on the existing structure, staffing, resources and procedures of the WAF. The results, including recommendations for risk mitigation measures, are summarized in Table 1.

**Table 1. Financial Management Internal Control and Risk Management Assessment**

<b>Risk Type</b>	<b>Risk Assessment Rating</b>	<b>Risk Description</b>	<b>Mitigation Measures</b>
<b>A. Inherent Risk</b> (the susceptibility of the PDA project financial management system to factors arising from the environment in which it operates, such as country rules and regulations and entity working environment (assuming absence of any counter checks or internal controls)).			
1. Country-specific Risks	Moderate	An IMF report of 2004, noted poor public financial management.	Public financial management has improved since. Specific support on ADB's procedures will be provided by the project.
2. Entity-specific Risks	Moderate	Lack of skilled staff, especially at managerial level.	The project will finance a long-term qualified national financial specialist and a short-term international financial specialist to provide training and improve on the financial management procedures and policies.
	Substantial	Backlog with the preparation and submission of annual financial statements. The draft 2012 financial statements were submitted to OAG in March 2015 and the audited financial statements were approved by the WAF Board in October 2015.  Qualified and adverse audit opinions issued by the OAG.	The draft 2013 and 2014 financial statements were sent to OAG in October 2015 for audit. Once completed the audited financial statements of WAF will be up to date.  The 2010 and 2011 financial statements were qualified and WAF stated that they have worked on the issues raised. The 2012 audited financial statements were approved by the WAF Board in October 2015 and WAF is awaiting the signed audit opinion from OAG.
3. Project-specific Risks	Moderate	A relatively complex project with 2 financiers, including a contract for operations and maintenance.	The project will fully fund a PMU, including a qualified project accountant.
<b>Overall Inherent Risk</b>	<b>Moderate</b>		
<b>B. Control Risk</b> (the risk that the project's accounting and internal control framework are inadequate to ensure project funds are used economically and efficiently and for the purpose intended, and that the use of funds is properly reported).			
1. Implementing Entity	Moderate	The OAG questioned some of WAF's accounting policies.	The PDA project will finance a national finance specialist to assist WAF develop its accounting and internal auditing functions.
2. Funds Flow	Negligible	Separate accounts.	Separate accounts will be maintained for components financed by ADB, EIB and GoF to the PDA project and will be audited by OAG. The PDA project will fund a qualified full-time project accountant in the PMU who will be responsible for this work.
3. Staffing	Moderate	Difficulty in attracting and retaining qualified and experienced staff. Only the CFO is a professional accountant with experience in the preparation of financial statements.	The PDA project will fund a full-time qualified project accountant to handle all project financial work, in accordance with ADB requirements. Regular training on ADB disbursement and financial reporting requirements will be provided.

Risk Type	Risk Assessment Rating	Risk Description	Mitigation Measures
			The PDA project will finance a short-term international financial specialist and a long-term national financial specialist to provide on-the-job training to all WAF finance staff.
4. Accounting Policies and Procedures	Substantial	Accounting treatment of transactions and accounting policies	The financial specialists financed under the PDA project will conduct a detailed review of accounting policies and implement recommendations.
5. Internal Audit	Moderate	WAF has an internal auditing division which started off as a fraud and investigation unit and is still operating this way. The OAG commented on weak internal controls and advised that this is where the internal audit division should concentrate their work on.	An external audit firm has been contracted to carry out audit of systems and controls on an ad hoc basis, due to funding constraints. The financial specialists financed under the PDA project will develop and internal audit program and will train staff to conduct a systems audit to enhance internal controls.
6. External Audit	Substantial	The Financial Management Act 2004 requires that the accounts of all government statutory authorities, be audited by the OAG. The OAG requires the project financial statements at least 2 months before ADB's due date.	The draft 2013 and 2014 financial statements were sent to OAG in October 2015, after the completion of the audit of the 2012 financial statements. The financial specialists financed under the PDA project will review, recommend and implement improvements.
7. Reporting and Monitoring	Substantial	The entity financial statements are long overdue.	PDA project financial reporting and monitoring will be done by the proposed full-time PDA project accountant, outside WAF's reporting system, subject to audit by the OAG. The draft 2012 financial statements were submitted to OAG in march 2015 and the audit was completed in October 2015. The audit of the draft 2013 and 2014 financial statements will be completed in a shorter period of time.
8. Information systems	Substantial	WAF uses an off-the-shelf AccPacc accounting software although an upgrade is needed. WAF also uses separate software for billing and account receivable management (recently migrated to Genprac software) and payroll (Payglobal software). AccPacc, Genprac and Payglobal software are not integrated and the payroll and billing information is captured into the accounting system by using period end journal entries.	The financial specialists funded under the PDA project will review, provide recommendations and implement improvements to the accounting system and the billing system.
<b>Overall Control Risk</b>	<b>Substantial</b>		
<b>Overall Financial Management Risk</b>	<b>Substantial</b>		

\* H = High; M = Moderate; L = Low or Negligible.

ADB = Asian Development Bank; CFO = Chief Financial Officer; EIB = European Investment Bank; GoF = Government of Fiji; IMF = International Monetary Fund; OAG = Office of the Auditor General; PDA = project design advance; PMU = Project Administration Unit; WAF = Water Authority of Fiji.

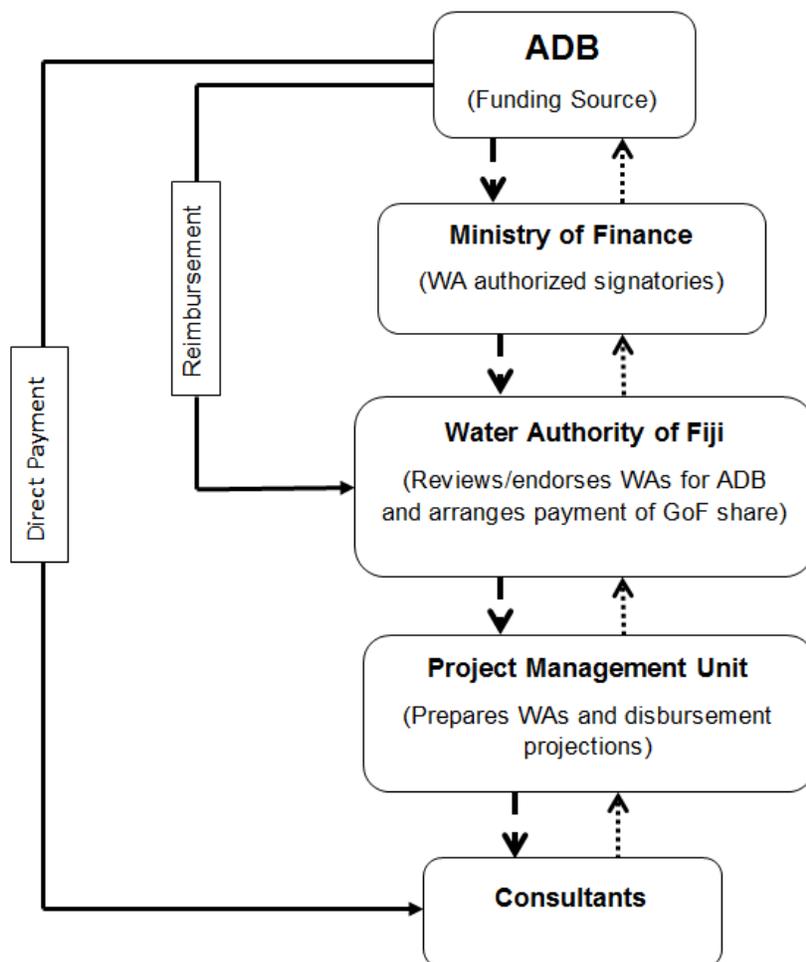
## **B. Disbursement**

The PDA Loan proceeds will be disbursed in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time),<sup>13</sup> and detailed arrangements agreed upon between the Government and ADB. Online training for project staff on disbursement policies and procedures is available at: [http://wpqr4.adb.org/disbursement\\_elearning](http://wpqr4.adb.org/disbursement_elearning). Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

29. Direct payment and reimbursement will be used for consulting services. A PDA project management unit (PMU), including a full-time qualified project accountant, will be established under WAF. The PDA project accountant will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing the withdrawal applications for signature by the authorized signatories at MOF. The MOF will be responsible for uploading the signed withdrawal applications on ADB's Client Portal for Disbursements System or forwarding hardcopies to ADB, for payment.

---

<sup>13</sup> Available at: [http://www.adb.org/Documents/Handbooks/Loan\\_Disbursement/loan-disbursement-final.pdf](http://www.adb.org/Documents/Handbooks/Loan_Disbursement/loan-disbursement-final.pdf)



30. Before the submission of the first withdrawal application, MOF will submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the Government, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US\$100,000 equivalent. Individual payments below this amount should be paid by the EA/IA and subsequently claimed to ADB through reimbursement, unless otherwise accepted by ADB.

31. All disbursements under government financing will be carried out in accordance with regulations of the government and prevailing ADB guidelines.

### C. Accounting

32. The WAF will maintain separate PDA project accounts and records by funding source for all expenditures incurred on the PDA project. PDA project accounts will follow international accounting principles and practices or the national equivalent, acceptable to ADB.<sup>14</sup>

<sup>14</sup> WAF follows the International Financial Reporting Standards.

## D. Auditing

33. The WAF will (i) prepare the annual financial statements for the PDA project, in accordance with accounting principles acceptable to ADB; (ii) have such financial statements audited annually by independent auditors whose qualifications, experience and terms of reference (TOR) are acceptable to ADB, in accordance with international standards for auditing or the national equivalent acceptable to ADB,<sup>15</sup> and (iii) furnish to ADB, not later than 6 months after the end of each related fiscal year, copies of the AFS, audit report and management letter, all in the English language, and other information concerning these documents and the audit thereof as ADB shall from time to time reasonably request.

34. The WAF will also cause the entity-level financial statements to be audited annually, as required under statutory or regulatory requirements by independent auditors acceptable to ADB, in accordance with international standards for auditing or the national equivalent acceptable to ADB. The audited entity-level financial statements will be submitted to ADB annually, for each reporting period, until the loan closing date or as agreed for the purpose of the project. These financial statements will be submitted to ADB in the English language, within one month of their approval by the relevant authority.

35. The annual audit report will include an audit management letter and audit opinions which cover (i) whether the PDA project financial statements present a true and fair view or are presented fairly, in all material aspects, in accordance with the applicable financial reporting framework; (ii) whether loan proceeds were used only for the purposes of the PDA project or not; and (iii) the level of compliance for each financial covenant contained in the legal agreements for the PDA project.

36. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal project supervision, and followed up regularly with all concerned, including the external auditor.

37. The Government and WAF will be made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.<sup>16</sup> ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the Government) or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing, is used in accordance with ADB's policies and procedures.

---

<sup>15</sup> OAG follows the International Standards on Auditing.

<sup>16</sup> ADB Policy on delayed submission of APFS:

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

38. Public disclosure of the PDA project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).<sup>17</sup> After review, ADB will disclose the annual AFS for the PDA project and the opinion of the auditors on the financial statements within 14 days of the date of their receipt, by posting them on ADB's website. The audit management letter will not be disclosed.

---

<sup>17</sup> Available at: <http://www.adb.org/documents/pcp-2011>.

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting

39. All contracting will be undertaken in conformity with ADB's Procurement Guidelines (2015, as amended from time to time) (ADB's Procurement Guidelines)<sup>18</sup> and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time) (ADB's Guidelines on the Use of Consultants).<sup>19</sup> The issuance of invitations to bid under advance contracting will be subject to ADB approval. The Government and WAF have been advised that approval of advance contracting does not commit ADB to finance the PDA project.

40. Advance contracting for the PDA project will include consulting services for concept design, detailed design and project preparatory work; and procurement of laboratory and survey equipment necessary for the consulting services. WAF will carry out recruitment of consultants. The following steps to be concluded for key components in advance for the ensuing proposed project – (i) preparation of tender documents to procure civil works; (ii) evaluation of bids; and (iii) recruitment of supervision consultants.

### B. Procurement of Goods and Consulting Services

41. All consultants will be recruited according to ADB's Guidelines on the Use of Consultants. The TOR for all consulting services are detailed in Section D. An estimated 267 person-months of consulting services are required to (i) facilitate PDA project management and implementation, and (ii) strengthen the institutional and operational capacity of the implementing agency. Consulting firms will be engaged using the quality - and cost-based selection (QCBS) method with a quality cost ratio of 80:20.

42. Before the start of any procurement ADB and the government will review the public procurement laws of the central and state governments to ensure consistency with ADB's Procurement Guidelines.

43. An 18-month procurement plan indicating threshold and review procedures, goods and consulting service contract packages and national competitive bidding (NCB) guidelines is in Section C.

44. All consultants will be recruited according to ADB's Guidelines on the Use of Consultants.<sup>20</sup> Summary TOR for all consulting services are in Section D. Detailed TORs are in Appendix I.

---

<sup>18</sup> Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

<sup>19</sup> Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

<sup>20</sup> Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>

## C. Procurement Plan

### Basic Data

<b>Project Name:</b> Urban Water Supply and Wastewater Management Project	
<b>Project Number:</b> 49001-001	<b>Approval Number:</b> TBA
<b>Country:</b> Fiji	<b>Executing Agency:</b> Ministry of Finance (MOF)
<b>Project Procurement Classification:</b> A	<b>Implementing Agency:</b> Water Authority of Fiji (WAF)
<b>Procurement Risk:</b> Moderate	
<b>Project Design Advance Financing Amount:</b> US \$ 9,350,000 <sup>(1)</sup> <b>ADB Financing:</b> US \$ 2,650,000 <b>Non-ADB Financing:</b> US \$ 6,700,000	<b>Project Closing Date:</b> 31 March 2017
<b>Date of First Procurement Plan:</b> 26 Apr 2015	<b>Date of this Procurement Plan:</b> 27 October 2015

45. On 4th September 2015, the Government of Fiji, Ministry of Finance signed a Memorandum of Understanding with the Asian Development Bank (ADB) for provision of a Project Design Advance (PDA) Loan to enable commencement of detailed designs and project preparatory work. This Procurement Plan covers the scope of consulting services and associated goods to be procured throughout the Project PDA phase only.

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

#### 1. Procurement and Consulting Methods and Thresholds

46. Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods.

Procurement of Goods		
Method	Threshold	Comments
International Competitive Bidding for Goods	\$400,000	To match EIB threshold
National Competitive Bidding for Goods	\$100,000 up to \$400,000	To match EIB threshold
Shopping for "Off-the-shelf" Goods	Below \$100,000	

Consulting Services	
Method	Comments
Quality and Cost Based Selection (QCBS)	Based on WAF return of experience over the recent years, a quality and cost ratio of 80:20 will be applied for the selection of project management consultants, and design and supervision consultants, with the objective of increased quality of the consultancy services provided
Individual Consultant Selection	Individual Consultant Selection might be used to procure grant financed technical assistance consultants for capacity building

47. Section 3 of the present Procurement Plan anticipates that recruitment of consulting services under the project will be through firms. Nevertheless the Executing Agency might consider recruitment of individual consultants through Individual Consultant Selection in accordance with ADB Guidelines on The Use of Consultants (March 2013, as amended from time to time) if and when need arises during the project implementation phase.



## B. Indicative List of Packages Required Under the Project

50. The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

Goods and Works							
Package Number	General Description	Estimated Value	Estimated Number of Contracts	Procurement Method	Review [Prior / Post/Post (Sample)]	Bidding Procedure	Comments

Consulting Services							
Package Number	General Description	Estimated Value	Estimated Number of Contracts	Recruitment Method	Review (Prior / Post)	Type of Proposal	Comments
CS01B	Package 1 (Part B): Project Implementation Support and Capacity Building	US \$ 4,510,000	1	QCBS 80:20 or SSS <sup>(1)</sup>	Prior	FTP	Int'l firm See Note <sup>(2)</sup>
CS02B	Package 2 (Part B): Contract Management and Supervision of Rewa River WSS and Kinoya WWTP Upgrade	US \$ 2,140,000	1	QCBS 80:20 or SSS <sup>(1)</sup>	Prior	FTP	Int'l firm with DBO exp. See Note <sup>(2)</sup>
CS03B	Package 3 (Part B): Contract Management and Supervision of Wastewater System Upgrades & Extension	US \$ 2,460,000	1	QCBS 80:20 or SSS <sup>(1)</sup>	Prior	FTP	Int'l firm See Note <sup>(2)</sup>

<sup>(1)</sup> Possible Single Source Selection for 'Part B' assignments, subject to satisfactory performance of the consultant in the initial 'Part A' assignment.

<sup>(2)</sup> Award of 'Part B' is contingent upon Government of Fiji signing proposed ADB ensuing Project Loan (expected December 2016).

## C. List of Awarded and On-going, and Completed Contracts

51. The following tables list the awarded and on-going contracts, and completed contracts.

## 1. Awarded and On-going Contracts

Goods and Works							
Package Number	General Description	Estimated Value	Awarded Contract Value	Procurement Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award <sup>10</sup>	Comments <sup>11</sup>

<sup>10</sup> Date of ADB Approval of Contract Award is the date of No-Objection letter to the EA/IA.

<sup>11</sup> Indicate the Contractor's name and the contract signing date.

Consulting Services							
Package Number	General Description	Estimated Value	Awarded Contract Value	Recruitment Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award <sup>10</sup>	Comments <sup>12</sup>

<sup>10</sup> Date of ADB Approval of Contract Award is the date of No-Objection letter to the EA/IA.

<sup>12</sup> Indicate the Consulting Firm's name and the contract signing date.

## 2. Completed Contracts

Goods and Works								
Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award <sup>10</sup>	Date of Completion <sup>13</sup>	Comments

<sup>10</sup> Date of ADB Approval of Contract Award is the date of No-Objection letter to the EA/IA.

<sup>13</sup> The Date of Completion is the physical completion date of the contract.

Consulting Services								
Package Number	General Description	Estimated Value	Contract Value	Recruitment Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award <sup>10</sup>	Date of Completion <sup>13</sup>	Comments

<sup>10</sup> Date of ADB Approval of Contract Award is the date of No-Objection letter to the EA/IA

<sup>13</sup> The Date of Completion is the physical completion date of the contract.

**D. Non-ADB Financing**

52. The following table lists goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

Goods and Works				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Comments

Consulting Services				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Comments

## **E. National Competitive Bidding – WAF**

### **1. Regulation and Reference Documents**

53. In accordance with the Public Enterprises Act 1996, as Commercial Statutory Authority, the Water Authority of Fiji is exempted to follow the laws set forth in the Fiji Procurement Regulation 2010.

54. The procedures to be followed for national competitive bidding shall be those set forth for the WAF Policy for Purchase above F\$20,000 as issued in June 2012 and amended in November 2014, and the specific Standard Operating Procedure for Purchase above F\$20,000 as issued in November 2014, with the clarifications and modifications described in the following paragraphs. These clarifications and modifications are required for compliance with the provisions of the ADB Procurement Guidelines (April 2015, as amended from time to time).

### **2. Procurement Procedures**

55. **Application** - Contract packages subject to National Competitive Bidding procedures will be those identified as such in the project Procurement Plan. Any change to the mode of procurement of any procurement package in the Procurement Plan shall be made through updating of the Procurement Plan, and only with prior approval of ADB.

56. **Eligibility** - The eligibility of bidders shall be as defined under Section I of the ADB Procurement Guidelines; accordingly, no bidder or potential bidder should be declared ineligible for reasons other than those stated in Section I of the ADB Procurement Guidelines, as amended from time to time.

57. **Participation in Bidding** - Foreign bidders shall be eligible to participate in bidding under the same conditions as national bidders. Bidding shall not be restricted to any particular class of contractors, and non-classified contractors shall also be eligible to bid. Bidding shall not be subject to preregistration of firms or to mandatory attendance to briefing meeting or site visit and such limitation shall not be stated in the bidding documents as a condition for the submission of bids.

58. **Sanctioning** - Bidders shall not be declared ineligible or prohibited from bidding on the basis of barring procedures or sanction lists, except individuals and firms sanctioned by ADB, without prior approval of ADB.

59. **Preferences** - No preference of any kind shall be given to domestic bidders or for domestically manufactured goods.

60. **Prequalification** - Post qualification shall be used unless prequalification is explicitly provided for in the Procurement Plan.

61. **Advertising** - Bidding of NCB contracts estimated at \$400,000 or more for goods and related services or \$1,000,000 or more for civil works shall be advertised on ADB's website. The Government has the option of requesting ADB to post other notices in the ADB website.

62. **Time for bid preparation** - Invitations to bid shall allow sufficient time for the preparation and submission of bids but this shall be no less than a minimum of twenty-eight (28)

days, such period to begin with the availability of the bid documents or the advertisement, whichever is later.

### 3. Bidding Documents

63. **Standard Bidding Documents** - acceptable to ADB, shall be used. The bidding documents shall provide clear instructions on how bids should be submitted, how prices should be offered, and the place and time for submission and opening of bids.

64. **Qualification Criteria** - shall be clearly specified in the bidding documents, and only criteria so specified, shall be used to determine whether a bidder is qualified. Qualification shall be assessed on a pass or fail basis and merits points shall not be used. Such assessment shall only take into account the bidder's capacity and resources to perform the contract, specifically its experience and past performance on similar contracts, capabilities with respect to personnel, equipment, and construction and manufacturing facilities and financial capacity. The evaluation of the bidder's qualifications should be conducted separately from the technical and commercial evaluation of the bid.

### 4. Bid Opening and Bid Evaluation

65. The following shall be observed:

- (a) Bids shall be opened in public, immediately after the deadline for submission of bids. The name of the bidder, the total amount of each bid, and any discounts shall be read aloud and recorded in the minutes of the public bid opening.
- (b) Evaluation of bids shall be made in strict adherence to the Qualifications and Evaluation Criteria stipulated in the bidding documents.
- (c) No bidder shall be rejected merely on the basis of a comparison with the employer's estimate and budget ceiling without ADB's prior concurrence.
- (d) The Contract shall be awarded to the technically responsive bidder that offers the lowest evaluated price, and meets the qualifying criteria. In determining the lowest evaluated price, the following are to be considered: (i) bid price, as offered, (ii) arithmetical corrections on the bid price, if any, and (iii) other evaluation criteria stated in the bidding document that are quantified in monetary terms.

66. **Rejection of all Bids and Rebidding** - WAF shall not reject all bids and solicit new bids without ADB's prior concurrence. Even when only one or a few bids is/are submitted, the bidding process may still be considered valid if the bid was satisfactorily advertised and prices are reasonable in comparison to market values.

67. **No Negotiations** - There shall be no negotiations, even with the lowest evaluated bidder, without ADB's prior concurrence. A bidder shall not be required, as a condition of award, to undertake obligations not specified in the bidding documents, or otherwise, to modify the bid as originally submitted.

68. **Publication of the Award of Contract** - should include: (a) name of each bidder who submitted a bid; (b) bid prices as read out at bid opening; (c) name and evaluated price of each bid; (d) name of bidders whose bids were rejected; and (e) name of the winning bidder; upon request, WAF shall inform unsuccessful bidders of the reasons of their rejection.

69. **Handling of Complaints** - If any complaint is received from any bidder in a contract award procedure using ADB funds, details of the complaint and complainant shall immediately be

forwarded to ADB and WAF shall cooperate fully in any action ADB deems appropriate to take to mitigate its risk. WAF shall respond promptly in writing to unsuccessful bidders who seek explanations on the grounds on which their bids are not selected.

70. Fraud and Corruption - ADB shall declare a firm or individual ineligible, either indefinitely or for a stated period, to be awarded a contract financed by ADB, if it at any time ADB determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, a contract financed by ADB.

71. Right to inspect/audit - Each bidding document and contract financed from the proceeds of ADB financing shall include a provision requiring bidders, suppliers, contractors and subcontractors to permit ADB to inspect their accounts and records relating to the bid submission and performance of the contract and to have said accounts and records audited by auditors appointed by ADB. The deliberate and material violation by the bidder, supplier, contractor or subcontractor of such provision may amount to obstructive practice.

#### **5. ADB Policy Clauses**

72. A provision shall be included in all NCB works and goods contracts financed by ADB requiring suppliers and contractors to permit ADB to inspect their accounts and records and other documents relating to the bid submission and the performance of the contract, and to have them audited by auditors appointed by ADB.

73. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that the Government shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the contract in question.

74. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that ADB will declare a firm or individual ineligible, either indefinitely or for a stated period, to be awarded a contract financed by ADB, if it at any time ADB determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or any integrity violation in competing for, or in executing, ADB-financed contract.

#### **F. Consultant's Terms of Reference**

75. The PDA will allow the government to finance consulting services to help complete detailed engineering design and preliminary designs for the ensuing project. Consulting services required to support implementation of the ensuing project will be financed from a different source. For this reason, the consulting services are split into 2 separable portions: Part A: which includes concept design, detailed design, tendering of works and project preparatory work to be financed under PDA; and Part B: Supervision of Civil Works, Design-Build Operate Contracts and Support to Project Implementation to be financed under the ensuing project subject to successful completion of Part A and confirmation of project financing by the Government of Fiji.

76. The Government of Fiji will evaluate both Part A and B of the consulting service proposals. Part A is to be financed under the PDA. Financing and award of Part B will be subject to approval of the investment project by the Government of Fiji.

77. The three consulting packages required are:

- Package 1:** Project Preparatory Work, Implementation Support and Capacity Building  
**Part A:** Project Preparatory Work and Capacity Building  
**Part B:** Project Implementation Support and Capacity Building
- Package 2:** Concept design and DBO contract management and supervision of Rewa River Water Supply Scheme and Kinoya Wastewater Treatment Plant Upgrade  
**Part A:** Concept design and tendering of DBO Contract for Rewa River Water Supply Scheme and Kinoya Wastewater Treatment Plant Upgrade  
**Part B:** Peer review of detailed designs, DBO contract management and supervision of Rewa River Water Supply Scheme and Kinoya Wastewater Treatment Plant Upgrade
- Package 3:** Detailed Design and Supervision of Wastewater System Upgrades & Extension  
**Part A:** Detailed Design of Wastewater System Upgrades & Extension  
**Part B:** Contract Management and Supervision of Wastewater System Upgrades & Extension

78. Detailed TOR for each package are included in Annex 1.

## VII. SAFEGUARDS

79. Pursuant to ADB's Safeguard Policy Statement (2009) (SPS),<sup>21</sup> ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the SPS. All financial institutions will ensure that their investments are in compliance with applicable national laws and regulations and will apply the prohibited investment activities list (Appendix 5) to subprojects financed by ADB.

80. The PDA finances only consulting services for detailed design and project preparatory work and is categorized C for environment, involuntary resettlement and indigenous people. During the preparation of the ensuing project, draft initial environmental examination and land acquisition resettlement plan and frameworks have been carried out for the safeguard impacts of the ensuing project and it is expected categorization B for involuntary resettlement and environment, and categorization C for indigenous peoples. The PDA-financed consultants will update and finalized the initial environmental examination, environmental management plan and land acquisition and resettlement plan for the ensuing project, in compliance with ADB's Safeguard Policy Statement (2009). The consulting services under Project Preparatory Work include an environmental and resettlement specialist.

81. Prohibited investment activities. Pursuant to ADB's Safeguard Policy Statement (2009) (SPS), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the SPS.

<sup>21</sup> Available at: <http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf>

## VIII. GENDER AND SOCIAL DIMENSIONS

82. A poverty reduction and a social assessment have been carried out as part of project preparation. However, additional consultations throughout the project cycle will strengthen participation of the poor and vulnerable in project implementation. Affected people will be consulted through village meetings, social surveys, and informant interviews: (ii) during detailed design and project preparatory work; (iii) before and during construction; and (iv) during operation, maintenance, and monitoring. The consultants under the PDA will support WAF and the Ministry of Health to carry out a water supply, hygiene and sanitation campaign in project areas and particularly in informal settlements benefiting from the project. In addition, WAF will appoint dedicated staff to improve service delivery for informal settlements and other vulnerable groups and will establish a technical working group with participation from the Department of Housing and Department of Social Welfare among others. This technical group will avoid duplication of efforts and develop a coherent strategy to ensure informal settlements benefit – possibly guided by the findings of the PRIF water and sewerage tariff review study - from the project by identifying subsidies and/or payment terms to help with connection fees, agreeing on criteria and common procedures to access WAF subsidized services, and coordinating community facilitation and implementation of works in informal settlement areas. Two national community education and training officers and an international communications specialist will be recruited under the PDA.

83. A draft gender strategy has been developed for the ensuing project. An international gender specialist to be recruited under the PDA will review the project gender action plan and establish a baseline for monitoring and reporting for the ensuing project with sex disaggregated indicators and will organize a workshop with WAF management to ensure they are familiar with the gender action plan.

## IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

### A. Monitoring and Evaluation

84. **PDA Project performance monitoring:** PDA Project performance will be monitored based on bi-monthly reports and consolidated semi-annual reports provided by the WAF as agreed. These reports will include: (a) progress achieved by activity as measured against the implementation schedule, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months. To ensure PDA projects continue to be both viable and sustainable, PDA project financial statements, together with the associated auditor's report, should be adequately reviewed. Only in the event that an ensuring loan is not approved, will the Ministry of Finance submit a PDA project completion report to ADB within six months of physical completion of the PDA project.<sup>22</sup>

85. **Compliance monitoring:** Loan covenants on policy and regulations, legal, financial, economic, environmental, and gender will be monitored regularly through various reports (bi-monthly reports and semi-annual reports) and discussions during review missions. Progress with regards to the following undertakings will be included in the monitoring report:

- (i) National Liquid Trade Waste Program;
- (ii) Sludge treatment disposal practices and standards for municipal wastewater treatment

<sup>22</sup> Project completion report format is available at: <http://www.adb.org/sites/default/files/pai-6-07-a.pdf>

- for Kinoya WWT Plant;
- (iii) Discharge license for Kinoya WWT plant;
- (iv) Water and wastewater tariff review and progress on budget allocations for O&M and capital expenses necessary for WAF to implement any social and community obligations agreed to with government for access to services by vulnerable groups, particularly in informal settlements;
- (v) Aquarating assessment;
- (vi) Corporatization of WAF;
- (vii) Strengthening of financial management of WAF;
- (viii) Water catchment plans to protect existing and proposed new water intakes;
- (ix) Discussions and agreements by technical working group with participation from WAF, the Department of Housing and Department of Social Welfare to ensure community facilitation and implementation of works in informal settlement areas.

86. **Safeguards monitoring:** During project implementation, WAF will prepare bi-monthly and semi-annual monitoring reports that describe the progress of environment and resettlement activities.

### B. Reporting

87. The MOF will provide ADB with:
- (i) PDA project's quarterly progress reports in a format consistent with ADB's project performance reporting system;
  - (ii) consolidated semi-annual reports including (a) progress achieved by output as measured through the performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 6 months;<sup>23</sup> and
  - (iii) PDA project accounts and the executing agency AFSs, together with the associated auditor's report,

### C. Stakeholder Communication Strategy

88. WAF will maintain and regularly update its website with information on the PDA project, and regularly consult with the public and civil society organizations in respect of each of the foregoing matters.

Document	Means of Communication	Responsible Party	Frequency	Audience
Project Information Document	ADB Website	ADB	Quarterly updates	General Public
Initial Environmental Examination Report	ADB's, Department of Environment and WAF website, public consultation and leaflets for affected people	ADB, Department of Environment and WAF	IEE to be posted on the websites before the project loan approval; documents available online and monitoring reports updated semi-annually. EMP updated regularly	General public and project affected area
Land and Acquisition Resettlement Plan (LARP)	ADB's, Department of Environment and WAF website, public consultation and leaflets for affected	ADB and WAF	LARP to be posted on the websites before the project loan approval; documents available online and monitoring reports updated semi-annually and	General public and project affected area

<sup>23</sup> The regional departments will present the performance of the completed PDA in the project completion report of the ensuing loan. See para. 51 of ADB. 2013. [Project Design Advance](#). *Staff Instruction*. Manila.

	people		every time the LARP is revised	
PDA Paper	ADB's website	ADB	No later than 14 days of Board approval of the PDA	General Public
PDA Grant Agreement	ADB's website and WAF website	ADB	No later than 14 days of Board approval of the PDA	General Public
PDA Project Administration Manual (PAM)	ADB's website and WAF website	ADB	No later than 14 days of Board approval of the PDA, always available after update	General Public

## **X. ANTICORRUPTION POLICY**

89. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the PDA project.<sup>24</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all PDA project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the PDA project.<sup>25</sup>

90. To support these efforts, relevant provisions are included in the loan agreement and the bidding documents for the PDA project.

## **XI. ACCOUNTABILITY MECHANISM**

91. People who are, or may in the future be, adversely affected by the PDA project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted PDA projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>26</sup>

## **XII. RECORD OF PAM CHANGES**

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

<sup>24</sup> Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

<sup>25</sup> ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>

<sup>26</sup> For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

## ANNEX I

### A. DETAILED TERMS OF REFERENCE

#### BACKGROUND OF THE ASSIGNMENTS

1. Fiji has a population of approximately 868,000, of which 57% reside in the Greater Suva Area (GSA).<sup>27</sup> GSA accounts for 40% of the country's gross domestic product, but despite its economic importance, urban infrastructure and services have not kept pace with growth. This is contributing to environmental degradation and increased health risks, and acts as a binding constraint on social and economic development. The improved delivery of urban water supply and sanitation services is a high priority of government.<sup>28</sup> Rapid urban growth requires expansion of existing capacity and improvement of the water and sewerage service delivery and wastewater regulatory framework. In April 2014 ADB approved a capacity development technical assistance<sup>29</sup> in the amount of \$1.15 million to support the Government of Fiji to develop an urban master plan for the GSA as well as to support the Water Authority of Fiji (WAF) to prepare a project based on priority investments in the WAF draft water supply and sewerage master plan 2013-2033.<sup>30</sup> The following priorities and outputs have been identified as priority investment to be financed in a future project:

2. **Component 1:** WAF increases access to reliable and safe water supply in the GSA. The Waimanu River is the major raw water source for both the Waila and Tamavua water treatment plants which currently serve the GSA. Both water treatment plants are running 24 hours at full capacity and at times cannot meet peak demands. This output will (i) increase potable water production by 30,000 m<sup>3</sup> per day from a new independent source on the Rewa River; and (ii) reduce Non-Revenue Water (NRW) due to technical and non-technical losses.

3. **Component 2:** WAF increases sewer coverage, capacity and reliability of Wastewater Treatment processes in the GSA. Current planning regulations ban high-density urban development in unsewered areas. Existing sewerage infrastructure covers only 36% of the GSA and the main waste water treatment (WWT) facility in the GSA is currently working at full capacity. This output will (i) increase WWT capacity of Kinoya to approximately 277,000 equivalent population (EP); (ii) upgrade around 31 existing wastewater pumping stations; (iii) upgrade / duplication of around 18km of wastewater trunk mains and the relining / replacement of around 13.4km of wastewater trunk mains; and (iv) extend sewerage services to an additional 15% of households (approximately 4500 lots).

<sup>27</sup> United Nations Statistics Division. Country Profile: Fiji. <http://data.un.org/CountryProfile.aspx?crName=FIJI> (accessed 20 September 2013)

<sup>28</sup> Government of Fiji. 2009. Roadmap for Democracy and Sustainable Socio-Economic Development, 2010–2014. Suva. Government of Fiji. 2014. A Green Growth Framework for Fiji: *Restoring the Balance in Development that is Sustainable for our Future*. Suva.

<sup>29</sup> ADB. 2013. *Technical Assistance to Fiji for Urban Development Planning and Institutional Capacity Building*. Manila.

<sup>30</sup> The master planning exercise was carried out by WAF with the noted technical support from ADB. Identification of growth areas and development of population growth scenarios were carried out in close collaboration with the Department of Town and Country Planning, and were based on the draft Urban Growth Master Plan for GSA 2013-2033. It is important to note that these documents are projected from the year 2013 employing the existing state of infrastructure from 2013 as the baseline. The Water and Sewerage Master Plan 2013-2033 remain in draft form pending completion of consultation and endorsement by WAF Board and pertinent government authorities.

4. **Component 3:** WAF management and sustainable service delivery capacity. WAF manages both water and wastewater services across Fiji in accordance with its delegated functions and powers. Since becoming a statutory authority in 2010, WAF has been focusing on operational improvements but has yet to be fully corporatized and key areas need to be strengthened to be able to improve its financial sustainability and to be more accountable to regulatory bodies. In addition, government will address water and sewerage tariff reform, liquid trade waste and municipal waste water regulations. Both the former and latter initiatives will be conducted through a series of robust policy/regulation impact analysis studies where implications for reforms are carefully considered and appropriate remedial measures are put forward alongside justifications for the agreed (by the government and all relevant parties) course of action.

5. A Project Design Advance (PDA) loan for \$7.5 million has been requested by the Government of Fiji to support: (i) detailed engineering design for the ensuing project; (ii) preliminary design and advance procurement for the proposed Design-Build Operate (DBO) contracts under the ensuing contract; (iii) completion of social and environmental safeguards due diligence and pre implementation work; and (iv) capacity building to improve wastewater policies and regulations.

6. The PDA will allow the government to finance consulting services to help complete preliminary and detailed engineering designs and tender documentation for the ensuing project. Consulting services required to support implementation of the ensuing project will be financed from a different source. For this reason, the consulting services will be split into 2 separable portions for the contracts.

7. **Part A:** which includes concept design, detailed design, tendering of works and project preparatory work to be financed under PDA; and **Part B:** contract management and supervision of construction works contracts, DBO contracts and provision of general support to project implementation activities be financed under the ensuing project

8. The Government of Fiji will evaluate both Part A and B of the consulting service proposals. Part A is to be financed under the PDA. Financing and award of Part B will be subject to approval of the investment project by the Government of Fiji.

The three consulting packages required are:

**Package 1:** Project Preparatory Work, Implementation Support and Capacity Building

**Part A:** Project Preparatory Work and Capacity Building

**Part B:** Project Implementation Support and Capacity Building

**Package 2:** Concept design and DBO contract management and supervision of Rewa River Water Supply Scheme and Kinoya Wastewater Treatment Plant Upgrade

**Part A:** Concept design and tendering of DBO Contract for Rewa River Water Supply Scheme and Kinoya Wastewater Treatment Plant Upgrade

**Part B:** Peer review of detailed designs, DBO contract management and supervision of Rewa River Water Supply Scheme and Kinoya Wastewater Treatment Plant Upgrade

**Package 3:** Detailed Design and Supervision of Wastewater System Upgrades & Extension

<b>Part A:</b>	Detailed Design of Wastewater System Upgrades & Extension
<b>Part B:</b>	Contract Management and Supervision of Wastewater System Upgrades & Extension

**TERMS OF REFERENCE FOR PACKAGE 1** - Project Preparatory Work, Implementation Support and Capacity Building

9. A Project Management Unit (PMU) will be established and housed with WAF and it will oversee overall implementation of project preparatory activities supported by the PDA as well as activities to be financed under the ensuing project. It will work in close collaboration with the Project Steering Committee and other key stakeholders. The project director of the PMU will be the appointed WAF General Manager.

10. A consulting firm will be recruited to support the PMU to complete project preparatory work and provide capacity building and to implement the ensuing project. The consulting firm is expected to be mobilized in January 2016 and complete Part A of the assignment by January 2017. Part B of the assignment will then commence in February 2017 to December 2023.

11. **Scope of the Assignment for Part A - Project Preparatory Work and Capacity Building:**

- (i) support WAF with the design of a water demand management program, NRW program and the national liquid trade waste program;
- (ii) support the Department of Environment with the review of the environmental regulatory framework for municipal WWT discharge as well as sludge treatment and disposal practices and standards;
- (iii) assist the government and WAF to prepare a road map to complete the corporatization of WAF, including transfer of assets, governance arrangements, greater financial sustainability and the retention of revenue within WAF;
- (iv) assist the MLGHE and WAF with formulation of water safety plans to protect the quantity and quality of the water at the intakes for all the water sources in the project area (this should consist of developing land use plans and ensuring required protective measures are in place for all water source locations);
- (v) review policies used by WAF in financial reporting and supporting the implementation of changes to WAF accounting policies and financial management, including the provision of accounting training;
- (vi) prepare a strategy to support the promotion of gender equity within WAF business practices and establish baseline for monitoring and reporting for the ensuing project;
- (vii) finalize IEEs and EMPs for proposed investments in the ensuing project in accordance with ADB Guidelines;
- (viii) finalize the LARP for the proposed investments in the ensuing project in accordance with ADB Guidelines;
- (ix) review the screening and categorization process used to categorize each sub-project under the ensuing project. If re-categorization is required, to complete the appropriate safeguard categorization forms and submit for review and subsequent approval of the category by ADB.
- (x) prepare a communication strategy for the ensuing project, and particularly to support any reviews to water and sewerage tariff;
- (xi) design a public awareness campaign and community participation strategy in informal settlements to be affected by the project;

- (xii) coordinate PDA activities and consolidate reports to be submitted to the EA and ADB;
- (xiii) monitor the quality and timeliness of all projects/activities and ensure that the PDA and ensuing project Steering Committee (PSC) is aware of progress and able to influence program;
- (xiv) ensure the PDA project is implemented in accordance to the PDA project covenants and assurances as described in the PDA loan agreement and the PDA PAM;
- (xv) ensure that all inputs to the program are directed toward achieving objectives, in line with the PDA PAM and PDA loan agreement;
- (xvi) represent the PMU on the PDA project procurement committee and liaise with WAF Board and CEO on facilitating decisions;
- (xvii) deploy effective coordination arrangements with all PDA project activities; and
- (xviii) support WAF through capacity building in PMU personnel specialisms; organizing workshops and training opportunities as appropriate to build up the expertise of WAF staff where appropriate.

**The consultants will deliver the following for Part A:**

<b>Task</b>	<b>Deliverables</b>
Provide technical assistance to WAF to reduce NRW	<ul style="list-style-type: none"> <li>- Prepare a report with recommendations and an implementation road map to establish DMAs within GSA.</li> <li>- Prepare a report with recommendations and an implementation road map to improve leak detection and reduction of technical losses within GSA.</li> <li>- Provide training courses to WAF staff to improve capacity on leak detection and reduction of technical losses.</li> </ul>
Support WAF with implementation of National Liquid Trade Waste Program	<ul style="list-style-type: none"> <li>- Review the National Liquid Trade Waste Program and prepare report with a road map for an Implementation Strategy, identifying human resources required to ensure its monitoring and enforcement.</li> <li>- Prepare a report identifying most polluting industries and commercial entities recommending a strategy to support them in reducing pollutants.</li> </ul>
Review current monitoring and enforcement procedures and strengthen the capacity of WAF Environment Unit and the Department of Environment to monitor Kinoya WWTP and municipal discharges	<ul style="list-style-type: none"> <li>- Prepare a report recommending a road map for an implementation strategy for the WAF Environment Unit and the Department of Environment to strengthen capacities and improve current practices to meet standard sludge treatment and disposal practices.</li> </ul>
Support corporatization of WAF	<ul style="list-style-type: none"> <li>- Prepare a report with a road map to complete corporatization of WAF including transfer of assets, governance arrangements, greater financial sustainability and the retention of revenue within WAF. The road map should consult all key stakeholders and include organizational changes and resources required to implement these changes as well as a timeline and TORs for any experts needed to support government with this process.</li> </ul>
Support WAF and Department of Town and Country Planning with formulation of water catchment plans to protect intakes water quality and quantity.	<ul style="list-style-type: none"> <li>- Prepare a report with 2 water catchment plans and draft regulations to be gazetted to protect the quantity and quality of the water at the intakes for the two raw river water sources in the project area (this should consist of developing land use plans and ensuring required protective measures are in place for all water</li> </ul>

Task	Deliverables
	source locations).
Strengthen WAF financial management.	<ul style="list-style-type: none"> <li>- Review policies used by WAF in financial reporting and prepare a report with recommendations and a strategy to implement necessary changes to WAF accounting policies and financial management.</li> <li>- Provide accounting and financial management training to key WAF departments to build necessary capacity.</li> </ul>
Support the promotion of gender equity within WAF business practices.	<ul style="list-style-type: none"> <li>- Review the project gender action plan and establish a baseline for monitoring and reporting for the ensuing project with sex disaggregated indicators.</li> <li>- Organize a workshop with WAF management to ensure they are familiar with the gender action plan.</li> </ul>
Support WAF meeting ADB environmental due diligence for the loan project.	<ul style="list-style-type: none"> <li>- Review draft IEEs and EMPs for proposed investments in the ensuing project in accordance with ADB Guidelines.</li> </ul>
Support WAF meeting ADB land acquisition and resettlement due diligence for the loan project.	<ul style="list-style-type: none"> <li>- Review and finalize the draft RP for the proposed Rewa river intake, water treatment plant, pumping station and water reservoir.</li> <li>- Prepare a Land Acquisition and Resettlement Framework (LARF) for anticipated land acquisition in the loan project in accordance with ADB Guidelines;</li> </ul>
	<ul style="list-style-type: none"> <li>- Prepare a communication strategy for the ensuing project, and particularly to support any reviews to the water and sewerage tariff.</li> </ul>
	<ul style="list-style-type: none"> <li>- Design a public awareness campaign and prepare a community participation plan in particular for informal settlements to be affected by the project.</li> </ul>
Coordinate PDA activities and prepare consolidated reports to be submitted to the EA and ADB.	<ul style="list-style-type: none"> <li>- Prepare PDA quarterly monitoring reports and brief all stakeholders.</li> </ul>
Monitor the quality and timeliness of all projects/activities and ensure that the PDA and ensuing project steering committee (PSC) is aware of progress and able to influence program.	<ul style="list-style-type: none"> <li>- Conduct PDA Coordination Committee meetings every 2 months and in consultation with the Chair and key stakeholders prepare the agenda and minutes of the meeting.</li> </ul>
PDA project is implemented in accordance with the PDA loan agreement and PAM.	<ul style="list-style-type: none"> <li>- Monitor covenants and assurances as described in the PDA loan agreement and PAM and report on compliance in the quarterly monitoring reports.</li> </ul>
Support WAF with technical evaluation of bidding proposals and represent the PMU on the PDA project procurement committee.	<ul style="list-style-type: none"> <li>- Prepare a report with technical evaluation of bidding proposals for the project.</li> <li>- Prepare Draft Bid Evaluation Reports for project bids.</li> </ul>
Support WAF through capacity building in PMU personnel specialisms; organizing workshops and training opportunities as appropriate to build up the expertise of WAF staff where appropriate.	<ul style="list-style-type: none"> <li>- Deliver a training every month for WAF staff on a pre-agreed topic with WAF General Management.</li> </ul>

**Scope of the Assignment for Part B: Project Implementation Support and Capacity Building:**

The consultants will continue to support WAF with policy and capacity building activities that were commenced in Part A and with the implementation of the ensuing project. In addition, the consultants will:

- (i) support WAF with the implementation the water demand management program, NRW program and the national liquid waste trade program;
- (ii) support the Department of Environment with the monitoring and enforcement of the environmental regulations for municipal WWT discharge as well as sludge treatment and disposal practices and standards;
- (iii) assist the government and WAF with implementation of measures to complete the corporatization of WAF, including transfer of assets, governance arrangements, greater financial sustainability and the retention of revenue within WAF;
- (iv) assist the MLGHE in implementing land use plans and ensuring required protective measures are in place for all water source locations;
- (v) support WAF with the implementation of changes to WAF accounting policies and financial management, including additional accounting training sessions if needed;
- (vi) support implementation of the gender equity strategy within WAF business practices and review baseline for monitoring and reporting for the project;
- (vii) ensure effective implementation of EMPs and the LARP for proposed investments in the project in accordance with ADB Guidelines;
- (viii) implement the communication strategy for the project, and particularly to support reviews to the water and sewerage tariff;
- (ix) implement the public awareness campaign and community participation strategy in informal settlements affected by the project;
- (x) coordinate all project activities and consolidate reports to be submitted to the EA and ADB;
- (xi) monitor the quality and timeliness of all projects/activities and ensure that the project Steering Committee (PSC) is aware of progress and able to influence program;
- (xii) ensure the project is implemented in accordance to the project covenants and assurances as described in the loan agreement and the PAM;
- (xiii) ensure that all inputs to the program are directed toward achieving objectives, in line with PAM and loan agreement;
- (xiv) represent the PMU on the project procurement committee and liaise with WAF Board and CEO on facilitating decisions as required;
- (xv) deploy effective coordination arrangements with all project activities;
- (xvi) support WAF through capacity building in PMU personnel specialisms; organizing workshops and training opportunities as appropriate to build up the expertise of WAF staff;
- (xvii) undertake spot checks with Works Unit of works quantities presented for payment, and report on the quantity and quality of all works;
- (xviii) report regularly to the PMU on progress and performance of civil works, and identify any critical issues which require attention;
- (xix) identify any QA issues in the project arising from the design and construction of physical works, and bring these to the attention of the PMU, if they are not able to be promptly and effectively resolved at site;
- (xx) undertake regular field visits to all project sites to monitor implementation and supervision of project physical works, to confirm that specified quality, safety and environmental

- standards are being achieved and contribute to resolving any QA issues arising;
- (xxi) assist to manage/participate in programs for on-site audit checks during the execution of physical works (construction and maintenance), of quality control, and provide advice on remedial actions as required;
  - (xxii) conduct independent site audits of quantities and quality of works certified by the Design and Supervision consultants appointed as employer's representative / Engineer of contract;
  - (xxiii) assist WAF with management and resolution of any contractual claims and / or disputes arising under the consultant engagements and works contracts;
  - (xxiv) develop and deliver training to PMU on grant disbursement, withdrawal applications and accounting procedures;
  - (xxv) support PMU on all activities relating to contract administration;
  - (xxvi) assist the PMU to effectively manage the financial aspects of the project in a timely coordinated manner;
  - (xxvii) liaise with WAF and MOF and report on all financial and accounting aspects of the project as required;
  - (xxviii) establish monitoring and evaluation systems for each output and activity and report results at regular intervals to the PMU, the PSC and ADB;
  - (xxix) support the PMU in preparing annual and quarterly work plans, budgets and their revisions, semi-annual safeguards monitoring reports, and quarterly and annual progress reports; and ensure quarterly reports reflect project progress and comply with Government and ADB reporting requirements;
  - (xxx) if required, act as the international liaison between ADB, the PMU and the PSC;
  - (xxxi) on a quarterly basis, discuss with PMU progress and performance of all projects components and identify any critical issues which require attention;
  - (xxxii) develop and manage a comprehensive database to monitor indicators and results of the individual components based on the Design and Monitoring Framework (DMF), in collaboration with respective project teams; and
  - (xxxiii) identify performance targets and indicators, including gender disaggregated indicators, for the individual subproject investments.

#### Project Management Unit: Estimated Person's months

Position	Part A person months	Part B person months	Total person months
<b>International Consultants</b>			
Project Management Unit Team Leader	11	37	48
Environmental Management Specialist	11	37	43
Financial Specialist	3	3	6
Senior Resettlement Specialist	11	13	24
Human Resource Specialist	1.5	0.5	2
Demand Management Specialist (TA)	11	19	30
NRW Specialist (TA)	11	19	30
SOE Reform Specialist (TA)	3	3	6
Gender Specialist	3	3	6
Communications Specialist	3	3	6
<b>SUB TOTAL (International)</b>	<b>69.5</b>	<b>137.5</b>	<b>207</b>

Position	Part A person months	Part B person months	Total person months
<b>National Consultants</b>			
Financial Specialist	11	13	24
Project Accountant	11	13	24
Computer Design Specialist	2	0	2
Community Education & Training Officer (2 people)	22	38	60
<b>SUB TOTAL (National)</b>	<b>46</b>	<b>64</b>	<b>110</b>
<b>GRAND TOTAL</b>	<b>115.5</b>	<b>201.5</b>	<b>317</b>

### Project Team Profile and Specific Tasks:

#### Project Management Unit Team Leader

12. **Qualifications and experience:** The Project Management Unit Team Leader will have a degree in civil engineering, environmental science or equivalent degree and at least 15 years' experience in water supply and wastewater management with government, private sector. He or she will have at least 5 years of experience managing infrastructure projects for ADB or WB and preferably at least 3 years of experience working in Pacific countries.

13. **Specific Task:** The Project Management Unit Team Leader will be responsible for the management of the specialist's team, overall coordination and communication with WAF and ADB/EIB and quality and timely delivery of the team outputs. The Project Management Unit Team Leader responsibility includes:

- (i) Engagement, coordination and management of PMU specialist consultants and associated resources
- (ii) Management of TA engagement/s for institutional capacity building and project management support to WAF
- (iii) Coordination and management of all procurement activities in accordance with the Project procurement plan and general ADB/EIB procurement requirements
- (iv) Advise & support WAF General Manager and Senior Project Manager counterparts on scoping, preparation of pre-qualification and bidding documents,
- (v) Monitor WAF tender processes and assist with clarification of proposals / bids.
- (vi) Oversee WAF evaluation of bids and preparation of bid evaluation report submissions to ADB.
- (vii) Monitor overall progress of the Project against implementation program and maintain updated program
- (viii) Monitor expenditure against overall Project budget and prepare updated expenditure forecasts on a monthly basis.
- (ix) Monthly project reporting (works & capacity building) to Implementing Agency (WAF General Manager).
- (x) Advise and support Implementing Agency in fulfilment of the contractual role of 'Employer' (as defined in FIDIC contract documents).
- (xi) Verification and submission of payment certificates and contractor invoices to Implementing Agency (WAF General Manager)

#### Environmental Management Specialist

14. **Qualifications and experience:** The environmental management specialist will have a degree in biology, environmental science or equivalent degree and at least 10 years' experience in a similar role with government, private sector or with international development agencies. He or she will have previous experience with environmental monitoring for ADB or WB projects and preferably at least 3 years of experience in Pacific countries and with water utilities.

15. **Specific Tasks:** The environmental management specialist will initially support the finalization of IEEs and EMPs for proposed investments in the ensuing project in accordance with ADB Guidelines. In this early stage they will also support the environmental audit of existing facilities identified for rehabilitation and recommend any corrective measures if necessary. In addition the specialist will provide capacity support for environment critical development initiatives for the ensuing project within WAF and with the Department of Environment, such as the review of the environmental regulatory framework for municipal WWT discharge as well as sludge treatment and disposal practices and standards. The specialist will also ensure compliance with the project's environmental covenants and assurances and will support PMU to monitor implementation of the environmental management plans by the contractors. He/she will be responsible for reviewing prepared environmental reports from the contractor as required by the project monitoring arrangements.

#### **Monitoring Implementation of Environmental Plans**

- (i) The environmental role of contractors is a key to successful management of project construction. As a partner with WAF in this endeavor, the selected Contractor will undergo an environmental orientation to the principals and practices of both ADB and the Government of Fiji, to be provided by the environmental management specialist together with the WAF environmental unit. Following this initial period, key contractor activities would include:
- (ii) Initial presentation: It is recommended that before beginning their work the Contractor meet with WAF Environment Unit and present environmental management plan for their part of the project (Rewa site, pipelines, Waitolu res. or all), following guidance in the ADB IEE EMP (a copy of the ADB IEE EMP will be attached to the Contractor's contract and similarly, a copy was attached to the bidding documents also). The WAF environment unit will review the contractor's plan at that time and make any necessary changes;
- (iii) Schedule: The contractor's plan will give a schedule for reporting per each EMP mitigation, with exact dates of when report is due – daily, weekly, monthly. Progress and review meetings on mitigation with WAF engineers and WAF environment unit will also be scheduled;
- (iv) Reports: The format will include as a minimum (and will be approved by WAF environment unit) the following, which may be modified to suit each mitigation activity: (i) Name of report writer and contact information; (ii) Description of mitigation activity; (iii) Status of activity (as relevant) – preparation, construction, monitoring; (iv) Issues to be addressed and recommended solutions; (v) Photos of site, progress, problems and other relevant factors;
- (v) Management: The contractor will provide sufficient personnel to manage the mitigation activities at all sites. The full-time supervisor of all these personnel will be qualified with a Bachelor's degree in an appropriate environmental/natural science/physical science discipline. This person will be available with a mobile. All contractor mitigation staff will be provided with mobile phones, pens, clipboards and forms for filling out daily on activities at their site (trenching, levelling, excavation, drilling, concrete pouring, building construction, soil stabilization, etc.);

- (vi) Monitoring: WAF environmental section (or independent Environmental Management Representative) undertake a regular site audit (every 2 or 4 weeks) and prepare a report on contractor's conformance with CEMP and list of corrective actions. Key issues are usually discussed with the contractor's environmental representative on site and a copy of the inspection report should be issued within 1 day of the visit. The contractor shall be obligated to rectify all non-conformances / complete all corrective actions and return a copy of the report with details of all measures undertaken (usually photographic including details) within 3 – 5 days.

### **Strengthening WAF Environment Unit**

- (i) For carrying out the responsibilities for the project, as well as a facilitator of recommendations of the IEE, the WAF environmental unit will require support, not only in staff resources, but in knowledge, supplies and equipment.
- (ii) The environmental specialist will deliver training on the following range of topics: technical report writing, data base development and maintenance, correct sampling techniques, principals of integrated water resource management, estuarine and riverine systems – physical, chemical and biological, water safety plan and others, environmental practices (using draft WAF document on same) and to contractors on safeguards during construction.
- (iii) Ensure that Contractor contracts contain all necessary safeguards and monitoring EMP for effectiveness during construction.
- (iv) In connection with the national lab, under which the environment unit falls – there is a need for adequate support to complete international accreditation and the purchase of instruments for heavy metal analysis, dissolved oxygen (in the field) and special sampling devices for commercial and industrial effluents.
- (v) To successfully carryout environmental management work for construction and for routine sampling and monitoring, it is critical that the unit be provided with dedicated new vehicles, at least two, since many responsibilities must be carried out simultaneously.

### **Trade Waste**

16. **Specific Tasks:** To accommodate the increase in waste water generation and collection from both newly connected as well as existing connected business facilities, the new WAF trade waste staff and program should be supported in policy, effective awareness and in technical knowledge. Existing procedures documents of staff will be reviewed and adjusted as needed to effectively carry out further work:

- (i) Logistics: logistic support of staff and samples, particularly from other urban centers of Fiji, appropriate vehicles are to be designed and purchased - 3 specially designed vehicles (refrigeration, sample, chemical, instrument and other equipment storage on board), one each for Western, Central and Northern Divisions;
- (ii) Treatment system: to effectively manage the use of the trade waste facilities at Kinoya – staff will require training in operations as well as monitoring and troubleshooting and technical guidance for the staff in sampling as well as becoming knowledgeable in pre-treatment of commercial and industrial waste should be prepared with an overall framework of instruction and followed with manual;
- (iii) Awareness: once Cabinet has approved the Trade Waste Policy document and gazetted the program, a major awareness program will be instituted, using all forms of communication (media, workshops, association meetings) and providing information to

- the public as well as potential clients on purpose, procedures, requirements and regulations;
- (iv) **Policy:** Closely monitoring the status of the policy, currently before Cabinet and preparing briefings, answering queries and otherwise building support within the business community for the program.

### **Financial Specialist**

17. **Qualifications and experience:** The financial specialist will hold an internationally recognized accountancy qualification preferably with an advanced degree in finance and have at least 10 years' experience in a senior finance role in government, private sector or with international development agencies, i.e. ADB/World Bank. Experience in the Pacific or with water utilities will be preferred.

18. **Specific Tasks:** With the support of the national financial specialist and accountant, the financial specialist will:

- (i) Supervise the preparation of the project budget and project financial statements
- (ii) Recommend suitable software requirements for project accounting
- (iii) Supervise and train the Project Accountant in the preparation of Withdrawal Applications
- (iv) Review all accounting policies used by WAF in financial reporting and recommend changes to accounting policies to be implemented in accordance with International Financial Reporting Standards (IFRS)
- (v) Together with the Financial Specialist (national), document accounting processes at WAF through such methods such as flow charts and internal control questionnaires (ICQ)
- (vi) Based on the findings above recommend any changes to current accounting processes to enhance internal control
- (vii) Lead the development of internal audit work plans
- (viii) Lead discussions with WAF Board and regarding the write-off of customer receivables not deemed recoverable
- (ix) Lead the process in the valuation of fixed assets at the time of hand over to WAF through either a Board of Survey or independent valuation. Lead discussions with the Office of the Auditor General in this regard.

### **Resettlement Specialist**

19. **Qualifications and experience:** The resettlement specialist will have an internationally recognized degree in anthropology, social science degree or equivalent and must have demonstrated expertise in all phases of resettlement planning and implementation including experience managing resettlement in projects for ADB or the WB and with Pacific countries. He/she will have excellent oral and written English.

20. **Specific Tasks** The resettlement specialist will be responsible for establishing and overseeing all elements in resettlement implementation while working in collaboration with the WAF counterpart and other officers and staff, including:

- (i) Offering introductory workshops and leading capacity development for staff in WAF, DOL, and TLTB on resettlement as required
- (ii) Assisting with preparation of handouts to disseminate information about the project ensuring inclusion of details for contacting staff of the safeguards/resettlement unit in the PMU, and information on the grievance redress mechanism

- (iii) Planning and supervising all phases of the census and socio-economic survey in conjunction with land surveying upon completion of detailed engineering design, including preparing job descriptions for personnel, designing their training, and monitoring the quality of the work
- (iv) Planning and supporting outreach to communities, local organizations, nongovernment organizations (NGOs), and schools
- (v) Contributing to oversight of implementation of the inventory of losses
- (vi) Collaborating with WAF staff as requested to carry out the valuation of losses
- (vii) Establishing all details of the grievance redress mechanism including creation of standard procedures for investigation of complaints and training WAF counterpart(s) in these, including record keeping so they are fully prepared to carry out this work in the absence of the SRS
- (viii) Supervising establishment of detailed record keeping systems and training staff to maintain these accurately and keep them up to date – including alphanumeric codes for each property, data on residents and vulnerable peoples, data on relevant sector issues, dates and names of all contacts between WAF and citizens, records of community meetings including attendees names and addresses, details of inventory of losses and valuation for each property, details on negotiations over compensation to be paid, dates of payment of compensation, records of all pertinent communications with DOL or/and TLTB, detailed records of complaints, investigations and negotiations carried out, and responses to complaints, and filing systems for all related documents references to the on-line data base including copies of receipts for compensation payment
- (ix) Preparing semi-annual reports to ADB on resettlement issues

### **Human Resources Specialist**

21. **Qualifications and experience:** The human resource specialist will have an internationally recognized degree in human resource, business management or equivalent and must have demonstrated expertise in similar role in a government organization with at least 10 years' experience, preferably in a utility. Experience with Pacific countries will be valued. He/she will have excellent oral and written English.

22. **Specific Tasks:** The human resources specialist to conduct an assessment of WAF human resources management and conduct a workshop to present the results to WAF management and WAF Board. The assessment will include a staff survey on gender attitudes and behaviors, including data for retrospective report, and prepare sex-disaggregated report on WAF hiring, salaries, promotions, and resignations from 2010 to the present based on HR records as well a survey results. He/she in collaboration with the Gender Specialist will prepare a strategy to improve WAF gender policy and conduct gender training with WAF high and mid-level management on the results of the gender assessment and recommendations.

### **Gender Specialist (Capacity Building) 6 months**

23. **Qualifications and experience:** The gender specialist will have an internationally recognized degree in social development, anthropology or equivalent and must have demonstrated expertise in similar role in a government or private organization with at least 10 years' experience. Experience with Pacific countries will be highly valued. He/she will have excellent oral and written English.

#### **Specific Tasks:**

- (i) Gender specialist will conduct gender training needs analysis, and carry out basic all staff and management training units for WAF and special short programs for women

- staff on, for example, job/office realities, public speaking, assertiveness, requesting raises/promotions. He/she will develop training program and will train WAF training specialists and collaborate with them to deliver first programs.
- (ii) He/she will review the design and monitoring framework baseline indicators and support WAF in establishing mechanisms to gather gender disaggregated data for those indicators that require it.
  - (iii) He/she will gender plan to be included in civil work contracts, particularly where civil works are carried out in close contact with communities and he/she will provide training to contractors and WAF contractor supervisors on the objectives and on the implementation and monitoring of the gender plan.
  - (iv) She will ensure that women are actively involved in consultation during project preparation and implementation, particularly in informal settlements and vulnerable areas.

#### **Demand Management Specialist– 2yr full time, then intermittent**

24. **Qualifications and experience:** The demand management specialist will have an internationally recognized undergraduate degree and must have demonstrated expertise in similar role in a water utility with at least 15 years' experience. Experience with Pacific countries will be highly valued. He/she will have excellent oral and written English.

#### 25. **Specific Tasks:**

The Demand Management Specialist responsibility includes:

- (i) Review work undertaken in association with Sydney Water under the Twinning Agreement work
- (ii) Review the success or otherwise of Demand Management Programs in other Pacific countries
- (iii) In close consultation with WAF, prepare a framework for Demand Management and obtain endorsement from WAF and GoF
- (iv) In consultation with WAF, prepare a comprehensive and tailored Demand Management Program to cover WAF's area of operations
- (v) Direct support to WAF on implementation of demand management activities, including general oversight of community education programs
- (vi) Setup performance and monitoring framework and periodic review of progress

#### **NRW Specialist (Capacity Building) 30 months – 2yr full time, then intermittent**

26. **Qualifications and experience:** The NRW specialist will have an internationally recognized degree in civil engineering or equivalent and must have demonstrated expertise in NRW, particularly technical losses. He will have at least 10 years of experience in a similar role as permanent staff in a water utility with experience managing a team and reporting to management. Experience working with public utilities in DMCs will be value. He/she will have excellent oral and written English.

27. **Specific Tasks:** The NRW Specialist responsibility includes:

- (i) In close consultation with WAF, prepare a framework for NRW Management and obtain endorsement from WAF
- (ii) In consultation with WAF, prepare a comprehensive and tailored NRW Management Program to cover WAF's area of operations
- (iii) Review WAF water main condition assessment and confirm rationale and priorities for water main replacement program

- (iv) Direct support to WAF on implementation of three core NRW activities
  - a) Main replacement
  - b) Meter replacement
  - c) Pressure management
- (v) Setup performance and monitoring framework and periodic review of progress

### **SOE Reform Specialist (Capacity Building) 6 months, intermittent**

28. **Qualifications and experience:** The specialist will have extensive experience in SOE reform and enterprise development, particularly in the water and sewerage sector, across a range of geographic and political settings and have demonstrated strong political, negotiation and process facilitation skills specifically in a pacific island setting. He will have at least 10 years of experience in a similar role. He/she will have excellent oral and written English.

29. **Specific Tasks:** The SOE Reform Specialist responsibility includes:

- (i) Lead discussions with relevant Ministries including the Ministry of Finance on WAF tariff reform, especially developing a tariff setting mechanism through an organization such as the Consumer Commission
- (ii) Lead discussions with relevant Ministries regarding the retention of the water and wastewater revenues by WAF and the mechanism to do so with revisions (if any) to the existing grants to WAF
- (iii) Assist the government and WAF in the implementation of the above policies
- (iv) Make recommendations as to the constitution and operation of the WAF Board of Directors to enable WAF to function as a true corporatized entity.

### **National Financial Specialist (Works & Capacity Building) 24 months**

30. **Qualifications and experience:** The national financial specialist will have a degree in accounting or business administration and will be a member of the Fiji Institute of Accountants. He/she will have at least 5 years post qualification experience in the private/public sector or in practice.

31. **Specific Tasks:** Under the guidance of the international financial specialist he/she will:

- (i) Supervise the preparation of project accounting documentation and the preparation of project accounts and budgets
- (ii) Ensure that project accounts are audited on time
- (iii) Assist Financial Specialist (international) in the review of WAF accounting policies and their conformity to International Financial Reporting Standards (IFRS)
- (iv) Document all accounting processes at WAF through such methods such as flow charts and internal control questionnaires (ICQ)
- (v) Ensure that the accounting processes documented above are practiced by observation and techniques such as introducing dummy transactions to the system and observing the outcome
- (vi) Organize and lead training sessions with staff involved in various accounting processes at WAF head office and in the regions
- (vii) Develop internal audit plans and train the officers of the WAF internal audit department in implementing those plans
- (viii) Review internal audit working papers and train internal audit staff to develop audit working papers to a high standard.

- (ix) Ensure completeness and accuracy of the customer billing system; ensure that all collections are posted correctly
- (x) Together with the relevant account officer/s at WAF, assess adequacy of the provision for bad and doubtful debts and ensure billing system comprises only of current accounts. Once Board approval received ensure that such accounts are deleted from the system.
- (xi) Inspect store cards and inventory ledgers and train WAF officers in proper maintenance of inventory records
- (xii) Participate in stock-takes at least once in every major storage facility of WAF to ensure proper procedures followed and ledgers/sub-ledgers updated
- (xiii) Ensure that completed projects are properly capitalized. Train relevant WAF account officers in the transfer of completed projects to fixed assets as soon as Completion Certificates obtained. Liaise with technical staff in expediting the process of obtaining Completion Certificates.
- (xiv) Ensure completeness and accuracy of the Fixed Asset Register and train relevant staff in updating the register and capitalizing all costs associated with the purchase of assets
- (xv) Ensure accuracy of month-end and year-end cut-off procedures Train relevant WAF in proper accounting and reversal of cut-offs
- (xvi) Inspect register of Journal Entries and ensure that all journals are properly supported and train WAF accounting staff in the use and abuse of journal entries
- (xvii) Inspect the preparation of bank reconciliations and ensure they are properly carried out. Train relevant WAF officers in preparation of bank reconciliations.
- (xviii) Inspect VAT returns and ensure that the reconciliation is carried out properly.

#### **National Project Accountant (Works) 48 months**

32. **Qualifications and experience:** The project accountant will have a degree in accounting from a recognized university with at least 5 years' experience in a reputed government or private sector organization.

33. **Specific Tasks:** Under the guidance of the national financial specialist he/she will:

- (i) Prepare project budget with projections for use of loan proceeds and counterpart funds
- (ii) Prepare Withdrawal Applications with accompanying supporting documents and submit to Ministry of Finance for approval and forwarding to ADB
- (iii) Manage day to day financial administration related to the project.
- (iv) Prepare project financial statements in a format acceptable to the ADB.
- (v) Liaise with auditors during the audit of the project financial statements

#### **National Computer Design Specialist (Capacity Building) 2 months**

34. **Qualifications and experience:** The national computer design specialist will have a degree in computer science, data base management or similar degree from a recognized university with at least 5 years' experience in a similar position with government or private sector organization. Previous experience with financial management software will be required.

35. **Specific Tasks:** Under the guidance of the national financial specialist he/she will:

- (i) Design, integrate with existing computerized records systems, and test system to generate sex-disaggregated data for HR department for annual reporting
- (ii) Provide support if required to link customer data bases with financial systems.

#### **National Community Education & Training Officers (2 positions)**

36. **Qualifications and experience:** The national community education and training officers will have a degree in social science, community service or similar degree from a recognized

university with at least 5 years' experience in a similar position with government or civil society organization. Previous experience working in informal settlements or working with women groups will be highly valued as well as experience with WASH programs.

37. **Specific Tasks:** Under the guidance of the PMU team, they will:

- (i) Provide communications support to the PMU in various areas, including demand management, NRW management, trade waste, general project information
- (ii) Develop and implement community education and training programs in key capacity building areas of demand management, NRW management and trade waste.
- (iii) Support PMU with communication and liaison with the community regarding the various projects, with a strong focus on working with sections of the community that are impacted by the projects, and particularly informal settlement and vulnerable groups.

**TERMS OF REFERENCE FOR PACKAGE 2** - Concept design and DBO contract management and supervision of Rewa River Water Supply Scheme and Kinoya Wastewater Treatment Plant Extension

## **I. KINOYA WASTEWATER TREATMENT PLANT UPGRADE ASSIGNMENT**

### **A. BACKGROUND**

Kinoya Wastewater Treatment Plant (WWTP), located at Laucala Beach, Viti Levu, Fiji, is the largest wastewater treatment facility operated by the Water Authority of Fiji (WAF). Kinoya WWTP consists of screening, grit removal and two separate treatment trains comprising:

- (i) Trickling filter – Primary sedimentation tanks (PST) (shared with the sequencing batch reactor), plastic media trickling filters, humus clarification
- (ii) Sequencing Batch Reactor (SBR) – Primary sedimentation (shared with the trickling filter), Selector, 4 basin pivot decant reactors.

The SBR is currently out of service and only operated for approximately one year after it was constructed in 2003 due to lack of operator training and technical support. The existing Kinoya WWTP capacity is currently estimated to be approximately 128,000EP (with all upgraded trickling filters and humus clarifiers operational), while current loadings are estimated to be somewhere between 130,000EP and 160,000EP. The WWTP is currently operating below its design capacity (of 150,000EP) due to the SBR being out of service. WAF has engaged a consulting firm to undertake a detailed assessment of the existing Kinoya WWTP and site master planning including:

- (i) Assessment of background information and data including influent wastewater characterization
- (ii) On-site asset condition assessment
- (iii) Assessment of existing hydraulic and process capacities, limitations and constraints
- (iv) Identification of immediate operational improvements
- (v) Assessment of options to restore and / or modify the existing SBR facility to returned it to service

- (vi) Development of a program of consolidation works to optimize the efficiency and performance of the existing WWTP infrastructure
- (vii) Development of a waste management plan for waste streams including effluent and bio-solids
- (viii) Development of an odour control programme including short term mitigation actions and monitoring plan
- (ix) Options development and feasibility analysis of future upgrade (augmentation) works up to a potential 500,000 EP ultimate capacity including development of a staging and implementation plan
- (x) Development of preliminary designs and performance specifications for the first planned stage of upgrade to a total capacity 277,000 EP.

The key outputs of this current consultancy including a design definition report and feasibility assessment report are expected to be available by end of November 2015.

A major upgrade of Kinoya WWTP is proposed for 2016 / 2017 to increase the plant capacity to 277,000 EP, which will allow the servicing of priority backlog sewerage areas, along with projected growth (new development areas) over the next 10–15 years. The upgrade works are likely to include construction of two new SBR units or equivalent, two primary sedimentation tanks, a new sludge digester and upgrade of the sludge dewatering plant.

The project will have the following key benefits:

- (i) Address an existing shortfall in wastewater treatment capacity, which will improve overall effluent quality and help to minimize the incidents of treatment plant bypassing, thereby improving water quality of receiving waters.
- (ii) Provide additional wastewater treatment capacity to allow the servicing of backlog sewerage areas and also to service future growth within the Suva wastewater system.

WAF intends to procure detail design services and construction supervision of works for the Kinoya WWTP Upgrade. The contract may propose to include O&M supervision and capacity building for 5 years, with an option to extend by 5 years.

## **B. OBJECTIVES OF THE KINOYA WASTEWATER TREATMENT PLANT UPGRADE ASSIGNMENT:**

The objectives of the assignment are to:

- (i) identify and address any gaps or deficiencies with previous feasibility studies, preliminary designs and related site master planning investigations;
- (ii) confirm final effluent quality targets for receiving waters and selection of appropriate wastewater treatment technology;
- (iii) confirm treatment process performance requirements and sizing / rating of each process component to meet final effluent quality discharge requirements;
- (iv) comprehensively define the scope of works, performance specifications, 'Employer's Requirements' and all necessary tender documentation for delivery of the proposed upgrade works;
- (v) maximise value of the upgrade works to WAF via a structured value management process;
- (vi) maximise safety in design via consultation with WAF technical and operations staff throughout the design development and review process;
- (vii) confirm procurement strategy for delivery contracts

- (viii) develop accurate cost estimates for detailed design, construction and operation phases of the Kinoya WWTP upgrade;
- (ix) address any outstanding environmental issues and / or EIA process scoping requirements and define construction environmental mitigation measures;
- (x) update waste management plans and odour control programme
- (xi) identify and address any outstanding land acquisition and resettlement issues;
- (xii) provide quality assurance for detail designs and documentation prepared under the delivery contract;
- (xiii) facilitate early identification of construction requirements and constructability issues;
- (xiv) maintain continuity of treatment process objectives, design intent and functionality from concept design stage through to detail design, construction, commissioning and operation;
- (xv) ensure effective contract management and supervision of contract works; and,
- (xvi) provide technical and project management support to WAF throughout the design development, construction and initial operation phase.

### **C. SCOPE OF SERVICES, TASKS (COMPONENTS) AND EXPECTED DELIVERABLES**

The scope of work under this consultancy will include:

#### **Part A:**

- (i) review outputs of previous studies and related background information;
- (ii) review Initial Environmental Examination (IEE) and identify any further specialist environmental investigations / studies that are required;
- (iii) review project LARP and carry out any further investigations to update entitlement matrix;
- (iv) undertake additional surveys and site investigations as required (provisional);
- (v) review and confirm selection of appropriate wastewater treatment technology option to achieve:
  - a) final effluent quality targets;
  - b) ensure sustainable operation and maintenance of Kinoya WWTP by local WAF operators following handover;
  - c) minimise long term operation and maintenance costs;
- (vi) concept design of staged upgrade of Kinoya WWTP to 277,000 EP total capacity including all associated civil, mechanical and electrical works, power supply upgrades;
- (vii) facilitate workshops with WAF technical and operations staff during development of concept designs including:
  - a) Value Management (VM);
  - b) Hazard & Operability (HAZOP) study;
  - c) Operational access review
  - d) Construction Hazard Assessment Implication Review (CHAIR 1); and,
  - e) Preliminary cut-in / cut-over sequence planning.
- (viii) facilitate a procurement risk workshop with WAF technical and operations staff to identify preferred delivery contract model (current assumption is for DBO form of contract)

- (ix) prepare comprehensive DBO tender documentation package based on FIDIC 'Conditions of Contract for Design, Build and Operation Projects' ('Gold Book') including 'Employers Requirements', detailed performance specifications and conditions of tender;
- (x) prepare outline Construction Environmental Management Plan (CEMP);
- (xi) prepare cost estimates and a program for delivery of the works under the DBO form of contract;
- (xii) prepare a comprehensive list of Contractor's Documents to define the scope of design inputs by the DBO Contractor;
- (xiii) provide assistance to WAF throughout the bidding process, including communication and project advertisement at international level, identification and contacting potential bidders, call for EOI and shortlisting of 6 eligible bidders and issuance of RFT, responding to tender enquiries ;
- (xiv) assist WAF with detailed technical review and evaluation of tenders for the DBO contract including preparation of a detailed and exhaustive tender evaluation report with recommendations to WAF. The evaluation report will cover detailed technical and financial evaluation of the bids received, with a precise cost-benefit analysis of each proposal received, using the Net Present Value methodology with discounted rate and including the 5 years operation period;
- (xv) monitoring of project progress and reporting to the assigned WAF Project Manager throughout the concept design development and advance procurement phase; and,
- (xvi) provision of technical assistance and project management support to WAF and PMU as required.

The expected duration of concept design and development of DBO tender documentation under Part A of the assignment is 20 weeks.

### **Part B:**

- (i) undertake technical review of detailed designs prepared by the selected DBO contractor including all proposed mechanical plant & equipment selections;
- (ii) facilitate workshops with WAF staff and the DBO contractor during detailed design stage including:
  - a) Value Management (VM);
  - b) Detailed Hazard & Operability (HAZOP) study;
  - c) Construction Hazard Assessment Implication Review (CHAIR 2/3); and,
  - d) Detailed cut-in / cut-over sequence planning.
- (iii) supervision of DBO Contract works and first 12 months of Operation Service Period including performing the duties and functions of the 'Employer's Representative' under the FIDIC form of contract;
- (iv) facilitate and monitor the implementation of the EMP and the gender action plan by contractors;
- (v) review of As-Built documents (drawings), Operation & Maintenance Manuals, Standard Operating Procedures (SOPs) and operator training modules;
- (vi) review of pre-commissioning and commissioning testing plans and provision of technical assistance throughout the commissioning process;
- (vii) attend, witness and provide technical assistance as required during Trial Operation and Performance Testing;

- (viii) facilitate the timely delivery of the project in compliance with standards acceptable to the government and ADB and within the project budget (quality and cost control); and,
- (ix) report to the assigned WAF Project Manager throughout the DBO contract delivery phase and provide technical assistance and project management support to WAF and the PMU as required.

The expected durations of each key stage of the assignment under Part B are as follows:

- detail design development under the DBO contract: 6 months
- supervision of the construction works: 12 months.
- supervision of the Operation Service Period and rectification of defects: 12 months.

#### **D. TEAM COMPOSITION & QUALIFICATION REQUIREMENTS FOR THE KEY EXPERTS FOR KINOYA WASTEWATER TREATMENT PLANT UPGRADE ASSIGNMENT**

**Senior Project Manager/Team Leader** – 15 years experience in design, delivery of water and wastewater infrastructure including completion of at least 2 projects of similar scope is preferred. Operational experience with wastewater treatment facilities and delivery of works under D&C/DBO forms of contract will be considered advantageous.

1. **Senior Process Engineer** – 15 years experience in process design of water and / or wastewater treatment plants including completion of at least 2 projects of similar scope is preferred. Commissioning and operational experience with wastewater treatment plants will be considered advantageous.

2. **Senior Civil Engineer (design and construction supervision)** – 15 years experience in design and delivery of water and wastewater infrastructure including completion of at least 2 projects of similar scope is preferred. Prior experience with 'brown-field' wastewater treatment plant upgrades and D&C / DBO forms of contract will be considered advantageous.

Estimated inputs for Key Experts are listed in the table below:

Key Expert	Estimated Inputs (Person Months)		
	Part A	Part B	Total
Project Manager / Team Leader	6	6	12
Senior Process Engineer	5	4	9
Senior Civil Engineer (Design & Construction Supervision)	5	16	21

#### Additional criteria for firm:

Demonstration of the following specific technical experience will be considered a distinct advantage:

- Concept and/or detailed design of at least 2 no. wastewater treatment plant upgrades of at least 50,000 EP capacity within the last 5 years.

Submit relevant project data sheets with client / referee contact details including email and telephone.

Note that the selected consulting firm (and any associated sub-consultants) will not be eligible to tender for the subsequent D&C / DBO contract for delivery of the works either as a single entity, or as a joint venture with another firm.

## **E. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES**

- (i) Report and documentation submission requirements include but are not limited to: technical memo summarizing review of previous reports, studies and background information with comments on relevance, accuracy and identification of missing data – submit within 2 weeks of commencement.
- (ii) value management report – within 2 weeks of value management workshop
- (iii) concept design report including process design, civil, electrical and mechanical design – submit draft report 16 weeks after commencement.
- (iv) design safety report including HAZOP and CHAIR workshop minutes – submit with concept design report,
- (v) concept design drawings including Process Flow Diagrams (PFD), Process & Instrumentation Diagrams (P&IDs), site arrangement plan, plans and sections of all major process structures, layout plans of all access roads – submit with concept design report;
- (vi) DBO tender documentation package including ‘Employers Requirements’, detailed performance specifications and conditions of tender – submit 18 weeks after commencement;
- (vii) cost estimates and programme of work – submit 18 weeks after commencement;
- (viii) outline Construction Environmental Management Plan (CEMP) – submit 18 weeks after commencement;
- (ix) tender evaluation report – submit within 6 weeks of close of tenders
- (x) monthly consultant progress report – submit no later than the 5th calendar day of each month.

## **F. CLIENT’S INPUT AND COUNTERPART PERSONNEL**

Services, facilities and property to be made available to the Consultant by the Client.

- (i) A meeting room facility (approx.10 person capacity) is available at Kinoya WWTP for workshop and training activities.
- (ii) Professional and support counterpart personnel to be assigned by the Client to the Consultant’s team: none.

## **G. CLIENT WILL PROVIDE THE FOLLOWING INPUTS, PROJECT DATA AND REPORTS TO FACILITATE PREPARATION OF THE PROPOSALS:**

- (i) Water & Wastewater Master Plan for Greater Suva Area (Water Authority of Fiji 2015)
- (ii) Initial Environmental Evaluation for Wastewater Sub Projects (ADB / Water Authority of Fiji 2015)
- (iii) Land Acquisition Resettlement Plan (ADB/Water Authority of Fiji 2015)
- (iv) Outputs generated as part of the current detailed assessment of the existing Kinoya WWTP infrastructure and site master planning which may include:
  - a. Summary of data analysis
  - b. Summary of historical reports
  - c. Asset condition assessment
  - d. Proposed immediate operational improvements
  - e. Hydraulic profile (existing plant)

- f. Options assessment for recovery of SBR and other consolidation works
- g. Design brief for preferred consolidation works
- h. Standard operating procedures (current plant)
- i. Waste management plan
- j. Short term odour mitigation action plan
- k. Strategy and program for implementation of odour monitoring
- l. Design definition and feasibility report for augmentation works (availability may depend on timing)

## **II. REWA RIVER WATER SUPPLY SCHEME ASSIGNMENT**

### **A. BACKGROUND**

The Water Authority of Fiji (WAF) for many years has proposed a new source on the Rewa River to extract and treat run of river flows to supplement bulk water supply to the Suva-Nausori water supply system. Originally the new source was intended to pump to the existing Waila Water Treatment Plant (WTP), however, due to concerns with future salinity levels in the lower reaches of the Rewa River and the potential for mining activity within the Waidina River catchment, it is proposed to construct a new source of bulk water supply further upstream on the Rewa River.

Key components of the proposed Rewa River Water Supply Scheme include a new river intake and raw water pumping station on the Rewa River approximately 600m upstream of the Waidina River junction, a new 30ML/d WTP, a 3ML clear water reservoir and pumping station, a 3ML reticulation reservoir and 26km of DN750 pipeline with connection to the eastern end of the Suva-Nausori water supply system (Raralevu Reservoir supply zone).

The project will have the following key benefits:

- (i) Address an existing shortfall in bulk water supply and water treatment during peak demand periods, therefore improving water supply reliability/continuity across the Suva-Nausori water supply system during extended dry periods.
- (ii) Provide additional bulk water supply and water treatment capacity to allow the servicing of areas not currently supplied with reticulated water and also to service future growth within the Suva-Nausori water supply system.
- (iii) Improve security of supply for the Suva-Nausori water supply system.

WAF has engaged a consulting firm to undertake a detailed feasibility study including:

- preliminary site investigations (geotechnical investigation, topographic survey and flood study);
- options assessment (intake configuration, WTP process, pipeline materials, river crossings and staging of pipeline construction);
- preliminary design of the Rewa River Water Supply Scheme; and,
- liaison with key stakeholders including Fiji Roads Authority and Fiji Electricity Authority.

The key outputs of this current consultancy including a Detailed Feasibility Study Report are expected to be available by end October 2015.

WAF intend to procure detail design services and construction of works for the Rewa River Water Supply Scheme via a 'Design – Build – Operate' (DBO) form of contract. The contract is proposed to include an initial operation period of 5 years, with an option to extend by 5 years.

## **B. OBJECTIVES OF THE REWA RIVER WATER SUPPLY SCHEME ASSIGNMENT**

The objectives of the assignment are to:

- (i) identify and address any gaps or deficiencies with previous feasibility studies, preliminary designs and / or related site investigations;
- (ii) confirm selection of appropriate water treatment technology to:
  - a) achieve water treatment objectives;
  - b) ensure sustainable operation and maintenance of Intake and WTP by local WAF operators; and,
  - c) minimise long term operation and maintenance costs;
- (iii) confirm treatment process and delivery system performance requirements and sizing / rating of each component to supply an additional 30ML/day to the existing Suva – Nausori water supply system with provision to upgrade to an ultimate capacity of 70ML/day;
- (iv) maximise value of the proposed scheme to WAF via a structured value management process;
- (v) maximise safety in design via consultation with WAF technical and operations staff throughout the design development and review process;
- (vi) confirm procurement strategy for delivery contracts;
- (vii) comprehensively define the scope of works, performance specifications, ‘Employer’s Requirements’ and all necessary tender documentation for delivery of the proposed works;
- (viii) develop accurate cost estimates for detailed design, construction and operation phases of the scheme;
- (ix) address any outstanding environmental issues and / or EIA process scoping requirements and define construction environmental mitigation measures;
- (x) identify and address any outstanding land acquisition and resettlement issues;
- (xi) provide quality assurance for detail designs and documentation prepared under the delivery contract;
- (xii) facilitate early identification of construction requirements and constructability issues;
- (xiii) maintain continuity of process objectives, design intent and functionality from concept design stage through to detail design, construction, commissioning and operation;
- (xiv) ensure effective contract management and supervision of contract works; and,
- (xv) provide technical and project management support to WAF throughout the design development, construction and initial operation phase.

## **C. SCOPE OF SERVICES, TASKS (COMPONENTS) AND EXPECTED DELIVERABLES**

The scope of work under this consultancy will include:

### **Part A:**

- (i) review outputs of ‘Investigation, Preliminary Design and Feasibility study for Rewa River Water Supply Scheme’ prepared by others;
- (ii) review Initial Environmental Examination (IEE) and identify any further specialist environmental investigations / studies that are required;
- (iii) review project LARP and carry out any further investigations to update entitlement matrix;
- (iv) undertake additional surveys and site investigations as required (provisional);

- (v) finalise water treatment objectives, assess treatment process options and select preferred option in the context of current WAF water treatment operations capability and operator skill level;
- (vi) concept design of Intake, Water Treatment Plant and Clear Water Pumping Station;
- (vii) concept design of delivery pipelines, reservoirs and all associated civil works;
- (viii) facilitate workshops with WAF technical and operations staff during development of concept designs including:
  - a) Value Management (VM);
  - b) Hazard & Operability (HAZOP) study;
  - c) Operational access review (intake, WTP and reservoir sites); and,
  - d) Construction Hazard Assessment Implication Review (CHAIR 1).
- (ix) facilitate a procurement risk workshop with WAF technical and operations staff to identify preferred delivery contract model (current assumption is for DBO form of contract)
- (x) prepare comprehensive DBO tender documentation package based on FIDIC 'Conditions of Contract for Design, Build and Operation Projects' ('Gold Book') including 'Employers Requirements', detailed performance specifications and conditions of tender;
- (xi) prepare outline Construction Environmental Management Plan (CEMP);
- (xii) review 'Water Safety Plan for Rewa River Water Supply Scheme' (drafted by others) and provide specific inputs on treatment process risks and all risks associated with delivery infrastructure;
- (xiii) prepare cost estimates and a program for delivery of the works via a DBO form of contract;
- (xiv) prepare a comprehensive list of Contractor's Documents to define the scope of design inputs by the DBO Contractor;
- (xvii) provide assistance to WAF throughout the bidding process, including communication and project advertisement at international level, identification and contacting potential bidders, call for EOI and shortlisting of 6 eligible bidders and issuance of RFP, responding to tender enquiries ;
- (xv) assist WAF with detailed technical review and evaluation of tenders for the DBO contract including preparation of a detailed and exhaustive tender evaluation report with recommendations to WAF. The evaluation report will cover detailed technical and financial evaluation of the bids received, with a precise cost-benefit analysis of each proposal received, using the Net Present Value methodology with discounted rate and including the 5 years operation period;
- (xvi) monitoring of project progress and reporting to the assigned WAF Project Manager throughout the concept design development and advance procurement phase; and,
- (xvii) provision of technical assistance and project management support to WAF and PMU as required.

The expected duration of concept design and development of DBO tender documentation under Part A of the assignment is 24 weeks.

## **Part B**

- (i) undertake technical review of detailed designs prepared by the selected DBO contractor including all proposed mechanical plant & equipment selections;
- (ii) facilitate workshops with WAF staff and the DBO contractor during detailed design stage including:

- a) Value Management (VM);
  - b) Detailed Hazard & Operability (HAZOP) study; and,
  - c) Construction Hazard Assessment Implication Review (CHAIR 2/3).
- (iii) supervision of DBO Contract works and first 12 months of Operation Service Period including performing the duties and functions of the 'Employer's Representative' under the FIDIC form of contract;
  - (iv) facilitate and monitor the implementation of the EMP and the gender action plan by contractors;
  - (v) review of As-Built documents (drawings), Operation & Maintenance Manuals, Standard Operating Procedures (SOPs) and operator training modules;
  - (vi) review of pre-commissioning and commissioning testing plans and provision of technical assistance throughout the commissioning process;
  - (vii) attend, witness and provide technical assistance as required during Trial Operation and Performance Testing;
  - (viii) facilitate the timely delivery of the project in compliance with standards acceptable to the government and ADB and within the project budget (quality and cost control); and,
  - (ix) report to the assigned WAF Project Manager throughout the DBO contract delivery phase and provide technical assistance and project management support to WAF and the PMU as required.

The expected durations of each key stage of the assignment under Part B are as follows:

- detail design development under the DBO contract: 6 months
- supervision of the construction works: 12 months.
- supervision of the Operation Service Period and rectification of defects: 12 months.

**D. TEAM COMPOSITION & QUALIFICATION REQUIREMENTS FOR THE KEY EXPERTS  
(and any other requirements which will be used for evaluating the Key Experts under  
Data Sheet 21.1 of the ITC)**

1. **Senior Project Manager / Team Leader** – 15 years experience in design, delivery of water and wastewater infrastructure including completion of at least 2 projects of similar scope is preferred. Operational experience with water treatment and supply schemes and delivery of works under D&C / DBO forms of contract will be considered advantageous.
2. **Senior Process Engineer** – 10 years experience in process design of water and / or wastewater treatment plants including completion of at least 2 projects of similar scope is preferred. Commissioning and operational experience with water treatment plants will be considered advantageous.
3. **Senior Civil Engineer (design and construction supervision)** – 15 years experience in design and delivery of water and wastewater infrastructure including completion of at least 2 projects of similar scope is preferred. Prior experience with D&C / DBO forms of contract will be considered advantageous.

Estimated inputs for Key Experts are listed in the table below:

Key Expert	Estimated Inputs (Person Months)		
	Part A	Part B	Total
Project Manager / Team Leader	8	8	16
Senior Process Engineer	7	8	15
Senior Civil Engineer (Design & Construction Supervision)	7	19	26

Additional criteria for firm:

Demonstration of the following specific technical experience will be considered a distinct advantage:

- Concept and/or detailed design of at least 1 water intake structure of 20 – 200 ML/day capacity within the last 5 years
- Concept and/or detailed design of at least 2 no. water treatment plants of at least 20 - 200 ML/day capacity within the last 5 years.

Submit relevant project data sheets with client / referee contact details including email and telephone.

Note that the selected consulting firm (and associated sub-consultants) will not be eligible to tender for the subsequent Design – Build – Operate contract for delivery of the works either as a single entity, or as a joint venture with another firm.

## **E. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES**

Report and documentation submission requirements include but are not limited to:

- (i) technical memo summarising review of previous reports, studies and background information with comments on relevance, accuracy and identification of missing data – submit within 2 weeks of commencement.
- (ii) value management report – within 2 weeks of value management workshop
- (iii) concept design report including process design, civil, electrical and mechanical design – submit draft report no later than 20 weeks after commencement.
- (iv) design safety report including HAZOP and CHAIR workshop minutes – submit with concept design report,
- (v) concept design drawings including Process Flow Diagrams (PFD), Process & Instrumentation Diagrams (P&IDs), site arrangement plan, plans and sections of all major process structures, layout plans of all access roads – submit with concept design report;
- (vi) DBO tender documentation package including 'Employers Requirements', detailed performance specifications and conditions of tender – submit draft tender documentation package no later than 20 weeks after commencement;
- (vii) cost estimates and programme of work – submit 18 weeks after commencement;
- (viii) outline Construction Environmental Management Plan (CEMP) – submit 18 weeks after commencement;
- (ix) tender evaluation report – submit within 6 weeks of close of tenders
- (x) monthly consultant progress report – submit no later than the 5th calendar day of each month.

**F. CLIENT'S INPUT AND COUNTERPART PERSONNEL**

- (i) Services, facilities and property to be made available to the Consultant by the Client: none.
- (ii) (b) Professional and support counterpart personnel to be assigned by the Client to the Consultant's team: none.

**G. CLIENT WILL PROVIDE THE FOLLOWING INPUTS, PROJECT DATA AND REPORTS TO FACILITATE PREPARATION OF THE PROPOSALS:**

- (i) Water & Wastewater Master Plan for Greater Suva Area (Water Authority of Fiji 2015)
- (ii) Initial Environmental Evaluation for Rewa River Water Supply Scheme Sub Project (ADB / Water Authority of Fiji 2015)
- (iii) Land Acquisition Resettlement Plan (ADB/Water Authority of Fiji 2015)
- (iv) Outputs generated as part of the current Investigation, Preliminary Design and Feasibility study for Rewa River Water Supply Scheme which may include:
  - a. Survey drawings
  - b. Geotechnical investigation report
  - c. Flood study
  - d. Preliminary options assessment (water treatment process, pipelines)
  - e. Preliminary design report (availability may depend on timing)
  - f. Feasibility study report (availability may depend on timing)

## **TERMS OF REFERENCE PACKAGE 3**

### **Detailed Design of Wastewater System Upgrades & Extension**

#### **A. BACKGROUND**

The Water Authority of Fiji currently operates a wastewater system servicing the Greater Suva Area (GSA) which includes seven major and seventy nine small / medium wastewater pumping stations (WWPS), about 44 km of rising sewer and trunk main and over 330km of sewerage reticulation. Reticulated wastewater services are available to around 36% of the population in the GSA. The remaining households generally have on-site wastewater facilities, including many with septic tanks. On-site wastewater systems however pose several problems in relation to environmental pollution from seepages and overflow to local waterways.

In 2014, WAF embarked on the process of updating the 1999 Water & Wastewater Master Plan for the GSA. Basic computer models of the existing wastewater system were developed to enable analysis of the steady state capacity of the network under average dry weather, peak dry weather and wet weather flow conditions. Several staged scenarios were examined, namely Existing System, Existing System with Backlog areas, and Existing System with Backlog Areas and Future Development.

A key outcome of the wastewater network analysis was that much of the existing infrastructure is already operating at, or near capacity and many existing pumping stations require significantly larger pumps in order to meet current loadings. Some stations require additional upgrades in order to cater for future loadings. A significant number of additional assets are also required in order to connect backlog and future growth areas to the existing network, including additional pumping stations, rising mains and trunk gravity mains.

The proposed Fiji Urban Water Supply and Wastewater Management Project (the Project), co-financed by ADB and EIB, will support the Government of Fiji via its implementing agency, the Water Authority of Fiji (WAF), to deliver reliable and durable water supply and sewerage infrastructure to support sustainable urban growth in the GSA. Improved delivery of water and sanitation services is essential for ongoing economic development and is a high Government priority.

#### **B. OBJECTIVE OF THE WASTEWATER SYSTEM UPGRADES & EXTENSION ASSIGNMENT**

The following 3 key Sub-projects have been identified to upgrade and extend the existing wastewater network to overcome existing capacity limitations, enable connection of an additional 15% of households in backlog areas and to provide additional capacity for future growth:

##### **Sub-project 4: Existing Pumping Station Upgrades**

This sub-project involves upgrading 31 existing wastewater pumping stations (WWPS) that are under capacity. The pumping station upgrade requirements are based on a comparison of current duty flow against required theoretical design peak wet weather flows. The upgrades generally involve replacement of pumps, upgrade of electrical equipment, installation of SCADA & telemetry systems and associated minor civil & structural works within the existing pumping station sites. Close coordination and management of design and construction of associated high voltage power supply upgrades by Fiji Electricity Authority will also be required for successful delivery of this Sub-project.

##### **Sub-project 5: Existing Sewer Main Upgrades**

This sub-project involves the upgrade / duplication of around 18km of wastewater trunk mains and the replacement / relining of around 13.4km of wastewater mains that are either under

capacity or are reaching the end of their asset life. WAF has released a tender for condition assessment of all major sewer mains in GSA, which is expected to be undertaken in 2015/16. The condition assessment will identify existing sewer mains with sufficient hydraulic capacity that requires replacement/relining due to their condition.

#### **Sub-project 6: Sewer Extension to Additional 15% of Households**

WAF has a long term goal to increase the percentage of users connected to the sewer network within the GSA from 36% to 90%. This sub-project involves the construction of new wastewater system infrastructure to directly service around 23 backlog sewerage areas (which will provide connection for an additional 15% HH in backlog areas – 4,500 lots) and a new regional pumping station to service future development in the Waila/Nakasi region (regional infrastructure that will support future development of around 13,500 lots).

Implementation of Sub-projects 4, 5 & 6 will have the following key benefits:

- A significant reduction in sewage overflows during wet weather as a result of significant improvements in wastewater system capacity. Existing capacity constraints directly contribute to sewage overflows that impact adjacent and downstream property owners as well as having major impacts on downstream receiving waters – resulting in both environmental and social impacts.
- A reduction in operating and maintenance costs as a result of replacing ageing infrastructure (particularly mechanical/electrical equipment subject to regular failure and sewer mains in poor condition and / or with high infiltration) with new, upgraded infrastructure. Replacement of ageing infrastructure will also result in a reduction in sewage overflows (particularly in dry weather) due to asset failures.
- Increased system capacity to accept additional loadings from backlog sewerage areas, redeveloped settlement areas and new development areas that are expected to connect to the existing Suva wastewater system over the next 5-10 years.
- Direct servicing of a large number of backlog sewerage lots that currently rely on unreliable / unsuitable on-site septic systems, resulting in improved outcomes for both the downstream receiving environments and social health.

WAF intend to procure contracts for construction of work packages for delivery of the Wastewater System Upgrades & Extension Sub-projects via traditional 'construct only' forms of contract.

The objectives of the assignment are to:

- (i) identify and address any gaps or deficiencies with previous site master planning investigations, condition assessments and feasibility studies;
- (ii) address any outstanding environmental issues and / or EIA process scoping requirements and define construction environmental mitigation measures;
- (iii) maximise value of the sewerage network upgrade / extension works to WAF via a structured value management process;
- (iv) maximise safety in design and construction via consultation with WAF technical and operations staff throughout the design development process;
- (v) provide quality assured detail designs and tender documentation in accordance with the procurement requirements of WAF and the ADB / EIB;
- (vi) develop accurate cost estimates for each package of goods and works contracts to be tendered;

- (vii) facilitate early identification of construction requirements and constructability issues;
- (viii) facilitate the timely delivery of the project in compliance with standards acceptable to the government and ADB and within the project budget;
- (ix) minimise Involuntary Resettlement (IR) impacts on the community;
- (x) ensure effective contract management and supervision of contract works; and,
- (xi) provide technical and project management support to WAF throughout the design development and construction phase.

### **C. SCOPE OF SERVICES, TASKS (COMPONENTS) AND EXPECTED DELIVERABLES**

The consultant will be responsible for all site investigations, surveys, preparation of sewer servicing strategies, concept designs, detailed designs, specifications and tender documentation packages, procurement assistance, contract management and supervision of works. The consultant will provide technical assistance and general project management support to the WAF Project Manager and Project Management Unit (PMU) and will also liaise with the appointed Resettlement Specialist under the PMU to ensure early identification of all potential impacts in accordance with the objectives of the updated Land Acquisition & Resettlement Plan (LARP).

The consultant will develop the program of work for design, procurement and delivery of the works in consultation with the WAF Project Manager and Project Management Unit (PMU). The program of work must reflect key program constraints for each Sub-project as noted below.

#### **Specific Requirements for Sub-projects:**

Specific requirements for each Sub-project are listed below:

#### **Sub-project 4: Existing Pumping Station Upgrades (31 no.)**

The scope of work under **Part A** of Sub-project 4 will include:

- (i) inspection and condition assessment of WWPS sites including internal inspection of wet well, all civil, mechanical and electrical infrastructure including control and switchgear;
- (ii) survey & detailed measure-up of WWPSs and rising mains including: incoming sewer levels, WWPS operating levels, rising main pipe diameters / materials, horizontal and vertical pipeline profiles and discharge levels;
- (iii) assessment of functional limitations / deficiencies of existing wastewater pumping station upgrade requirements including but not limited to: wet well sizing (ie. control volume, depth), ventilation requirements; emergency storage provisions and overflow arrangements;
- (iv) consultation with Authorities including but not limited to: WAF regarding (sewer loadings) and Fiji Electricity Authority (FEA) regarding power supply upgrade requirements;
- (v) hydraulic analysis of WWPS rising main systems and selection of pumps to meet upgrade requirements;
- (vi) detailed design and specification of pumping station upgrade and refurbishment works including all civil, mechanical and electrical works;
- (vii) construction Hazard Assessment Implication Reviews (CHAIR) and preliminary cut-in/cut-over sequence planning for upgrade works;
- (viii) planning and documentation of temporary sewer diversions/bypass pumping/tankering arrangements required for execution of the upgrade works including & operational and WHS risk assessments;

- (ix) conduct a procurement risk workshop for the upgrade works in consultation with WAF/PMU and prepare a procurement plan for the agreed works packages;
- (x) prepare specifications and tender documentation for WWPS upgrade work packages; and,
- (xi) prepare cost estimates and program for delivery of the works.

Deliverables for Part A of Sub-project 4 include:

- Condition assessment report on 31 existing wastewater pumping stations – submit within 8 weeks of commencement of Sub-project 4;
- Survey drawings of WWPSs sites (including detail measure-up) and rising main pipelines – submit within 12 weeks of commencement of Sub-project 4;
- Design report on proposed upgrade works for 31 existing wastewater pumping stations – submit draft report within 22 weeks of commencement of Sub-project 4;
- Procurement plan – submit within 1 week of procurement risk workshop (held 1 week after submission of draft design report).
- Detailed designs, specifications and tender documentation package for upgrade works – submit within 26 weeks of commencement of Sub-project 4.

The scope of work under **Part B** of Sub-project 4 will include:

- (i) provide assistance to WAF throughout the bidding process, including communication and project advertisement at local and international level, identification and contacting potential bidders, responding to tender enquiries;
- (ii) undertake detailed technical review and evaluation of tenders for the WWPS upgrade works contract packages including preparation of a detailed and exhaustive tender evaluation report with recommendations to WAF. The evaluation report will cover detailed technical and financial evaluation of the bids received;
- (iii) coordination and monitoring of power supply upgrade design and construction works by FEA;
- (iv) provision of post-design advice;
- (v) review pump manufacturer's quality assurance documentation and attend Factory Acceptance Tests (FAT) / pump performance testing (provisional);
- (vi) monitor logistics for supply and delivery of pumps and control equipment;
- (vii) review manufacturer's shop drawings of electrical switchboards and cabinets;
- (viii) perform the duties and functions of the 'Engineer' under the FIDIC form of contract including Defects Notification Period;
- (ix) supervision of mechanical and electrical installation and associated civil works under the contract;
- (x) coordination and monitoring of power supply upgrade design and construction works by FEA;
- (xi) supervision of commissioning and performance testing of upgraded WWPSs; and,
- (xii) review of work-as-constructed drawings and updated operation and maintenance manuals.

A key program constraint for delivery of Sub-project 4 is that the wastewater pumping station upgrade works cannot commence until Kinoya WWTP is upgraded. The estimated date for commissioning of the proposed Kinoya WWTP upgrade works is mid 2018.

Deliverables for Part B of Sub-project 4 include:

- Tender evaluation report/s – submit within 2 weeks of close of tender;
- Report/s on FAT / pump performance testing – submit report/s within 2 weeks of completion of testing;

### **Sub-project 5: Existing Sewer Main Upgrades**

The scope of work under **Part A** of Sub-project 5 will include:

- (i) undertake a detailed review of WAF condition assessment outputs, assess priorities and develop schedule of proposed sewer main upgrades / duplication and relining / replacement works in consultation with WAF;
- (ii) survey & investigation of proposed upgrade / duplication pipeline routes, including verification of existing pipeline alignment, diameter & materials;
- (iii) consultation with authorities including WAF (regarding sewer loadings), Fiji Roads Authority (FRA) regarding existing road reserve boundaries and services allocations;
- (iv) preliminary selection of pipeline routes;
- (v) undertake geotechnical investigations and other site investigations as required including physical location of existing services;
- (vi) detailed design of sewer main upgrade / duplication works (work package WP05-1);
- (vii) develop scope of works and detailed specifications for relining / replacement works (work package WP05-2);
- (viii) define extent of land acquisition and other involuntary resettlement impacts associated with sewer main upgrade / relining works;
- (ix) Construction Hazard Assessment Implication Reviews (CHAIR) and preliminary cut-in / cut-over sequence planning for the pipeline upgrade / duplication and relining / replacement works;
- (x) planning for temporary sewer diversions (ie. bypass pumping or tankering arrangements) required for execution of the works including operational and WHS risk assessments;
- (xi) prepare outline Construction Environmental Management Plan (CEMP);
- (xii) conduct a procurement risk workshop for the upgrade works in consultation with WAF / PMU and prepare a procurement plan for the agreed works packages;
- (xiii) prepare tender documentation for pipeline upgrade / duplication and relining / replacement work packages; and,
- (xiv) prepare cost estimates and program for delivery of the works.

A key program constraint is that relining / replacement works may only commence once most of the existing sewers have been inspected under WAF's condition assessment contract and priority sections of sewer mains for relining / replacement have been identified. It is expected that the program of proposed relining works will be available in the second half of 2016.

Deliverables for Part A of Sub-project 5 include:

- Schedule of priority sewer main relining / replacement works – submit within 2 weeks of commencement of Sub-project 5.
- Detailed design of sewer main upgrade / duplication works and tender documentation (work package WP05-1) – submit within 20 weeks of commencement of Sub-project 5;
- Detailed specifications for relining / replacement works and tender documentation (work package WP05-2) – submit within 12 weeks of receipt of pipeline condition assessment information;

The scope of work under **Part B** of Sub-project 5 will include:

- (i) provide assistance to WAF throughout the bidding process, including communication and project advertisement at local and international level, identification and contacting potential bidders, responding to tender enquiries;
- (ii) undertake detailed technical review and evaluation of tenders for the pipeline upgrade / duplication and relining / replacement works contract packages including preparation of a detailed and exhaustive tender evaluation report with recommendations to WAF. The evaluation report will cover detailed technical and financial evaluation of the bids received;
- (iii) perform the duties and functions of the 'Engineer' under the FIDIC form of contract including Defects Notification Period;
- (iv) supervision of Contract works and defect rectification works during the Defects Notification Period;
- (v) provision of post-design advice;
- (vi) environmental monitoring and audit during construction phase; and,
- (vii) review of As-Built documents (drawings).

A key program constraint for delivery of Sub-project 5 is that construction of the proposed sewer main upgrades / duplication works cannot commence until WAF completes interim consolidation works at the existing Kinoya WWTP. The consolidation works, which will ensure that Kinoya WWTP has adequate hydraulic capacity to receive and treat existing sewer loads, should be complete by end 2016.

Deliverables for Part B of Sub-project 4 include:

- Tender evaluation report/s – submit within 2 weeks of close of tender;

### **Sub-project 6: Sewer Extension to Additional 15% Of Households**

The scope of work under Sub-project 6 will include:

- (i) review outputs of previous studies and related background information;
- (ii) topographic surveys (roads, existing house sewer outlets and septic tank inlet levels);
- (iii) develop preliminary sewer reticulation layouts based on topographic survey and cadastral information;
- (iv) undertake hydraulic analysis and sizing of reticulation mains, WWPS and rising mains;
- (v) prepare a Servicing Strategy report for each backlog area (or group of backlog areas serviced by a common reticulation WWPS) including summary of existing and projected future loadings and assessment of infrastructure options;
- (vi) incorporate WAF review comments and Resettlement Specialist inputs for each Servicing Strategy;
- (vii) undertake detail topographic survey and pegging of finalised sewer pipeline routes and access structures;
- (viii) undertake geotechnical investigations and other site investigations as required;
- (ix) identify, physically locate and survey all existing services including but not limited to: FEA overhead and underground power cables, WAF water and sewer mains, stormwater drainage lines, gas reticulation (if any) and telecommunications cables.
- (x) undertake WWPS & rising main design (Nakasi Regional WWPS and other reticulation WWPSs as required) including hydraulic and water hammer analysis;
- (xi) consultation with Authorities including but not limited to: WAF regarding (sewer loadings) and Fiji Electricity Authority (FEA) regarding power supply upgrade requirements;

- (xii) identify full extent of land acquisitions and easements required for the proposed infrastructure;
- (xiii) prepare detailed site survey plans indicating all proposed land acquisitions and easements on private land to assist with land valuation/compensation and assessment of other involuntary resettlement impacts;
- (xiv) Construction Hazard Assessment Implication Review (CHAIR 1, 2 & 3) workshops conducted in consultation with WAF staff;
- (xv) conduct a procurement risk workshop for the upgrade works in consultation with WAF / PMU and prepare a procurement plan for the agreed works packages;
- (xvi) Prepare detailed designs and tender documentation for work packages (4 no. assumed: WP06-1, WP06-2, WP06-3 & WP06-4) including all civil, electrical and mechanical works required for construction of WWPSs and sewer reticulation;
- (xvii) prepare outline Construction Environmental Management Plan (CEMP); and,
- (xviii) prepare cost estimates and program for delivery of the contract works packages;

Deliverables for Part A of Sub-project 6 include:

- Survey drawings and preliminary sewer reticulation layouts – submit within 12 weeks of commencement of Sub-project 6.
- Servicing strategy reports for each backlog area (or group of backlog areas serviced by a common reticulation WWPS) – submit within 18 weeks of commencement of Sub-project 6.
- Concept design reports for new WWPSs under Sub-project 6 – submit within 20 weeks of commencement of Sub-project 6.
- Detailed design report for sewer extension incorporating geotechnical investigation report/s, WWPS and rising main design, records of authority consultation letters, summary of land acquisition requirements – submit draft report within 26 weeks of commencement of Sub-project 6.
- Design safety report – submit with detailed design report.
- Survey drawings of required land acquisitions for pipeline and pumping station easements – submit with detailed design report.
- Detailed design drawings, specifications and tender documentation for all work packages – submit within 32 weeks of commencement of Sub-project 6.

The scope of work under **Part B** of Sub-project 6 will include:

- (i) provide assistance to WAF throughout the bidding process, including communication and project advertisement at local and international level, identification and contacting potential bidders, responding to tender enquiries;
- (ii) undertake detailed technical review and evaluation of tenders for the sewer reticulation and WWPS construction works contract packages including preparation of a detailed and exhaustive tender evaluation report with recommendations to WAF. The evaluation report will cover detailed technical and financial evaluation of the bids received;
- (iii) perform the duties and functions of the 'Engineer' under the FIDIC form of contract including Defects Notification Period;
- (iv) supervision of Contract works and defect rectification works during the Defects Notification Period;
- (v) provision of post-design advice;
- (vi) coordination and monitoring of power supply upgrade design and construction works by FEA;

- (vii) environmental monitoring and audit during construction phase;
- (viii) proactively identify and assist with resolution of all involuntary resettlement impacts;
- (ix) review of As-Built documents (drawings), Operation & Maintenance Manuals, Standard Operating Procedures (SOPs) and operator training modules;
- (x) review of pre-commissioning and commissioning testing plans for WWPS and provision of technical assistance throughout the commissioning process; and
- (xi) report to the assigned WAF Project Manager throughout the design development and advance procurement phase and provide technical assistance and project management support as required.

A key program constraint for delivery of Sub-project 6 is that commissioning of the new regional WWPS, reticulation WWPSs and connection of households in backlog areas to the new sewerage system cannot commence until Kinoya WWTP is upgraded. The estimated date for commissioning of the proposed Kinoya WWTP upgrade works is mid 2018.

**C. TEAM COMPOSITION & QUALIFICATION REQUIREMENTS FOR THE KEY EXPERTS  
(and any other requirements which will be used for evaluating the Key Experts under Data Sheet 21.1 of the ITC)**

1. **Senior Project Manager / Team Leader** – 15 years experience in design, delivery of water and wastewater infrastructure including completion of at least 2 projects of similar scale and complexity is preferred. Previous relevant experience with construction of sewerage reticulation schemes, upgrade of wastewater pumping stations and sewer rehabilitation / relining works and will be considered advantageous.
3. **Senior Civil Engineer (design)** – 15 years experience in design and delivery of water and wastewater infrastructure including completion of at least 2 projects of similar scale and complexity is preferred. Previous relevant experience with construction of sewerage reticulation schemes, upgrade of wastewater pumping stations and sewer rehabilitation / relining works and will be considered advantageous
4. **Senior Civil Engineer (construction supervision)** – 10 years experience in design and delivery of water and wastewater infrastructure including completion of at least 2 projects of similar scale and complexity is preferred.
5. **Structural Engineer** – 10 years experience in design of reinforced concrete and steel structures is preferred. Prior experience in design of water retaining structures and protective coating systems will be considered advantageous.
6. **Mechanical Engineer** – 10 years experience in mechanical design of water and wastewater infrastructure is preferred. Prior experience with mechanical design of wastewater pumping stations and associated infrastructure will be considered advantageous.
7. **Electrical Engineer** – 10 years experience in electrical design associated with water and wastewater infrastructure is preferred. Prior experience with electrical design of wastewater pumping station upgrades (ie brown-field sites) will be considered advantageous.

8. **SCADA / Automation Engineer** – 10 years experience in design of SCADA, telemetry, instrumentation, electrical and process control systems associated with water / wastewater infrastructure is preferred. Prior experience with installation / commissioning of process control, telemetry and SCADA systems associated with wastewater pumping stations will be considered advantageous.

9. **Environmental Specialist** – 7 years experience in environmental assessment and monitoring of general infrastructure projects is preferred. Specific previous experience with preparation and implementation of Construction Environmental Management Plans, environmental auditing and supervision of construction works will be considered advantageous.

10. **Contract Documentation Specialist** - 10 years experience with documentation of construction contracts is preferred. Specific experience with FIDIC forms of contract and ADB procurement procedures will be considered advantageous.

Estimated inputs for Key Experts are listed in the table below:

Key Expert	Estimated Inputs (Person Months)		
	Part A	Part B	Total
Senior Project Manager / Team Leader	21	23	44
Senior Civil Engineer (Design)	26	-	26
Senior Civil Engineer (Construction Management)	-	28	28
Structural Engineer	3	1	4
Mechanical Engineer	12	13	25
Electrical Engineer	9	3	12
SCADA / Automation Engineer	2	2	4
Environmental Specialist	4	4	8
Contract Documentation Specialist	2	-	2
<b>TOTALS</b>	<b>79</b>	<b>74</b>	<b>153</b>

#### **E. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES**

General report submission requirements include but are not limited to:

- (i) Monthly consultant progress report (design phase) submitted no later than the 5<sup>th</sup> calendar day of each month.
- (ii) Monthly construction progress report (construction phase) submitted no later than the 5<sup>th</sup> calendar day of each month.

#### **F. CLIENT'S INPUT AND COUNTERPART PERSONNEL**

- (i) Services, facilities and property to be made available to the Consultant by the Client:
- (ii) A meeting room facility (approx.10 person capacity) is available at WAF head office for workshop and training activities.
- (iii) Professional and support counterpart personnel to be assigned by the Client to the Consultant's team: none.

#### **G. CLIENT WILL PROVIDE THE FOLLOWING INPUTS, PROJECT DATA AND REPORTS TO FACILITATE PREPARATION OF THE PROPOSALS:**

- (i) Water & Wastewater Master Plan for Greater Suva Area (Water Authority of Fiji 2015)
- (ii) Initial Environmental Evaluation for Wastewater Sub Projects (ADB / Water Authority of Fiji 2015)
- (iii) Land Acquisition & Resettlement Plan (ADB / Water Authority of Fiji 2015)