

Indicative Terms of Reference
51335-02-VAN: Luganville Urban Improvement PRF
Technical Assessment and Design Consultant (International Firm)

A. Introduction

1. ADB is supporting the Government of Vanuatu to prepare and implement the Luganville Urban Water Supply and Sanitation Project (LUWSSP). LUWSSP will improve access to integrated and resilient urban water supply and sanitation services in greater Luganville, Vanuatu. Feasibility studies and draft due diligence documents for improvements to water supply and sanitation were prepared in 2018 using technical assistance (TA) from the Cities Development Initiative for Asia.¹ LUWSSP aims to improve (i) urban water access, quality, and resilience, (ii) urban sanitation and hygiene awareness, and (iii) capacity and resilience in urban service delivery. The purpose of the technical assessment and design consultant's (TADC) assignment is to provide the necessary technical inputs to (i) establish baseline public health, affordability, environmental, and services/system performance understanding, (ii) support the procurement of the service improvement contractor for water supply and a civil works contractor for sanitation, and (iii) finalize selected due diligence documents for ADB approval.

B. Background

2. **Water supply services.** Despite the importance of greater Luganville as Vanuatu's second largest municipal area, fewer than 60% of its households have access to a piped water supply. The unserved households rely mainly on rainwater tanks and shallow groundwater wells that are vulnerable to drought, climate change, and contamination from poorly performing septic tanks and flooding. The piped water supply is often unreliable and unsafe. Water quality samples regularly fails drinking water standards. Service interruptions and low pressure are common, and the supply infrastructure is aged and leaking badly. The non-revenue water ratio is estimated at about 50%–60%.² The system lacks resilience to climate and natural hazards, and lacks the robustness to accommodate population growth and support economic development. The existing groundwater well is surrounded by households with on-site sanitation.

3. **Sanitation and hygiene.** No centralized wastewater collection or treatment exists in Luganville. In the municipal area, most households and businesses have on-site septic tanks, but many are unsealed and most are rarely emptied or provided with required treatment. Coupled with poorly performing transpiration trenches due to clay soils and high water-tables, these poorly constructed and maintained septic tanks create a major health risk in Luganville. Private septic tank vacuum truck operators empty septage into shallow unlined, unmanaged, and unlicensed pits on their own leased land. Toilets and washing facilities in Luganville's schools are too few in number and not properly designed. This impacts adversely on attendance, health, and convenience, especially for girls and disabled students. The only two public toilet facilities in Luganville—at Unity Park and at the main marketplace—are in disrepair and uninviting to locals and tourists. Water quality in Luganville's harbor and the Sarakata River has been degraded by poor sanitation, and the bacteria level in the Sarakata River far exceeds the recommended values for safe recreational water use.³

¹ ADB. 2013. *Supporting the Cities Development Initiative for Asia: Luganville Integrated Urban Development Plan*. Manila.

² Stantec. 2018. *Vanuatu-Luganville Water Supply Technical Audit*. May 2018. Auckland.

³ Department of Geology, Mines, and Water Resources. 2003. DGMWR Report No. 33B005, Luganville Coastal Water Quality Monitoring Program.

4. Feasibility studies for water supply and sanitation, and draft due diligence documents for environmental and social safeguards, procurement and financial management, economic evaluation and climate vulnerability were prepared during preparatory TRTA (refer footnote 1). The feasibility studies and associated draft link documents will be provided. The LUWSSP water supply improvements are proposed to be achieved through the procurement of a performance-based service improvement contract that includes two portions: (i) operations and maintenance of the existing water supply system for greater Luganville for a 7 year period with a focus on improved performance, and (ii) delivery of capital works that contribute to service improvements in accordance with an agreed capital works program. The LUWSSP sanitation improvements will include construction of three community sanitation facilities, construction of a septage facility to receive septage from the pumping out of local septic tanks, potential improvements to sanitation in priority schools, and a pilot for on-site sanitation in low-lying and high groundwater tables areas.

5. To improve the readiness of the LUWSSP and reduce implementation risks, ADB is preparing the Luganville Urban Improvement Project Readiness Financing (PRF) Facility. ADB and government have agreed on the use of a PRF to:

- a. Reduce the risk of encountering unexpected conditions during project implementation, by undertaking sufficient surveys, geotechnical investigations and unexploded ordinance investigations to support preparation of detailed designs and/or specifications;
- b. Reduce the level of uncertainty in the project's cost estimates and loan/grant amounts for approval by undertaking a detailed assessment and/or detailed design for some components of the project, supported by rigorous investigations as outlined in (a) above;
- c. Reduce safeguards related risks by ensuring adequate baseline data is collected and consultations undertaken to address environmental, social, affordability, land and resettlement issues;
- d. Improve the quality and efficiency of the preparation of the report and recommendations to the president of the ADB (i.e. being prepared by ADB staff) by supporting the preparation of the required due diligence documents.⁴

6. To achieve these overall objectives, the PRF facility will (i) undertake investigations, (ii) prepare designs, bidding documents and specifications, (iii) undertake advance action to advertise and evaluate LUWSSP bids, accelerating the start-up of the infrastructure services contracts and civil works proposed by the project, (iv) finalize due diligence documents to support ADB approval of the project, and (v) provide support for early start-up activities of the project implementation unit (PIU) and capacity building of the line ministries and PIU team. The TADC's services are being sought to provide the required technical inputs to support the PRF facility activities (i) to (iv) in particular.

C. Implementation arrangements

7. The Department of Water Resources (DOWR) of the Ministry of Lands and Natural Resources (MLNR) currently operates the Luganville water supply system and will be the key implementing agency for the water components of the project. The Department of Local Authorities (DLA) of the Ministry of Internal Affairs (MIA) and Luganville Municipal Council will be the implementing agencies for the sanitation components of the project. A PIU comprising key representatives from these implementing agencies and other key institutions such as

⁴ Draft due diligence documents covering economic, financial, procurement, environmental, climate resilience, social, gender, land/resettlement, and risk.

Ministry of Health will be established in Luganville. The capacity to implement the LUWSSP will be strengthened by the recruitment of individual consultants with technical, commercial, procurement and legal expertise, to work alongside the government staff of the PIU.

8. The TADC will be recruited under the PRF facility and will report to the PIU Director on daily activities and contractual matters. MLNR, MIA and LMC will provide project counterpart staff and/or focal points within the PIU to oversee PRF facility implementation and line ministry ownership. The contract will be partial lump sum, comprising a milestone based lump sum portion for remuneration and reimbursement of expenses for travel and other expenses.

9. This assignment is the first stage in implementation of the LUWSSP and potential future infrastructure improvements in greater Luganville. Because the LIUDP includes a long list of required infrastructure, the government and ADB have agreed to establish the PIU in Luganville, to build the local capacity to implement the LUWSSP and potential future projects. The current assignment only covers the technical advisory services required to support preparation up to contract award of the water supply services and sanitation works. The consultancy contract may be extended in future to provide other services such as contract supervision or other implementation services, depending on consultant performance, available budget, and government direction.

10. To facilitate close cooperation with stakeholders and support the long-term focus of the PIU and infrastructure program, the government will establish: (i) a steering committee, comprising senior government officials and decision-makers from key ministries (i.e. Director General or nominee), and (ii) a task force / working group comprising key infrastructure stakeholders in Luganville.⁵

11. As a separate activity and based on the experience of donor-funded infrastructure projects in Vanuatu, the government proposes to engage an independent design review consultant (IDRC), to undertake a third-party review of the technical assessment, designs, and specifications prepared by the TADC. The IDRC is also expected to strengthen the technical and design review capacity of MLNR, MIA, and LMC. The TADC is expected to cooperate with the IDRC consultant to ensure an efficient and iterative design review process. The intention is to improve the relevance and the quality of the technical work, and reduce implementation-phase risks.

D. Objective of assignment

12. The purpose of the TADC's assignment is to provide the necessary technical inputs to (i) establish baseline public health, affordability, environmental, and services/system performance understanding, (ii) support the procurement of the service improvement contractor for water and sanitation contractor for sanitation. To achieve this purpose, the TADC will undertake activities to enable suitably experienced contractors to (i) submit sound tenders for the improvements to the performance of the water supply system, including operation and maintenance, preparation of a system improvement plan, and design and delivery of agreed capital works, and (ii) submit cost-effective tenders, potentially from domestic contractors, for the construction of the sanitation civil works.

E. Available data and reports

13. The following data and information is readily available to the consultant:

- (i) GIS files of water supply network;
- (ii) Uncalibrated water supply network model (2018);

⁵ This task force / working group will be identified prior to commencement of the consultancy services.

- (iii) Water quality results from random sampling in the network;
- (iv) Luganville Integrated Urban Development Plan (CDIA/ADB, 2018/2019);
- (v) Luganville water supply feasibility study and associated draft due diligence documents (ADB, 2018/2019);⁶
- (vi) Luganville sanitation feasibility study and associated draft due diligence documents (ADB, 2018/2019) (footnote 23);
- (vii) Luganville Water Audit Report (Stantec, 2018);
- (viii) Executive Summary of Luganville PPP prefeasibility study (PSDI, 2019); and
- (ix) Sanitation and Hygiene Policy (DOPH, 2018).

F. Scope of Works – Technical Assessment and Design

14. The TADC will assume overall responsibility for the preparation of baseline information and design and bidding documents suitable for (i) the service improvement contract for water supply, and (ii) civil works contract for sanitation works. The TADC will manage the bid and evaluation process up to and including signing of contract packages for both subprojects. However, given the specialized nature of the work, an independent commercial specialist advisor (recruited by the government/ADB) will guide and peer review the water supply service improvement contract bid process and documentation.

15. The TADC's scope of work **for water supply** will consist of:

- (i) Site and field investigations (as provisional items, with costs to be refined during the inception phase of the consultancy):
 - a. Review of feasibility studies and gaps in baseline data for the purpose of future project impact monitoring and bidding of works by contractors (i.e. what would the service improvement contractor reasonably expect to know to bid the 7 year service contract confidently);
 - b. Preparation and approval (by government) of an investigations plan;
 - c. A geotechnical investigation to demonstrate to bidders representative ground conditions in the vicinity of the proposed source, pipelines, and reservoirs;
 - d. Hydrogeological investigations for the proposed new water source and the old groundwater source near Palekula Bay to estimate the source's yield;
 - e. Water quality sampling, testing and analysis of current and proposed raw water source;
 - f. Unexploded ordinance desktop survey sufficient to identify if there are any major risks associated with unexploded ordinances;
 - g. Installation, maintenance and data download and analysis of bulk flow meters and pressure gauges to inform system assessment; and
 - h. Condition assessment of above-ground and below-ground water supply assets;⁷
 - i. Baseline noise and other environmental monitoring;
 - j. Ability and willingness to pay survey of water supply customers in the greater Luganville area in collaboration with DOWR and the Utilities Regulatory Authority (URA).

⁶ The following draft due diligence documents to support ADB approval have already been prepared and require review and update: Economic Analysis, Financial Analysis, Summary Poverty Reduction and Social Strategy, Gender Action Plan, Initial Environment Examination, Land Acquisition and Resettlement Plan, Risk Assessment, Community Engagement and Communications Plan, Climate Risk and Vulnerability Assessment (water supply only).

⁷ Various reports exist summarizing the asset details and condition over the past 5 years. The Department of Treasury is currently re-evaluating assets. The consultant will need to review previous asset information and liaise with others (e.g. Treasury) to determine the best approach to identifying and creating a baseline assessment of active and passive assets.

(ii) Water supply system assessment:

- a. Preparation of geographical information systems (GIS) files for water supply assets including data fields for dimensions, materials, age, condition and failure history;
- b. Analysis and documentation of key components of current operating cost;
- c. Analysis and documentation of current system information (e.g. flows, pressures, water quality levels of service);
- d. Preparation of a water balance in accordance with the International Water Association's (IWA) method to estimate non-revenue water and estimate the potential level of reduction in commercial and physical losses and associated costs;
- e. Preparation and validation of a water supply network model to confirm water supply service levels;
- f. Documentation of proposed/target levels of service objectives in collaboration with the individual international consultant Water Institutional Advisor (recruited by ADB to support DOWR), DOWR and URA;⁸
- g. Preparation of an outline 10 year works program covering indicative capital and operating improvements to determine overall costs of service delivery and performance improvements over the 7 year service contract.
- h. Technical assessment report covering condition and capacity issues, and including an outline of proposed time-phased service objectives/performance objectives and estimated costs of achieving those performance improvements;⁹

(iii) Specification, bidding documents and associated services:

- a. Preparation of a performance specification (i.e. level of service objectives to form the basis of a performance-based contract) in collaboration with the Commercial/Legal Advisor, Water Advisor, DOWR, URA, LMC and other key stakeholders to be included in the Employer's Requirements of the proposed service improvement contract;¹⁰
- b. Prepare relevant standard specifications to be included in the Employer's Requirements which may include reference to international standards commonly used in Vanuatu for materials and works;
- c. Prepare bidding documents for procurement of the proposed works/services in close collaboration with the Commercial/Legal Advisor;
- d. Provide 70% and 95% drafts for review by government, ADB, and the IDRC at the 70% and 95% hold points;
- e. Management of the bid and evaluation process up to and including signing of contract packages for the water supply service improvement contract; and
- f. Internal quality assurance of all technical work and evidence of this quality assurance being undertaken.

16. The TAD's scope of work **for sanitation** will consist of:

⁸ Including, but not limited to: water quality, residual pressure, reliability/continuity, flow to customers, coverage/access, energy efficiency, climate resilience, safeguards/ community, customer responsiveness, and average asset condition.

⁹ The purpose of time-phased service level targets is to drive short-term and long-term performance improvements. For example, improving continuity in the short-term could be resolved cost effectively by increasing the resilience of the main pump station, while increasing coverage in the long-term will require expansion of the network through capital works.

¹⁰ Note that the overall service improvement contract will be prepared by a separate commercial specialist to be engaged by government.

- (iv) Site and field investigations (as provisional items, with costs to be refined during the inception phase of the consultancy):
 - a. Review of feasibility studies and gaps in baseline data for the purpose of future project impact monitoring and bidding of civil works;
 - b. Preparation and approval (by government) of an investigations plan;
 - c. Geotechnical site investigations for the site of the proposed community sanitation facilities, septage facility and on-site sanitation pilot in the low-lying areas of Sarakata and Pepsi;
 - d. Baseline water quality sampling and testing of local groundwater and surface water in the Sarakata River and in Main Channel;
 - e. Topographic survey of proposed sites to support detailed design and land (easement) acquisition;
 - f. Unexploded ordinance survey sufficient to estimate the costs associated with unexploded ordinances;
 - g. Ability and willingness to pay survey of sanitation customers in the greater Luganville area in collaboration with MIA, LMC, SPGC and the Utilities Regulatory Authority (URA); and
 - h. Services location of existing services on the proposed sanitation infrastructure sites to confirm existing services (e.g. water, power etc), in relation to existing and proposed site layouts;
 - (v) Detailed design, bidding documents and associated services:
 - a. High level assessment of centralized vs decentralized sanitation options (i.e. confirm the suitability of the proposed on-site sanitation solution prior to commencing investigations or detailed design);
 - b. Preparation of presentation materials for and participation in community consultation with PIU staff and advisors to solicit feedback and design inputs from local communities;
 - c. Preparation and approval of a design basis report covering proposed design criteria and standards;
 - d. Detailed design of required infrastructure with review points by government and an independent design reviewer at the 30%, 70% and 95% hold points;
 - e. Preparation of capital cost estimates for detailed design to +/- 10% accuracy;
 - f. Operating and maintenance cost estimates;
 - g. Tender and for-construction drawings;
 - h. Specifications and bidding documents for procurement of the proposed works;
 - i. Design Report outlining site investigations in item (ii) above, design activities and decisions in (a) to (f) above, and quality assurance and review activities in (j) below;
 - j. Management of the bid and evaluation process up to and including signing of contract packages for the sanitation infrastructure;
 - k. Preparation of an outline asset management, maintenance and financing plan for the proposed sanitation facilities, in close collaboration with LMC, SPGC and MIA; and
 - l. Internal quality assurance of all designs and documents and evidence of this quality assurance.
17. Additional scope items covering both water supply and sanitation include:
- (vi) Review and drafting of due diligence documents (refer footnote 23 for draft due diligence documents already prepared):

- a. Review draft due diligence documents prepared during the preparatory TA in 2018 and identify specific areas requiring refinement or update;
- b. Update the economic and financial analysis and combine the separate water and sanitation analyses into one project analysis (note – separate water supply and sanitation analyses were prepared during the preparatory TA);
- c. Review and update the financial management and procurement assessment for the project;
- d. Review and update environment, social, and gender due diligence documents;
- e. Review and update climate risk assessment in accordance with ADB standard templates to inform performance indicators and areas for service improvement (e.g. resilience).

(vii) Provide technical support and participate in community consultation on both the water supply and sanitation subprojects:

- a. Design an ability and willingness to pay survey for both water supply and sanitation;
- b. Participate in community information sessions (provisional item);

18. **Outputs.** The technical assessment and design work will be output based, with the required outputs and delivery schedule presented in Table 1 below.

Table 1: Output and Delivery Schedule

Output	Description	Due Date
1. Inception Report (<i><20 pages excluding appendices</i>)	The TADC will present the detailed workplan for implementation of the services. Prior to delivery of the Inception Report, the consultant will have visited the sites, reviewed the feasibility studies, and consulted with key stakeholders. The Inception Report will include, but not be limited to: <ul style="list-style-type: none"> i. A review of available data and data gaps, identifying critical data required; ii. a detailed implementation schedule presented on a gantt chart, including target dates and deliverables for individual activities within the timeframes included in this TOR. iii. proposed staffing schedule. iv. technical review of feasibility studies including key design assumption and design basis in feasibility studies. v. detailed of any encountered or anticipated issues and proposals to overcome identified issues. vi. any changes to the consultant's team and proposed alternatives. vii. communication and consultation plan for the services, consistent with the PRF and ensuing project's communication plan. viii. any contractual issues requiring discussion. ix. proposed table of contents for all subsequent deliverables. x. Proposed data collection and investigations plan including draft terms of reference for investigations. 	4 weeks from signing of contract
2. Survey and Investigation Reports and files (<i>provisional items</i>)	Including survey reports for <ul style="list-style-type: none"> i. Topographic surveys; ii. Geotechnical survey; iii. Hydrogeological survey; iv. Groundwater, treated water and receiving water quality survey; v. Desktop unexploded ordinance; vi. Asset register and asset condition assessment; 	3 months from signing of contract

	<ul style="list-style-type: none"> vii. Non-revenue water; viii. Baseline environmental monitoring; ix. Underground services for sanitation infrastructure sites; x. Ability and willingness to pay. <p><i>(Note – depending on timing of investigations, these could be separate reports or a combined report)</i></p>	
<p>3. Sanitation Concept Design Report (<i><30 pages excluding appendices and drawings</i>)</p>	<p>The Sanitation Concept Design Report will include, but not be limited to:</p> <ul style="list-style-type: none"> i. outline of proposed design objectives; ii. description of existing sites including a summary of relevant investigations information; iii. outline of proposed design basis including design criteria, flows, expected water quality and other relevant standards; iv. concept for proposed options for all sanitation facilities under the project; v. high level comparison of available options including technical, environmental, social and O&M; vi. concept level drawing of preferred option(s); vii. a draft risk assessment and risk mitigation strategy covering water quality, system operations (including power supply), institutional constraints, land issues, etc); viii. preliminary construction sequence to support ongoing operation of existing assets and sites, including identifying any temporary works and measures; ix. proposed decommissioning, demolition and disposal plans for sites with existing facilities; x. recommendation of preferred option(s) for sanitation infrastructure to progress to detailed design; xi. description of any additional information or data required to progress to detailed design. <p><i>(Note – the Concept Design Report is an interim deliverable and can form the basis of the Final Detailed Design Report. It is not expected to generate several design reports)</i></p>	4 months from signing of contract
<p>4. Water Supply Technical Assessment Reports (<i><30 pages excluding appendices and drawings</i>)</p>	<p>The Water Supply Technical Assessment Report will include, but not be limited to:</p> <ul style="list-style-type: none"> i. presentation of existing system basic information (i.e. assets; ii. analysis and discussion of system performance and customer service standards for the overall system and by zone; iii. analysis of the overall condition of the water supply network including areas of poor condition and contributing factors (e.g. age, material, construction practices, geotechnical conditions, natural disasters) iv. an International Water Association water balance and analysis of existing NRW components, potential NRW reduction activities and estimated costs of NRW reduction; v. a draft risk assessment and risk mitigation strategy covering water quality, system operations (including power supply), natural disasters, high urban growth and financial management); vi. estimate of future asset replacement needs; vii. estimate of required operations and maintenance resources and costs; 	5 months from signing of contract

5. Water Supply bidding documents	The TADC will prepare a full set of bidding documents for the water service improvement contract in collaboration with the Commercial/Legal Advisor, the implementing agencies and the ADB's team. Bidding documents will be reviewed and approved by the Government of Vanuatu and ADB and will be suitable for advertising. The documents will be consistent with ADB's Procurement Guidelines (2017, as amended from time to time) and the project Procurement Plan, although the Commercial/Legal Advisor may suggest refinements to the standard bidding documents (in consultation with ADB) to accurately communicate the nature of the service improvement contract.	6 months from signing of contract
6. Sanitation Facilities bidding documents	The TADC will prepare a full set of bidding documents in accordance with ADB's Procurement Guidelines (2017, as amended from time to time) and the project Procurement Plan. Bidding documents will be reviewed and approved by the Government of Vanuatu and ADB and will be suitable for advertising. These will include an invitation to bid, the basic data sheet, qualification and evaluation criteria, description of the employer's requirements, technical specifications, a letter of bid, bid forms, draft General and Particular Conditions of Contract, and other necessary documents to be included in the bidding documents as required. A Final Design Report will also be included.	6 months of signing of contract
7. Procurement	<p>The TADC will facilitate procurement in accordance with ADB Procurement Guidelines (2017, as amended from time to time), and as directed by the PIU, including but not limited to:</p> <p>Advertising</p> <ul style="list-style-type: none"> i. Provide necessary information to ADB to advertise bidding documents ii. Provide clarifications to contractors on behalf of the government iii. Facilitate site inspection for bidders. <p>Bid Opening</p> <ul style="list-style-type: none"> i. the PIU will receive bids on behalf of the government; ii. facilitated and document the bid opening process and reporting. Actual bid opening will be conducted by the government. <p>Bid Evaluation Report</p> <ul style="list-style-type: none"> i. Evaluate bids¹ ii. Facilitated bid evaluation review meetings, and iii. Prepare the bid evaluation report. <p>Contract Award</p> <ul style="list-style-type: none"> i. Facilitate award of contract; and ii. Arrange publication of award of contract and debrief contractors as required 	

¹ The TADC will support the PIU and relevant ministries to evaluate bids.

19. **Schedule and Payment Milestones.** The schedule of outputs and associated payment milestones is summarized in Table 2.

Table 2: Schedule of Outputs and Payments

Milestone/Deliverables	Time from contract signing	Target Date	Remuneration Milestone Payment
1. Mobilization	2 weeks		10%
2. Survey Reports	3 months		10%
3. Sanitation Concept Design Report	4 months		15%
4. Water Technical Assessment Report	5 months		15%
5. Approved bidding documents	6 months		20%
6. Advertising of bidding documents	8 months		15%
7. Contract award	11 months		15%

1. Excludes survey and investigations costs which are provisional items and will be invoiced alongside out of pocket expenses.

G. Staffing and Expertise

20. **Indicative staffing.** A firm will be engaged on an output-based terms of reference (i.e. this terms of reference) with a partial lump sum contract through quality and cost-based selection (QCBS, 90:10), using full technical proposals. The expectation is that the project team will comprise a mix of international and national consultants with a range of skills in water supply, sanitation, asset condition assessment and procurement. Firms are encouraged to promote diversity in the selection of project team members. Proposals where the consulting teams are led by permanent staff of the firm will be favorably received. Bidders will determine the number and the nature of the experts they will require to deliver the outputs of the contract, in accordance with their approach and methodology.

21. **National (i.e. Vanuatu) content.** Inclusion of national consultants and national sub-consultants in key roles of the consulting team will be highly regarded. In accordance with ADB's new procurement framework, domestic preference will be applied to the evaluation of EOIs and bids. ADB and the government will consider the inclusion of nationals in key roles as an evaluation criterion, and points will be awarded accordingly.

22. **Key staff qualifications and activities.** As a minimum, the Consultant's project team will comprise the experts listed in Table 3 below. Minimum person-month allocations are also provided; however, it is reiterated that this TA will be awarded based on an output-based contract in which the consulting firm proposes the actual time allocation and additional team members. The consulting firm will be responsible for clearly assigning tasks to each expert.

Table 3: Indicative Key Expert Requirements

Experts (International or National)	Minimum Person-months	Preferred qualifications and expertise	Indicative Tasks
Water Utility Specialist (Team Leader)	2.0	The Team Leader will preferably have a university degree or above in engineering (mechanical, civil, electrical) or a related field. He/she will preferably have at least 15 years of experience of water utility management covering condition assessment, asset management,	Overall responsibility for the successful completion of the assignment with specific responsibility for scoping and leading the system performance assessment, condition assessment, data collection and studies, overseeing the preparation

		water supply system performance, and water supply infrastructure planning. Experience in developing countries or remote locations, particularly in the Pacific, is required.	and quality of all studies and reports, and collaborating with PIU team members and independent government advisors (recruited separately).
Non-revenue Water Specialist	1.0	The non-revenue water specialist will preferably possess a university degree in civil engineering (or a related field). He/she will also preferably have at least 15 years of experience with designing NRW monitoring programs, field measurement of flow and pressure data, and preparing practical NRW reduction programs in resource-constrained environments. Experience in developing countries or remote locations, particularly in the Pacific, is required.	The NRW specialist will be responsible for planning and implementing the flow and pressure monitoring, preparing the water balance and identifying opportunities for reducing non-revenue water, preparing a report on NRW baseline and reduction potential.
Water/ Sanitation Process Specialist	1.0	The process specialist will possess a degree in chemical engineering, environmental science, or a related field. He/she will also have at least 10 years' experience in water quality monitoring, and process design for water and sanitation. Experience with small water supply systems and in designing on-site sanitation or decentralized sanitation systems is required. Experience in developing countries or remote locations, particularly in the Pacific, is preferred.	The process specialist will be responsible for preparing and implementing a water quality monitoring program, analyzing water quality risks, and overseeing the preparation of the design and bidding documents for the community sanitation facilities and septage facility.
Procurement Specialist	1.0	The procurement specialist will possess a relevant university in a field such as engineering, commerce, or business. He/she will have at least 10 years' experience in performance-based contracts and civil works contracts, and have demonstrated experience in leading civil works and service improvement procurement processes for multi-lateral development banks. Experience in developing countries or remote locations, particularly in the Pacific, is required.	The procurement specialist will be responsible for preparing the bidding documents for sanitation facilities and leading the procurement process. The procurement specialist will also be responsible for liaising with the government advisors for the water service improvement contract and providing the agreed performance and general specifications for the water supply bidding process.
Project Engineer / Deputy Team Leader (national)	3.0	The Deputy Team Leader will preferably have a university degree in civil engineering, urban planning, or physical science (or a related field), and be very knowledgeable of the Luganville local political and urban infrastructure environment. English fluency is required and prior experience abroad, or with assignments with foreign firms and/or international organizations is preferred.	Responsible for assisting with the preparation of the data collection and investigations plans, coordinating field investigations and managing local survey teams, and coordinating with other individual specialists and government staff on the project.

23. **Non-Key Expert requirements.** The TADC shall decide which other resources may be needed to successfully complete the assignment but it is recommended that the project team includes non-key experts with skills and experience suitably covering the following areas:

- Utility operations planning and implementation.
- Institutional coordination, development and capacity building.
- Climate and environmental analysis.
- Geographical information systems (for GIS files to present condition assessment)
- Mechanical and electrical engineering.
- Geotechnical engineering and hydrogeology.
- Administrative support.

H. **Other information about the consultancy services**

24. **Duration of the assignment.** The assignment will be implemented over a period of 12 months and will be undertaken both in the field (Luganville and Port Vila) and the consultant's home office. Key team members are expected to spend at least 50% cent of their input time in Vanuatu.

25. **Quality Assurance of Deliverables.** While the government proposes to recruit an IDRC to review the technical assumptions and content of the consultant's work, the first critical step in quality control should be done by the consultant. It is expected that the consultant possesses and can demonstrate compliance with quality assurance and review procedures. Prior to submitting any deliverables for government's review, all documents/deliverables shall be reviewed by a suitably qualified person. The consultant shall provide evidence of technical review (e.g. technical review certification page in submitted documents) to demonstrate that the review has been undertaken. Detailed design drawings for tender and/or construction shall be certified by a suitably qualified person, preferable the technical reviewer throughout the assignment to achieve continuity.

26. **Collaboration and liaison with other consultants.** The consultant will be required to collaborate closely with other consultants. Specialist and strategic guidance for the water service improvement contract will be provided by an individual commercial/legal advisor, and an independent design review firm will be recruited to assist government with review of all deliverables.

27. **Deliverables Reviews and Hold-points.** After the production of each major draft report, the PIU will provide consolidated comments (based on reviews by the PIU team and advisors, line ministries and the IDRC) to the TADC within 10 working days. The PIU and its advisors will jointly determine if all key deliverables were provided as agreed and will review and discuss the quality of the outputs. The TADC shall revise and re-submit the report within two (2) weeks after receiving comments together with a comments response matrix. The new submission will then be reviewed again by the PIU to determine acceptance.

28. **Progress Monitoring and Reporting.** In addition to the outputs/deliverables presented in table 1, the consultant will prepare and submit to the PIU a concise monthly report outlining: progress against program, achievements, required variations, delivery risks, data needs, and next steps. The government reserves the right to establish any other reporting mechanisms deemed necessary to ensure high quality is maintained and delivered at all times during the assignment. Further details will be defined in the contract with the consulting firm.

29. **Language.** All project reports shall be written in English. It is the consultant's responsibility to ensure that editorial reviews have been undertaken and that written documents are consistent with the ADB style guide (reference) prior to submission to the PIU.

The draft and final versions of reports may, if requested by the PIU or Steering Committee, be translated into French (or Bislama) and be submitted at the same time as the English versions to ensure that stakeholders have sufficient time to prepare comments.

30. **Translation** support between English and French (or Bislama) may, if requested by the Steering Committee, be required for most project meetings. Printed PowerPoint presentations that will be distributed during workshops shall be produced in English and, if requested by the Steering Committee, in French or Bislama. The consulting firm is expected to procure translation services, as necessary, in relation to workshop outputs.

31. **Final Reports and Working Documents.** Final versions of reports will be shared in soft and hard copy to the government (5 copies) and ADB (2 copies). All soft copies will be shared in MS Word and PDF formats. The consulting firm shall also provide the government with a USB or DVD with all materials produced under the TA, including the final electronic version of all analyses, modelling results, map files (e.g. GIS), drawing files (i.e. CAD), photographs, videos, and any working documents. The USB or DVD with all source files will be filed under self-explanatory file names and directory structure (including data collected, spreadsheets and models etc.).

32. **Meeting and Workshops:** The Consultant will organize and participate in meetings and workshops with the PIU, the Steering Committee and stakeholder groups in order to foster quality project design and to develop local capacity. As described above, workshops shall be held to present the results of major project deliverables (i.e. inception, interim and final reports) but the Consultant is also encouraged to conduct additional workshops and stakeholders' sessions and to document the need for such additional workshops in its proposal.

33. **Facilities to be provided to the consultant.** The implementing agencies are establishing a project implementation unit in Luganville. The IAs will therefore provide an office to the consulting team. The ADB-funded PRF will support the establishment of the office and ground transport in the coming months. The ADB-funded PRF will finance additional human resources (e.g. technical, financial, procurement) to operate the PIU.