

**Terms of Reference (TOR)
for the
Conduct of Feasibility Studies for Non-Revenue Water Reduction and Control Projects
and Concept Designs for Sanitation Projects**

1. BACKGROUND/RATIONALE

1.1. Contracting Authority

The General Appropriations Act (GAA) of 2014 has allocated the amount of Four Hundred Million Pesos (PhP400,000,000.00) for the conduct of feasibility studies (F/S) to be administered by the National Economic and Development Authority (NEDA).

For this TOR, NEDA shall be the Executing Agency and Contracting Party, while the Local Water Utilities Administration (LWUA) shall be the Implementing Agency. The proposed project is consistent with LWUA's major programs/projects/activities (PPAs).

1.2. Relevant Country/Sector Context

The proposed conduct of F/S for non-revenue water (NRW) reduction and control projects, and Concept Designs for *sanitation*¹ projects will ensure the development of cost-effective, results-oriented projects for targeted water districts (WD).

LWUA is a government-owned and controlled corporation (GOCC) tasked to establish, maintain, fund, and oversee the general operations of WDs, including financial, technical, advisory, and training assistance. However, LWUA has limited experience in the areas of sanitation and NRW reduction and control, and has relied on F/S prepared by donor agencies such as KfW and the Japan International Cooperation Agency (JICA).

1.3. Current State of the Water Supply and Sanitation Subsector

Although availability of potable drinking water is fairly good in the Philippine countryside, it is still below the 2015 target coverage of 86.9% aspired for under the Millennium Development Goals (MDGs). The current piped water supply service coverage in the countryside is about 31%, with average system loss between 40% and 45%, which are a huge loss of potential revenue as well as a waste of resources.

¹ **Sanitation** refers to a wide range of services and arrangements related to the hygienic and proper management of human excreta (feces and urine) and community liquid wastes to safeguard the health of individuals and communities.

Meanwhile, the state of sanitation paints a far less rosy picture. There is substantial gap between the water supply and sanitation subsectors in terms of investments. Perhaps no more than 5% of the Philippine countryside (outside of Metro Manila) is served by *institutional sanitation*² management programs. Domestic and commercial wastes are either accumulated in ill-designed septic vaults or improperly hauled and questionably treated and disposed, therefore, unregulated, by private desludgers.

1.4. Related Projects/Programs and Other Donor Activities

LWUA has, through the years, availed of funds from various sources, such as Government subsidies, legislative fiats, and Official Development Assistance (ODA).

Presently, LWUA is currently in the negotiation phase for a US\$60.00 Million sector loan from the Asian Development Bank (ADB) to finance water supply, sanitation, and NRW reduction and control sub-projects, including the implementation of two (2) pilot sub-projects, under the *Water District Development Sector Project (WDDSP)*.

Moreover, the Metropolitan Waterworks and Sewerage System (MWSS) is in the process of implementing the *Bulacan Bulk Water Supply Project (BBWSP)* through Public-Private Partnership (PPP), which will address the need for bulk water supply through the development of water resources, conveyance facilities, and water treatment facilities to meet the immediate and future demands for potable water supply in Bulacan. The proposed studies under this TOR can be utilized by WDs, which will acquire bulk water under the BBWSP, so that their NRW can be addressed even before the first delivery from the BBWSP in late 2016 or early 2017.

2. OBJECTIVES AND EXPECTED OUTPUTS

By the end of the contract period under this TOR, the Consulting Firm is expected to produce forty-eight (48) Final Reports/Studies, comprising 33 sanitation project concept designs³ and 15 full F/S for the NRW reduction and control projects.

The conduct of the studies under this TOR shall focus on the development and selection of the best possible options/configurations/technology for sanitation projects and NRW reduction and control, that would yield the highest value-for-money (VfM), e.g., lowest lifecycle/whole-of-life costs, taking into account all alternative ways of delivering the desired

² **Institutional sanitation** refers to septage programs and/or sewerage systems operated by local government units (LGUs), WDs, or private operators such as Maynilad Water Services, Inc. and Manila Water Company, Inc. (MWCI). Institutional sanitation does not cover areas where private de-sludgers operate.

³ The conduct of **concept designs** is more extensive than a pre-feasibility study, but less than a full feasibility study. The difference is that *concept designs may utilize secondary or tertiary data sources*, while full feasibility studies are prepared based on primary data.

outputs, including the associated costs, benefits and risks involved, and which can be implemented by the concerned WDs in their respective areas by 2015 or early 2016.⁴

3. PROJECT DESCRIPTION

The Study shall cover the following 48 WDs located as far north as the Ilocos Region and as far south as the Autonomous Region in Muslim Mindanao (ARMM).

3.1 33 WDs are targeted as end users of the concept designs for the sanitation projects, as listed below:

- **25 coastal WDs** mandated by the Supreme Court (SC) Manila Bay Mandamus of 2012 to implement sanitation projects in the following provinces:

<u>Province</u>	<u>Number of WDs⁶</u>
Bataan	5
Bulacan	11
Pampanga	9

- **Eight (8) WDs** outside of those mandated by the SC Manila Bay Mandamus and have shown interest in the availment of loans from LWUA under the ADB-funded WDDSP, particularly those with accompanying proposed sanitation projects, as listed below:

<u>Water District</u>	<u>Province</u>
▪ Bayambang	Pangasinan
▪ Dipolog City	Zamboanga del Norte
▪ Bacolod City	Negros Occidental
▪ Sagay City	Negros Occidental
▪ Metro Bangued	Abra
▪ Metro Kalibo	Aklan
▪ Sorsogon City	Sorsogon
▪ Lipa City	Batangas
▪	

⁴ In undertaking the required options analysis or value engineering / value analysis (VE/VA) in the conduct of the study, the Consulting Firm may refer to the Value Analysis Handbook for NEDA (2009), which has developed guidelines and analytical tools on VE/VA. Said handbook can be downloaded from the NEDA website: <http://www.neda.gov.ph/wp-content/uploads/2014/01/Value-Analysis-Handbook.pdf>

⁶ **Bataan:** Abucay, Balanga City, Orani, Orion and Pilar

Bulacan: Balagtas, Bocaue, Bulakan, Calumpit, Guiguinto, Hagonoy, Malolos, Marilao, Meycauayan, Obando and Paombong

Pampanga: Apalit, Bacolor, Guagua, Lubao, Macabebe, Masantol, San Fernando, Sasmuan and Sta. Rita

- **15 WDs** in Bulacan province, which are beneficiaries of Stages 1 and 2 of BBWSP of the MWSS, are targeted as end users of the F/S for the NRW reduction and control projects.

3.2 Prioritization of the expected outputs will be as follows:

3.2.1 15 F/S for the NRW reduction and control projects to be implemented by the 15 identified WDs in Bulacan;

3.2.2 Eight (8) concept designs for the sanitation projects to be implemented by the eight (8) identified WDs not covered by the SC Mandamus; and

3.2.3 25 concept designs for the sanitation projects to be implemented by the 25 identified WDs under the SC Mandamus.

4. SCOPE OF WORKS

The Consulting Firm should be cognizant of the requirement for cost-effective projects, sustainability of project and resources, financial viability and sustainability, operational economy and simplicity, widest possible coverage, health improving schemes, and other considerations for the options analysis or value engineering / value analysis (VE/VA).

In the conduct of VE/VA, the Consulting Firm shall look at *alternative options to deliver the outputs and objectives of the projects (e.g., may include new available technologies, among others), including the associated costs, benefits and risks* involved. The Consulting Firm shall select the best alternative and/or project components that would most appropriately respond to the project objectives and outputs, and yield the highest VfM, e.g., lowest lifecycle/whole-of-life costs. Further, the study shall include an analysis of alternative financing schemes and implementation options, e.g., whether full WD equity, loan (such as commercial loan, financing through LWUA, etc.), combination of loan and equity, Public-Private Partnership (PPP), etc. The analysis of financing schemes and implementation options shall include an analysis of the associated financing risks and other risks involved.

The Team Leader under this TOR shall take the lead in undertaking the VE/VA study. The members of the Consulting Firm shall be required to provide data/information as needed by the other experts and/or by the Team Leader related to the conduct of VE/VA.

In the development of both sanitation and NRW reduction and control projects for each WD, the Consulting Firm is required to conduct the following activities, among others, as specified below, in accordance to *LWUA's Standards for F/S preparation*:

4.1. Assessment of the Sanitation Conditions in the Targeted WDs

The sanitation conditions in each of the targeted WDs shall be assessed to ensure that deficiencies of the facilities could be correctly considered and addressed. The study aims to bring out the realization of dependable sanitation projects to meet the

projected sewage and septic production for the design year, which shall be pegged at 15 years from the completion of the concept designs, or 2030.

4.2. Assessment of the Sources of the Water Losses or NRW

Diagnostic approaches in evaluating the NRW sources of the water supply systems as well as possible mitigation processes of assessed sources of water loss shall be developed for the subject WDs, among others. These shall provide the basis, among others, for the identification of possible engineering/management options that will mitigate and counterbalance the increase in water losses. The identified options shall include the following major components, wherein, if any of which is neglected or omitted, would have negative results on the sustainable implementation of the project:

- Bulk metering;
- Customer management and water sales;
- Service water and other free distributions;
- Real losses;
- Commercial (apparent) losses;
- Metering (apparent) losses; and
- Project management and change management.

It is expected that the proposed NRW reduction and control activities shall consider the operational project management, and change management dimensions, which are necessary for correct design and implementation. The design year of the study shall be pegged at 15 years from the completion of the F/S, or 2030.

4.3. Preparation of Preliminary Drawings

The preliminary drawings will be prepared with a computer-aided design and drafting (CADD) software following LWUA Drafting Standards and, as much as feasible, will include:

4.3.1. General plan at a suitable scale, showing the following:

- Location of the area in the country;
- Existing water sources, existing and/or proposed sewage treatment plant, reservoirs, pump houses, transmission mains, distribution mains, sewer lines, and other significant features of the system;
- Latitude and longitude lines;
- Location of benchmarks;
- Existing and proposed roads rights-of-way (RROW); and
- Rivers, streams, and bridges.

4.3.2. Maps of transmission main showing the diameter, type, and position in street of the proposed mains and/or existing sewer mains and laterals.

- 4.3.3. Longitude profile, if possible, of transmission pipes and sewer mains that should indicate invert levels of main, location, size, and nature of obstructions and ground levels.
- 4.3.4. Drawings regarding the existing buildings pump houses and other structures to be retained showing: existing components to be either abandoned or rehabilitated, and the proposed works;
- 4.3.5. Maps of the distribution network showing the proposed pipelines and the remedial works required to the existing pipelines; and
- 4.3.6. Drawings for new structures such as intake, pump houses, ground and elevated reservoirs/tanks, water treatment plants, sewage treatment plant, and others; the drawings will include plans and sections necessary to identify each structure in sufficient details.

4.4. Preparation of Cost Estimates

A bill of quantities (BOQ) shall be prepared, broken down into civil works (labor and construction material) and goods (equipment and related materials) to be procured either internationally or locally. The total cost of the project will be prepared on the basis of price levels prevailing locally and internationally at the time the preliminary design is prepared.

The costs will cover all sanitation project components and/or NRW reduction items. The estimate for civil works and electro-mechanical (E&M) equipment will be based on the unit prices of the various types of works involved. The cost for E&M installations will be estimated in line with current market prices.

4.5. Environmental Assessment

The Environmental Expert will have to verify the condition of the project area and carry out the environmental assessment in accordance with existing regulations.

4.5.1. The Environmental Expert shall consider the:

- diversion of surface water volume and/or spring yield during dry and rainy season;
- location, type and size of wells, facilities, and structures; and
- construction methods and the location of disposal of excavated materials as well as location of quarries and amount of required construction material from quarries.

4.5.2. The assessment will address:

- Harmony between the facilities and the surrounding landscape;
- Effects of sediment load increase during construction;
- Problems associated with construction such as disposal of excavated materials, water-borne disease, quarrying hazards, etc.; and
- Problem associated with construction and operation of water facilities including slope stability, soil erosion, and siltation.

The primary issue to be addressed is whether or not the catchment area of proposed water sources (river/spring) could be affected by long-term adverse impact on the environment.

Economic, social, and environmental benefits and damages brought about by the subproject (during construction and operation) in terms of both quantifiable and non-quantifiable short- and long-term effects “without” and “with” the project will be evaluated. The measures to minimize/offset the adverse impact, including the cost of implementing them, will be identified, and evaluated for each alternative to allow a full comparison of identified alternatives.

For each sub-project, an Initial Environmental Examination (IEE) that will identify negative impacts to the environment, including recommendations on appropriate measures to address them, will be prepared together with documents required for the issuance of an Environmental Compliance Certificate (ECC), if necessary.

Therefore, the environmental assessment for the project will have to ensure that the necessary protection measures and actions are identified and included in preparing the cost estimates of the proposed systems and also included in the preliminary design. The Environmental Expert will prepare for the project the IEE that will be included in the F/S.

4.6. Economic and Financial Analysis

The *economic analysis* will consider the following:

- a. Economic cost of the project including capital costs, capital equipment with economic life shorter than adopted discount period, incremental annual operation and maintenance (O & M) costs, costs for environmental mitigation measures; and
- b. Economic benefits quantifiable (e.g., savings from use of additional water available, public health benefits, fire damage savings, etc.) and non-quantifiable (environment and development impacts).

The quantified benefits will be evaluated “with” and “without” the project. Costs and benefits will be valued at constant prices and no price contingencies will be included in the economic cost of project. The analysis will determine the average incremental cost of water, and the economic indicators of economic internal rate of return (EIRR) and net present value (NPV).

In addition, sensitivity and risk analysis will be performed to assess the effects on the project by changing the value of some variables and calculating the changes in the EIRR and NPV. The results will be presented together with recommended actions or variables to monitor during implementation and operations.

The *financial analysis* will focus on the financial IRR (FIRR) and financial NPV calculation, as well as sensitivity analysis that will include: review of the WDs’ financial performance for the last 3-5 years including an assessment of the adequacy and level of the water tariff; costs - capital and recurrent; financing plan; financial projection; future tariff requirement, e.g., fees for the connection to the sewerage systems, septage extraction, environmental protection, among others, and ability-to-pay; and, risks and uncertainties. The costs (capital and annual O & M) will be detailed.

The capital cost will be grouped under the project components and phased annually over the appropriate construction period. The costs will be prepared at *constant prices (2014)* and split between foreign and local costs. *Inflation-adjusted costs* shall also be prepared to take into account inflation effects over each sub-project’s implementation period.

The costs, therefore, should include: detailed design and construction supervision as well as price and physical contingencies. Annual O & M cost for the expanded water system will also be determined.

The *financing plan* will take into consideration the funding of capital cost of the project including: possible international/ODA source, government contribution (e.g., through LWUA loan), if any, and WD equity contribution. It is also expected that the financial projection will include: revenue and expenditure statements; source and application of funds; and balance sheet.

It will be assured that the financial forecasts cover the completion of construction. The financial calculations will be prepared at current prices (i.e., including an allowance for projected inflation) and detailed with all the relevant assumptions. *The Consulting Firm will determine the future tariff implication of the financial projection by including the level and structure, plus the impact of affordability and ability-to-pay.*

In reviewing the ability-to-pay, special attention will be given to the urban poor. Finally, the financial analysis will include the evaluation of relevant risks and

uncertainties involved in the implementation and successful operation of the proposed subproject.

The Consulting Firm may also have the option to propose additional works to enhance the study, provided it shall bear no additional cost to Government. The scope of any additional proposed works by the Consulting Firm shall be established within the first three (3) months of the study, subject to the approval of Government.

The Consulting Firm shall also accommodate at least two (2) Government (e.g., technical personnel from NEDA and LWUA) on-the-job observers, who shall be detailed to the project for the purpose of capacity-building and technology transfer.

5. TIMELINES AND DELIVERABLES

5.1. Commencement Date and Period of Implementation

The Study shall be completed within a period of twelve (12) months, commencing from the date of receipt of the Notice to Proceed (NTP). Refer to **Annex A** for an illustration of the indicative implementation timelines for the subject study.

5.2. Table of Deliverables

Detailed Work and Financial Plan shall be submitted by the Consulting Firm to LWUA for review (copy furnished NEDA for monitoring purposes and payment processing) within five (5) working days from the date of commencement as indicated in NTP.

The deliverables for the subject as enumerated below shall be submitted by the Consulting Firm in four (4) hard copies to LWUA for review, and one (1) hard copy to NEDA for monitoring purposes and payment processing. An electronic/soft copy shall also be submitted to LWUA and NEDA.

<u>Deliverables</u>	<u>Timeline</u>
Draft Inception Report, including the finalized Work and Financial Plan	One (1) month from receipt of NTP
Final Inception Report	15 calendar days after receipt of comments from LWUA
Monthly Progress Reports	Monthly, within seven (7) calendar days from end of agreed month-period
Plans and specifications for NRW F/S	Not later than the sixth (6 th) month from the receipt of NTP

<u>Deliverables</u>	<u>Timeline</u>
NRW F/S draft reports	Not later than the sixth (6 th) month from the receipt of NTP
NRW F/S final reports	Not later than 15 calendar days after the sixth (6 th) month from the receipt of NTP
Plans and specifications for the sanitation projects concept designs	Not later than the eleventh (11 th) month from the receipt of NTP
Sanitation projects concept designs draft reports	Not later than the eleventh (11 th) month from the receipt of NTP
Sanitation projects concept designs final reports	Not later than the twelfth (12 th) month from the receipt of NTP

6. EXPERTISE REQUIREMENTS AND QUALIFICATIONS

The studies shall be undertaken by a Consulting Firm, which shall field in the following key experts to undertake the concept designs for the sanitation projects and full F/S for the NRW reduction projects:

6.1. Project Manager or Team Leader

- Shall prepare a general work plan and PERT-CPM of the study and coordinate all the activities of the Consulting Team;
- Shall submit the work plan and shall inform of any changes or variations;
- Shall attend meetings and submit reports and other documents as required by NEDA and/or LWUA;
- Must be at least a holder of a Master's degree or equivalent, with at least 20 years work experience, of which at least 15 years in design consulting in water supply, sanitation, or other urban infrastructure in Philippines; and
- Familiar with current best practices in water supply and sanitation (e.g., septage/sewerage) designs.

In addition, the Team Leader must be knowledgeable on VE/VA and have at least three (3) projects (preferably 5 projects) of work experience related thereto.

6.2. Deputy Project Manager or Assistant Team Leader

- Shall act as main conduit between the Consulting Firm and NEDA and LWUA;
- Shall also function as a *second senior sanitary engineer* for the sanitation projects;

- With at least 15 years work experience, of which at least 10 years in design consulting in water supply, sanitation, or other urban infrastructure in Philippines; and
- Familiar with current best practices in water supply and sanitation (e.g., septage/sewerage) designs.

6.3. Senior Sanitary Engineer/Designer

- With at least 15 years work experience, of which at least 10 years in design consulting in water supply, sanitation, or other urban infrastructure in the Philippines; and
- Familiar with current best practices in water supply and sanitation (e.g., septage/sewerage) designs.

6.4. Senior NRW Specialist

- With at least 15 years work experience, of which at least 10 years in design consulting in water supply, hydraulic analysis, or other urban infrastructure in the Philippines; and
- Familiar with current best practices in water supply facilities and water treatment design.

6.5. Electro-Mechanical Engineer

- With at least 15 years work experience, of which at least 10 years in design consulting in water supply, sanitation, or other urban infrastructure in the Philippines; and
- Familiar with current best practices in electro-mechanical installations for water supply and sanitation facilities.

6.6. Water Treatment Specialist

- With at least 15 years work experience, of which at least 10 years in design consulting in water supply, sanitation, or other urban infrastructure in the Philippines; and
- Familiar with current best practices in water treatment design.

6.7. Hydrologist

- With at least 10 years' experience in hydrological investigations, river flow measurements, hydrological analysis; and
- Minimum five (5) years previous experience working in the Philippines.

6.8. Environmental Engineer

- With at least 15 years work experience, of which at least 10 years in design consulting in water supply infrastructure in the Philippines; and
- Familiar with current best practices in environmental engineering.

6.9. Cost and Contracts Engineer

- With at least 10 years work experience in specification and contracts preparation and must be familiar with procurement procedures; and
- Must be updated on the latest unit costs of facilities and other work items.

6.10. Financial Specialist

- With at least 15 years work experience, of which at least 10 years in design consulting in water supply infrastructure in the Philippines; and
- Familiar with current best practices in water supply and sanitation financing.

6.11. Community Development Officer

- With at least 10 years experience in community development and liaising with LGUs in the preparation of draft ordinances such as on sanitation projects and in preparation of presentation materials to LGUs and WDs; and
- Minimum seven (7) years previous experience working in Philippines.

7. CRITERIA FOR SELECTION

The prospective Consultancy Firms must have at least 10 years of relevant experience related to this TOR and will be rated based on the criteria as shown in **Annex B** (*Rating Table for the Shortlisting of the Consulting Firms*). Prospective bidders are required to submit the following:

- a. Copies of *Certificate of Project Completion and Acceptance* from their previous related studies/projects within the past 5 years;
- b. Company profile; and
- c. Curriculum Vitae (CV) of Key Experts highlighting their relevant work experience.

Note: Related experience/studies include conduct of pre-F/S and/or F/S and relevant work experience. The Key Experts are requested to indicate: (1) their role in a specific project; (2) the exact duration that they have worked on the project; and (3) a brief description of the tasks that they have carried out (e.g., experience in the conduct of VE/VA or options analysis).

The Consulting Firm shall be selected using *the Quality-Cost Based Selection* procedure under Republic Act (RA) 9184 (Government Procurement Reform Act) and its Revised Implementing Rules and Regulations (IRR) and shall be based on the following criteria: *eighty percent (80%) Technical Proposal and twenty percent (20%) Financial Proposal.*

The prospective Consulting Firms shall follow the Guidelines in the Preparation of Eligibility Requirements as attached in **Annex C** of this TOR.

8. SOURCE OF FUNDS

Funds for the conduct of subject feasibility studies will be sourced from NEDA's F/S Fund.

9. INSTITUTIONAL SET-UP/RESPONSIBILITIES

9.1. NEDA

- 9.1.1.** Shall be the Executing Agency (i.e., representative of the Government in the Contract Agreement with the Consulting Firm);
- 9.1.2.** Shall, through its NEDA Bids and Awards Committee (NBAC), be responsible for facilitating the bidding and tendering of the consultancy services in compliance with RA 9184 and its IRR with the Implementing Agency as end-user;
- 9.1.3.** Shall be responsible for the disbursement of the fund for the conduct of the F/S once the contract becomes executed;
- 9.1.4.** Shall reimburse or pay in behalf of the Consulting Firm for amounts paid on account of all taxes, duties, levies, and other impositions under the laws and regulations of the Philippines or any political subdivision or agency thereof (other than personnel who are citizens or permanent residents of the Philippines), in respect of any payment made to the Consulting Firm in connection with the carrying out of the services;
- 9.1.5.** Shall be responsible for the preparation and submission of financial reports as required by the Department of Budget and Management (DBM) and other reportorial requirements regarding the F/S Fund administration; and
- 9.1.6.** Shall detail counterpart technical personnel to the project for the purpose of on-the-job capacity building/technology transfer.

9.2. LWUA

- 9.2.1.** Shall be the beneficiary/end-user of the consultancy services;

- 9.2.2. Shall be responsible for contract implementation and management, including ensuring the quality of outputs. Further, the NIA shall be responsible for the monitoring and evaluation of the progress of the study and approval of reports to ensure delivery of outputs as specified in Sections 2, 5 and 6 of this TOR;
- 9.2.3. Shall provide assistance in the coordination with other agencies related to the study;
- 9.2.4. Shall warrant that the Consulting Firm shall have free and unimpeded access to all lands and properties required for the effective execution of the services. Likewise, NIA shall be responsible for any damage to such land or any property thereon resulting from such access (unless such damage is caused by the wilful default or negligence of the Consulting Firm or its Staff);
- 9.2.5. Shall provide the Consulting Firm necessary/available information/data and also, if available, copies of previous related studies;
- 9.2.6. Shall evaluate all request for payments/billings and endorse to NEDA upon determination of the acceptability/correctness of the same;
- 9.2.7. Shall report to NEDA the physical progress of the study on a quarterly basis; and
- 9.2.8. Shall have the option to detail counterpart technical personnel to the project for the purpose of on-the-job capacity building/technology transfer.

9.3. Consulting Firm

- 9.3.1. Shall be responsible for the conduct of the study and the timely delivery of results/outputs as indicated under Sections 2, 4 and 5 of this TOR;
- 9.3.2. Shall be responsible for the provision of necessary office space, which shall be within close proximity to NEDA, for their project staff as well as the Government's detailed personnel, including the necessary office equipment (i.e., computer, printers, office supplies, etc.) for the conduct of the study. All equipment procured for the development of the project shall be transferred to the Government by the end of the project;
- 9.3.3. Shall shoulder all expenses required in the conduct of the study, including travel costs and lodging of detailed Government personnel during field visits, except for their salaries;
- 9.3.4. Shall: (a) carry out the services with sound engineering theories and practices to ensure that the final works will provide the most economical and feasible development for the study; (b) accept full responsibility for the consulting

services to be performed under this TOR for which the Consulting Firm is liable to NIA; (c) perform the work in an efficient and diligent manner and shall use its best effort to keep reimbursable costs down to the possible minimum without impairing the quality of services rendered; and (d) comply with, and strictly observe any laws regarding workmen's health and safety, workmen's welfare, compensation for injuries, minimum wage, hours of labor and other labor laws;

- 9.3.5.** Shall: (a) keep accurate and systematic records and accounts in respect of the services in such form and detail as is customary and sufficient to establish accurately that the costs and expenditures under this TOR have been duly incurred; and (b) permit the duly authorized representatives of the Government from time to time to inspect its records and accounts as well as to audit the same;
- 9.3.6.** Shall not assign nor sub-contract any part of the professional engineering services under this TOR to any person or firm, except with prior written consent of NIA. The approval by the Government to the assignment of any part of said services or to the engagement by the Consulting Firm of sub-contractors to perform any part of the same shall not relieve the Consulting Firm of any obligations under this TOR;
- 9.3.7.** Shall, during or after the conclusion or termination of the study, limit its role under the project to the provision of the services and hereby disqualifies itself and any other contractor, consulting engineer or manufacturer with which it is associated or affiliated, from the provision of goods and services other than the services herein, except as NIA may otherwise agree;
- 9.3.8.** Shall prohibit full-time foreign staff during his assignment under this TOR to engage, directly or indirectly, either in his name, or through the Consulting Firm, in any business or professional activities in the Philippines other than the performance of his duties or assignment under this TOR;
- 9.3.9.** Shall not at any time communicate to any person or entity any information disclosed to them for the purpose of this services, nor shall the Consulting Firm make public any information as to the recommendations formulated in the course of or as a result of the services, except with prior consent of NIA;
- 9.3.10.** Shall agree that nothing contained herein shall be construed as establishing or creating between the Government and the Consulting Firm, the relationship of employer and employee or principal and agent, it being understood that the position of the Consulting Firm and anyone else performing the services is that of an independent contractor;

- 9.3.11.** Shall hold the Government free from any and all liabilities, suits, actions, demands, or damages arising from death or injuries to persons or properties, or any loss resulting from or caused by said personnel incident to or in connection with the services under this TOR. The Consulting Firm shall agree to indemnify, protect and defend at its own expense the Government and its agents from and against all actions, claims and liabilities arising out of acts done by the Consulting Firm or its staff in the performance of the services, including the use of, or violation of any copyrighted materials, patented invention, article or appliance; and
- 9.3.12.** Shall provide on-the-job capacity building/technology transfer to the Government's personnel detailed to the project.

10. APPROVED BUDGET FOR THE CONTRACT (ABC)

The ABC for the proposed study is **SEVENTY-NINE MILLION SIX HUNDRED SIXTY-SEVEN THOUSAND PESOS ONLY (PhP79.667 Million)**, inclusive of all applicable government taxes and charges, professional fees, and other incidental and administrative costs which shall be paid on a reimbursement basis (e.g., travel expenses, communication expenses, office supplies, office space, and other expenses deemed necessary for the project as certified by the Executing Agency). Attached as **Annex D** is the breakdown of the ABC.

Please note that this consulting contract shall be a *fixed price contract*. Any extension of contract time shall not involve any additional cost to the Government.

All equipment, materials, etc., acquired for the study shall be turned over to NEDA at the conclusion of the study.

11. PAYMENT SCHEME/SCHEDULE

- 11.1.** Billing for *reimbursable items* shall be on a monthly basis based on the *actual expenses incurred* and supported by *official receipts/documents*, including the monthly progress reports.
- 11.2.** Billing for *non-reimbursable items, including professional fees*, shall be in accordance with the following delivery schedule, *upon recommendation and endorsement of LWUA to NEDA*, and subject to the usual Government accounting and auditing requirements:

Upon acceptance of the Final Inception Report	20%
Upon submission of 15 NRW Draft Reports	15%
Upon acceptance of the 15 NRW Final Reports	20%
Upon submission of the 33 Sanitation Draft Reports	20%
Upon acceptance of the 33 Sanitation Final Reports	25%
	100%

- 11.3.** An advance payment shall be made to cover mobilization costs, but shall not exceed TEN PERCENT (10%) of the contract amount, subject to the posting of an irrevocable standby letter of credit issued by an entity acceptable to NEDA and of an equal amount to the advance payment. The advance payment shall be repaid by the Consultant by deducting from his subsequent billings/payments such sum as agreed upon during contract negotiations until fully liquidated within the duration of the contract.
- 11.4.** Since all of these payments shall be subject to the usual government accounting and auditing requirements, the Consulting Firm is expected to be familiar with the Government Accounting and Auditing Manual (GAAM).

12. RETENTION PAYMENT

A retention payment of ten percent (10%) shall be withheld. It shall be based on the total amount due to the Consulting Firm prior to any deduction and shall be retained from every progress payment until fifty percent (50%) of the value of study, as determined by NEDA, are completed. If, after fifty percent (50%) completion, the study is satisfactorily done and on schedule, no additional retention shall be made; otherwise, the ten percent (10%) retention shall be imposed.

The total "retention money" shall be due for release upon approval of the Final Report. The Consulting Firm may, however, request the substitution of the retention money for each progress billing with irrevocable standby letters of credit from a commercial bank, bank guarantees, or surety bonds callable on demand, of amounts equivalent to the retention money substituted for and acceptable to NEDA, provided that the project is on schedule and is satisfactorily undertaken. Otherwise, the ten percent (10%) retention shall be made. Said irrevocable standby letters of credit, bank guarantees and/or surety bonds, to be posted in favor of NEDA shall be valid for the duration of the contract.

13. LIQUIDATED DAMAGES

Where the Consulting Firm refuses or fails to satisfactorily complete the work within the specified contract time, plus any time extension duly granted and is hereby in default under the contract, the Consulting Firm shall pay NEDA for liquidated damages, and not by way of penalty, an amount, as provided in the conditions of contract, equal to at least one tenth (1/10) of one (1) percent of the cost of the unperformed portion of the works for every day of delay. Should the amount of liquidated damages reaches fifteen percent (15%) of the contract amount, NEDA shall at its own discretion terminate the contract without prejudice to any further action it may take to recover whatever losses incurred due to non-performance of the Consulting Firm.

To be entitled to such liquidated damages, NEDA does not have to prove that it has incurred actual damages. Such amount shall be deducted from any money due or which may become due the Consulting Firm under the contract and/or collect such liquidated damages from the retention money or other securities posted by the Consulting Firm whichever is convenient to NEDA.

ANNEX A

**Indicative Implementation Timelines for the Conduct of Concept Designs for Sanitation Projects
and F/S for NRW Reduction and Control Projects**

Activity	Weeks	Months												
		1	2	3	4	5	6	7	8	9	10	11	12	
1 Data gathering	24	█	█	█	█	█	█	█	█	█	█	█	█	█
2 Field work, sampling, etc	22		█	█	█	█	█	█	█	█	█	█	█	█
3 Water use and sewage production projections	8							█	█	█	█			
4 Sewage quality analysis and evaluation	8							█	█	█	█			
5 Hydrologic evaluation	8							█	█	█	█			
6 Sewage treatment plant design	4										█	█		
7 Line pressure mapping	8		█	█	█	█	█	█	█					
8 Leak detection	8		█	█	█	█	█	█	█					
9 Source evaluation	6		█	█	█	█	█	█						
10 Pumps and machinery evaluation	6			█	█	█	█	█	█					
11 Hydraulic analysis	10			█	█	█	█	█	█	█	█			
12 Market surveys	8					█	█	█	█	█	█			
13 Project costing	16				█	█	█	█	█	█	█	█	█	
14 Financial and economic evaluation	24						█	█	█	█	█	█	█	█
15 Contracts and specifications preparation	12									█	█	█	█	█
16 Submission of inception report and work plan	4		█	█	█	█								
17 Submission of monthly reports	16			█		█		█		█		█		█
18 Submission of plans and specification for NRW feasibility studies	4						█	█	█	█				
19 Submission of NRW feasibility studies draft reports	4						█	█	█	█				
20 Submission of NRW feasibility studies final reports	4							█	█	█	█			
21 Submission of plans and specification for sanitation concept designs	4											█	█	█
22 Submission of sanitation projects concept design draft reports	4											█	█	█
23 Submission of sanitation projects concept design final reports	4													█

ANNEX B

Criteria for Shortlisting of Consuting Firms

	Weight	Consulting Firm #1	Consulting Firm #2	Consulting Firm #3	Consulting Firm #4	Consulting Firm #5	Etc. . .
<p>APPLICABLE EXPERIENCE</p> <ul style="list-style-type: none"> Completed consulting services of size, complexity and technical specialty comparable to job under consideration, including quality of performance Other completed consulting services related to the job under consideration Known cases of prior performance, including quality of work conforming to obligations and cost of services 	30%						
<p>QUALIFICATION OF PERSONNEL</p> <ul style="list-style-type: none"> Qualification of key personnel that may be assigned to the job 	50%						
<p>JOB CAPACITY</p> <ul style="list-style-type: none"> Absorptive capacity to do additional works other than those currently being undertaken 	20%						
TOTAL SCORE							
RANK							

ANNEX C**GUIDELINES IN THE PREPARATION OF ELIGIBILITY REQUIREMENTS**

The Eligibility Statement of the Consulting Firm interested to be considered for the services contemplated shall fill up the enclosed form in six (6) copies and shall be submitted to the NEDA Bids and Awards Committee (NBAC).

The numbers below correspond to the numbers contained in the form:

1. Type complete name of firm, year established, country of registry if foreign, and type of organization whether individual, proprietorship, partnership, corporation or others.
2. Name of affiliate firms, their year established, countries of origin, and type of organization.
3. Type exact and complete home office, business address, telephone number and cable address. For consulting firms of foreign registry, indicate if there is any branch office/s established in the Philippines and where established.
4. If present firm is the successor to or outgrowth of one or more predecessor firms, type name/s of former entity/ies and the year/s of their original establishment.
5. Present a brief narrative description of the firm.
6. Indicate clearly and accurately the names of the principals of the Consulting Firm and key personnel. This must be accompanied by the curriculum vitae showing experience, professional affiliations and language capability of the key personnel listed.
7. List not more than two (2) principals who may be contacted by this Office. Listed principals must be empowered to speak for the firm on policy and contractual matters.
8. Indicate the number of employees by discipline. While some personnel may be qualified in several disciplines, each person should be counted only once in accordance with his/her primary functions:
 - a. Under this item, indicate the volume of gross consultancy fees per year for the last five years. Gross fees received may be as Prime Consultant or in association or joint venture with consulting firms.
 - b. Indicate bank references and bank address. It is a must that the latest balance sheet duly signed by an independent Certified Public Accountant or accounting firm be submitted with this form.
 - c. The chart listed under this item represents the ranges of professional Service Fee. The indices should be indicated under item no. 10, last column.

9. Indicate appropriate types of services and fields of specialization the Consulting Firm is technically and financially qualified to undertake.
10. This item represents the ongoing/committed consultancy projects of the Consulting Firm and those handled in the last five years. First column represents the name of the project, the date the project was started and how it was accomplished, i.e., as Prime Consulting Firm or through joint venture or in association with other Consulting Firms. If it was implemented in association with other Consulting Firms, indicate name of Consulting Firm. Second column represents the consulting services rendered, defined as clearly as possible. Third, column represents the Client whom the services were rendered. Indicate the address of the Client. Last column represents the level of fee received by the Consulting Firm as referred to under item 8c — INDEX FEE.
11. List of projects the firm has been engaged in consulting services.

NEW FIRMS (not reorganized or recently amalgamated but only established for less than two (2) years reckoned from the date of preparation of this form) may accomplish this form and questions on the form dealing with personnel or experience may be answered by citing experience and capabilities of the principals and key staff of the firm based on performance and responsibility while in the employ of others. In item 10, representative projects of key personnel and principal offices for the last three (3) years plus consulting services rendered by the New Firm may be indicated.

NOTE: Additional data, brochures, photos, etc. should not accompany this form unless specifically requested.

*Conduct of Feasibility Studies for Non-Revenue Water Reduction and Control Projects
and Concept Designs for the Sanitation Projects*

CONSULTANT'S ELIGIBILITY FORM			DATE				
CONSULTANT	Year Established	Country	Type of Organization				
			Indiv.	Part.	Corp.	Other	
1) NAME							
2) AFFILIATED FIRMS							
3) HOME OFFICE/BUSINESS ADDRESS / TEL. NOS. CABLE ADDRESS							
4) FORMER CONSULTANT'S NAME & YEAR ESTABLISHED FIRM OWNERSHIP							
5) NARRATIVE DESCRIPTION OF FIRM (Use other sheet if necessary)							
6) PARTNERS, DIRECTORS, OFFICERS, KEY PERSONNEL OF FIRM							
NAME AND TITLE		DEGREES(S)		YEARS WITH FIRM		AGE	
(ADD CURRICULUM VITAE SHOWING EXPERIENCE, PROFESSIONAL AFFILIATION AND LANGUAGE CAPABILITY)							
7) NAMES OF NOT MORE THAN TWO (2) PRINCIPALS TO CONTACT TITLE AND TELEPHONE NUMBER							
8) NUMBER OF PERSONNEL IN PRESENT ORGANIZATION							
DISCIPLINE				NUMBER			
PRINCIPAL							
KEY TECHNICAL							
a. Civil Engineers							
b. Structural Engineers							
c. Electrical Engineers							
d. Mechanical Engineers							
e. Architects							
f. Economists							
g. Others (Specify)							
SUPPORT TECHNICAL (Indicate as in above)							
ADMINISTRATIVE STAFF Indicate type, e.g. typist)							
8a) ANNUAL VOLUME OF GROSS FEES (LAST 5 YEARS)				8b) FINANCIAL RATING OR BANK REFERENCE			
8c) RANGES OF PROFESSIONAL FEES INDEX							
1. Less than P100,000							
2. P100,000 to P250,000							
3. P250,000 to P500,000							
4. P500,000 to P1 million							
5. P1 million to P2 million							
6. P2 million to P5 million							
7. P5 million to P10 million							
8. 1110 million or greater							

Conduct of Feasibility Studies for Non-Revenue Water Reduction and Control Projects and Concept Designs for the Sanitation Projects

9) FIELDS OF SPECIALIZATION AND TYPES OF SERVICES			
FIELDS OF SPECIALIZATION	TYPES OF SERVICES ABCDE		
<p>1. Engineering 2. Architecture 3. Finance 4. Management 5. Agriculture 6. Law 7. Others (Please Specify)</p> <p>A - Advisory and Review Services B - Pre-Investment or Feasibility Studies C - Design D — Construction Supervision E - Other Technical Services or Special Studies</p>			
10) PROJECTS HANDLED BY THE CONSULTANT FOR THE LAST FIVE YEARS			
PROJECT NAME/YEAR	SERVICE RENDERED	CLIENT	INDEX FEE
PRIME CONSULTANT/JOINT VENTURE			
11) TYPICAL PROJECTS FOR WHICH CONSULTING SERVICES HAVE BEEN FURNISHED BY THE CONSULTANT (REFERENCE SHEETS MAY BE SUBMITTED FOR AS MANY PROJECTS AS DESIRED)			
<p>NAME OF OVERALL PROJECT _____</p> <p>LOCATION OF OVERALL PROJECT _____</p> <p>CONSULTANT'S LEVEL OF EFFORT _____</p> <p>(CONSULTANT'S FEE)</p> <p>OWNER'S NAME AND ADDRESS _____</p> <p>_____</p> <p>_____</p> <p>YEAR SERVICES COMPLETED _____</p> <p>(INDICATE IF ESTIMATED OR ACTUAL)</p> <p>ASSOCIATED FIRMS _____</p> <p>_____</p> <p>_____</p> <p>DESCRIPTION OF PROJECT _____</p> <p>DESCRIPTION OF SERVICES FIRM PROVIDED _____</p> <p>LIST TYPES OF SERVICES FOR ASSOCIATED ASPECTS OF OVERALL PROJECTS _____</p> <p>_____</p>			

ANNEX D

BREAKDOWN OF THE APPROVED BUDGET OF CONTRACT (ABC)

Conduct of Feasibility Studies for the Non-Revenue Water Reduction and Control Projects and Concept Designs for Sanitation Projects APPROVED BUDGET FOR CONTRACT (ABC) SUMMARY	
PARTICULARS	AMOUNT (PhP)
A. REMUNERATION	67,642,500.00
B. REIMBURSABLE EXPENSES	12,024,600.00
B-1 Field Per Diems	(room costs, subsistence allowance and other similar field expenses)
B-2 Field Travel Expenses	(airplane fare, vehicle rental, airport fees and taxi fare)
B-3 Other Costs	(office equipment and furniture, office running cost such as office supplies, sundries/communication, reproduction of documents, meetings, office space and utilities)
B-4 Sewage Quality Tests	
B-5 Market Surveys	
B-6 Other Sub-Contracted Items	
B-7 Contingencies	
GRAND TOTAL	79,667,100.00