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Contract No: 46.05.0000.223.99.049.24/285

Date: 30.06.2025

CONTRACT AGREEMENT

This CONTRACT AGREEMENT is made on the 30th Jun, 2025 between Elias Uddin Mahmud, Senior Systems Analyst, MIS & Billing Department, Dhaka WASA., 98 Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka 1215, hereinafter referred to as "Dhaka WASA" (here-in-after called "the Purchaser") of the one part and Md. Kamrul Hasan, Chief Executive Officer (CEO), NANO INFORMATION TECHNOLOGY (Nanosoft), Nanosoft Center, Holding No: #8/43, Dag# 7440, Islam Bag, Satarkul, Badda, Dhaka-1212.(here-in-after called "the Supplier") of the other part:

Whereas the Purchaser invited tenders for certain software services "Upgradation of New Water, Sewerage and Private Deep Tubewell Connection Software for Dhaka WASA" and has accepted the quote offered by the Supplier of the software services for the sum of Tk. 28,43,190/- (Twenty-Eight lac Forty-Three thousand One Hundred and Ninety Taka only), here-in-after called "the Contract Price".

NOW, THEREFORE, THIS CONTRACT AGREEMENT WITNESSETH AS FOLLOWS:

- This Contract Agreement will be followed as per rules of PPR-2008
- The above Price quotation includes VAT & TAX as per government rules.
- This Contract Agreement shall remain valid for a period of 36 (Thirty-Six) months from its effective date mentioned in Annexure-1 unless it is extended at mutual understanding of both parties.
- In case of failure to provide the software services within the scheduled time period, penalty will be imposed as per the rules of PPR-2008.
- Scope of Work, Technical Specification, Project Deliverables, Project Duration etc. are mentioned in ToR (Annexure -1), which is to be considered part of this Contract Agreement. Payment Procedure are mentioned in GCC 53.1 (Appendix-B).
- Termination: Any party is entitled to terminate this agreement giving a 30 (Thirty) day's prior written notice to the other at any time during this Contract period with a valid reasoning. Neither party shall be responsible to the other for any costs or damages relating to or resulting from the termination or expiration of this Contract Agreement in accordance with its terms of this Contract Agreement.
- Penalty: Delay of supplying goods/software and installation shall be charged 0.5 percent of the contract price for each week but cannot exceed 10% of the total Contract Price.
- Up to 30% of changes in technical scope mentioned in ToR are allowed without contract amendment. The supplier shall offer full technical support for the Software throughout the contract period, including troubleshooting, updates, and user assistance. Support will be timely, accessible through agreed channels, and included at no extra cost.
- AMC Contract: At the expiry of Maintenance & Support period, mentioned in Annexure-1, the Purchaser may come into an Annual Maintenance Contract (AMC) with the Supplier on a separate Contract Agreement along with Terms & Conditions.
- Future Enhancement: As per Purchaser's necessity, the Supplier may deliver any services in supporting to this software after the Maintenance & Support period, which will be considered as Future Enhancement (out of scope of mentioned services in this Contract Agreement). However, that dealing will be guided by a separate Contract Agreement along with separate Terms & Conditions for additional payment and timeline upon mutually agreed by both parties.



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In witness whereof both parties hereto have caused this Contract Agreement to be executed in accordance with laws of Bangladesh on the day month and year first written above.

Signed on behalf of -

DHAKA WATER SUPPLY AND SEWERAGE AUTHORITY

Elias Uddin Mahmud
Senior Systems Analyst
MIS & Billing Department
Dhaka WASA.

Signed on behalf of -

Nano Information Technology

Md. Kamrul Hasan
Chief Executive Officer (CEO)
Nano Information Technology (Nanosoft)
Nanosoft Center, Holding # 8/43, Dag# 7440, Islam
Bag, Satarkul, Badda, Dhaka.

Witness (1) -

Engr. ARPITA SAHA
System Analyst
MIS & Billing Department,
Dhaka WASA.

Witness (1) -

Md. Mahabob Alam
Manager, Business Development
Nano Information Technology (Nanosoft)
Nanosoft Center, Holding # 8/43, Dag# 7440, Islam
Bag, Satarkul, Badda, Dhaka.

Witness (2) -

MD. SHAHIDUL ISLAM
Programmer
MIS & Billing Department
Dhaka WASA.

Witness (2) -

Rumel Ahmmed
Senior Support Engineer
Nano Information Technology (Nanosoft)
Nanosoft Center, Holding # 8/43, Dag# 7440, Islam Bag,
Satarkul, Badda, Dhaka.

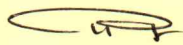
Appendix A: General Conditions of Contract (GCC)

ITC Clause	Amendments to, and Supplements to, Clauses in the Instruction to Software Firms.
1.1	The Client is: Senior System Analyst, MIS & Billing Department, Dhaka Water Supply & Sewerage Authority (DWASA).
1.3	The assignment is phased as follows: Stage 1: Requirement Analysis & Prototype Development (1 month) - Conduct a detailed requirement analysis. - Prepare Software Requirement Specification (SRS) and Software Design Document (SDD). - Develop a prototype for initial validation. Stage 2: Software Upgradation (3 months) - Enhance and upgrade the software based on the finalized requirements. - Begin this phase after presenting the prototype to the MIS & Billing Department and other stakeholders. - Incorporate feedback and necessary improvements. Stage 3: Testing, User Acceptance Test (UAT) & Deployment (1 month) - Perform rigorous software testing to ensure functionality, performance, and security. - Conduct UAT with end users and gather feedback. - Deploy the software on the live server. - Implement modifications based on UAT results. Stage 4: Handover & Training (1 month) - Provide comprehensive training sessions for end users and technical staff. - Officially hand over the software for operational use. Stage 5: Observation and Debugging Period (6 months) - Offer bug fixes, performance monitoring, and necessary support at no cost. - Address any issues that arise during real-world usage. Stage 6: Maintenance & Support (24 months) - Provide long-term technical assistance, updates, and improvements. - Begin this phase after the Observation and Debugging Period ends. The assignment is to be completed within 1095 (One Thousand and Ninety-Five) Days/ 36 (Thirty-Six) months from the date of the commencement.
3.1	The source of the Public Fund is: Fund of Dhaka WASA
3.3	The development partner is: None
7.1	Materials, equipment and supplies used by the Software Firm are not permitted if they have originated in the countries having no diplomatic relation with Bangladesh.
15.1	For clarification of proposals the Client's address is: Attention: Senior System Analyst, MIS & Billing Dept. Dhaka Water Supply & Sewerage Authority (DWASA). Address: Office of the Senior System Analyst, MIS & Billing Department, Level 7, WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215. E-mail address: eliasdhk@yahoo.com
16.1	The Proposal shall be written in the English language.
17.1(d)	Other documents required to be submitted with the Proposal are: N/A

19.11	The total estimated number of professional staff-months required for the assignment is as follows:																																																										
<table><tr><th>SI No.</th><th>Job Title</th><th>Qty</th><th>Months</th><th>Total Man Months</th></tr><tr><td>1.</td><td>Project Manager/Team Leader</td><td>01</td><td>4</td><td>4</td></tr><tr><td>2.</td><td>System Administrator</td><td>01</td><td>1</td><td>1</td></tr><tr><td>3.</td><td>Database Administrator/Expert</td><td>01</td><td>2</td><td>2</td></tr><tr><td>4.</td><td>Sr. Software Engineer/ Sr. Programmer</td><td>01</td><td>3</td><td>3</td></tr><tr><td>5.</td><td>Software Engineer</td><td>03</td><td>4</td><td>12</td></tr><tr><td>6.</td><td>UI/UX Designer</td><td>02</td><td>2</td><td>4</td></tr><tr><td>7.</td><td>QA Expert (Test Engineer)</td><td>01</td><td>1</td><td>1</td></tr><tr><td>8.</td><td>Support Engineer (Development Phase)</td><td>02</td><td>6</td><td>12</td></tr><tr><td>9.</td><td>Support Engineer (Extended Maintenance & Support)</td><td>01</td><td>24</td><td>24</td></tr><tr><td colspan="2">Total</td><td>13</td><td></td><td>63</td></tr></table>					SI No.	Job Title	Qty	Months	Total Man Months	1.	Project Manager/Team Leader	01	4	4	2.	System Administrator	01	1	1	3.	Database Administrator/Expert	01	2	2	4.	Sr. Software Engineer/ Sr. Programmer	01	3	3	5.	Software Engineer	03	4	12	6.	UI/UX Designer	02	2	4	7.	QA Expert (Test Engineer)	01	1	1	8.	Support Engineer (Development Phase)	02	6	12	9.	Support Engineer (Extended Maintenance & Support)	01	24	24	Total		13		63
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<table><tr><th>SI No</th><th>Job Title</th><th>Qualification, Experience and Responsibilities</th></tr><tr><td>1.</td><td>Project Manager/ Team Leader</td><td> Must have a minimum of 10 years of experience in Software and Service Development. He/she must have a relevant bachelor's degree from a recognized university, preferably in computer science and engineering or IT related subjects. Experience in developing software for Government Autonomous/Semi-Autonomous Organizations is preferable. Project manager will take the overall responsibility for the execution of the assignments in accordance with the TOR and for the coordination of all professional inputs. He/she will be responsible to the employer and maintain close contact with the procuring entity to ensure that the contract is implemented in accordance with the given TOR. The team leader will act as the consultant's authorized representative for both design and implementation supervision phase and make decisions on all matters pertaining to the consulting services. </td></tr><tr><td>2.</td><td>System Administrator</td><td> Must have a minimum of 8 years of experience in Software and Service Development. He/she must have a relevant bachelor's degree from a recognized university, preferably in computer science and engineering or IT related subjects. Must have experience of working in the public sector. Experience in setting up software environments and deploying Application System for various organizations is preferable. The ideal candidate should be proficient with Linux and Windows platforms, experienced in managing various operating systems and virtualization tools like VMware, and skilled in shell scripting for automating maintenance tasks. They must have expertise in system security, including disaster recovery and backup techniques. Responsibilities include installing and maintaining server hardware, managing network servers, configuring software and hardware, monitoring system performance, troubleshooting issues, and ensuring security through access controls and firewalls. Additionally, they should build and maintain an internal wiki with technical documentation and IT policies. Certifications such as RHCSA, RHCE, Linux, and VMware are required. </td></tr><tr><td>3.</td><td>Database Administrator/ Expert</td><td> At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 5 years of Professional experience in relevant field. The candidate should manage and monitor Oracle Database 12C/19C instances, focusing on network connections, security, and privileges. They are responsible for </td></tr></table>					SI No	Job Title	Qualification, Experience and Responsibilities	1.	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		managing database concurrency, implementing auditing, and using the Data Recovery Advisor for diagnosing and repairing failures. Proficiency in performing encrypted database backups and restores, and working with Oracle Data Guard is essential. They should be skilled in using Recovery Manager (RMAN) for backup and recovery operations, and in planning effective backup and recovery procedures. Additionally, the candidate should prepare ADDM reports for performance monitoring and plan effective data migration processes.
4.	Sr. Software Engineer/ Sr. Programmer	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 5 years of Professional experience in relevant field. The job involves developing and maintaining software application components, guiding subordinates in development and implementation. Responsibilities include participating in all software development lifecycle stages, translating business requirements into foundational platform components, and guiding software engineers, programmers, analysts, and support specialists. The role requires architecting scalable and responsive platforms, documenting architectural standards and best practices, and mentoring teams on developing resilient applications. Collaboration with deployment and infrastructure teams for software and platform provisioning is essential. Identifying and implementing opportunities for change and introducing new concepts, procedures, policies, and tools is also part of the role. At least 5 years of practical software development experience, including 3 years with Java Spring boot frameworks. Proficiency in software debugging and customization is necessary, along with strong problem-solving skills and the ability to work independently or in a team.
5.	Software Engineer	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 3 years of Professional experience in relevant field. The Software Engineer would be responsible for the creation, maintenance and management of software components and their lower-level sub-components. The incumbent is also required to interpret, use and apply information contained within IT architecture to inform a range of improvement activities, particularly those involved in the design, development, enhancement and maintenance of various citizen services, e-services and govt application systems. The incumbent is expected to ensure that appropriate considerations are made for its security and quality.
6.	UI/UX Designer	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 2 years of Professional experience in relevant field. At least 1 year experience in React/VueJs Front End Development. UI/UX designers are responsible for creating visually appealing and user-friendly interfaces by combining visual design and user research. They develop prototypes, wireframes, and high-fidelity mockups to guide the design and functionality of digital products. Collaboration with developers and stakeholders ensures designs align with business goals and technical constraints. They conduct usability testing and iterate designs based on user feedback to enhance the user experience. Staying up-to-date with the latest design trends and tools is essential for continuous improvement and innovation.
7.	QA Expert (Test Engineer)	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 2 years of Professional experience in relevant field. QA experts, or test engineers, are responsible for ensuring software quality by designing and executing test plans and cases. They identify, document, and track bugs and performance issues, collaborating with developers to resolve them. Conducting various types of testing, such as functional, regression, and performance testing, ensures comprehensive coverage. They automate tests where possible to improve efficiency and consistency. Staying up-to-date with the latest testing tools and methodologies is crucial for maintaining high standards of software quality.
8.	Support Engineer	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 2 years of Professional experience in software development. Support engineers are responsible for providing technical assistance to customers, resolving issues related to products or services. They diagnose and troubleshoot

		problems, guiding users through step-by-step solutions. Collaborating with development teams, they help identify and fix bugs and improve overall product quality. They document common issues and solutions, contributing to knowledge bases and support documentation. Staying updated with product changes and technological advancements is essential for providing accurate and effective support.																																												
**Attach resumes with the relevant information for all employees.																																														
20.1(i)	Training is a specific component of this assignment. The details of training required are: <table border="1"> <thead> <tr> <th>SL NO.</th> <th>Training Type</th> <th>Training Days</th> <th>No of Persons (Per Day)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Prototype (New Connection)</td> <td>1</td> <td>20</td> </tr> <tr> <td>2</td> <td>Prototype (Deep Tube Well)</td> <td>1</td> <td>20</td> </tr> <tr> <td>3</td> <td>UAT (New Connection)</td> <td>1</td> <td>20</td> </tr> <tr> <td>4</td> <td>UAT (Deep Tube Well)</td> <td>1</td> <td>20</td> </tr> <tr> <td>5</td> <td>Data Migration & Server Deployment</td> <td>4</td> <td>14</td> </tr> <tr> <td>6</td> <td>Front-End Source Code Handover</td> <td>2</td> <td>10</td> </tr> <tr> <td>7</td> <td>Backend Source Code Handover</td> <td>4</td> <td>10</td> </tr> <tr> <td>8</td> <td>Database Architecture Handover</td> <td>3</td> <td>10</td> </tr> <tr> <td>9</td> <td>Security Training</td> <td>3</td> <td>10</td> </tr> <tr> <td colspan="2">Total</td> <td>20</td> <td>134</td> </tr> </tbody> </table> * Training Honorarium and Refreshments will be provided as per Government rule by the software firm. Details of the Government Rules). * Training kits (Bag, Pen, Pencil, Training Manual etc.) not more than BDT 1200/- (Twelve Hundred Only) must be provided by the software firm per training per person.		SL NO.	Training Type	Training Days	No of Persons (Per Day)	1	Prototype (New Connection)	1	20	2	Prototype (Deep Tube Well)	1	20	3	UAT (New Connection)	1	20	4	UAT (Deep Tube Well)	1	20	5	Data Migration & Server Deployment	4	14	6	Front-End Source Code Handover	2	10	7	Backend Source Code Handover	4	10	8	Database Architecture Handover	3	10	9	Security Training	3	10	Total		20	134
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20.1(j)	Additional information on the Technical Proposal includes: • Backend Technology must be java spring boot related. • Latest Frontend Technology (React/Vue JS) should be used. • Database must be oracle 19C. • It is preferable to generate reports using Jasper Reports. • Information about the project management tools which will be used during the development phase. • Information about the version control system which will be used during the development phase. • Any modifications to existing system must be performed as per instructions of MIS & Billing Dept. inside DWASA premises.																																													
21.3(d)	The Reimbursable expenses shall be the following: (1). cost of locally procured items, office accommodations, camp facilities, camp services, equipment rentals, utilities and communication charges, all if and to the extent required for the purpose of the Services. (2). cost of necessary travel, including transportation of the Personnel by the most appropriate means of transport and the most direct practicable route. (3). cost of communications such as the use of telephone and facsimile required for the purpose of the Services. (4). cost, rental and freight of any instruments or equipment required to be provided by the Software Firm for the purposes of the Services. (5). cost of printing and dispatching of the Reports to be produced for the Services. (6). Training cost, foods and materials cost as well as the training fee must be provided by the firm as per government rules. (7). Cost of any subcontract required for the Services in the TOR.																																													



	(8). other allowances where applicable and provisional or fixed sums (if any); and (9). cost of such further items required for purposes of the Services not covered in the foregoing.	
23.1	The Client will provide the following inputs and facilities: The client will provide the following services and facilities when the project is ready to live. i) Domain, Hosting, Networking infrastructure ii) Server iii) Training room.	
26.1	Proposals must remain valid for 120 days after the last submission date	
28.2	The software firm must submit one original copy for both the Technical Proposal and the Financial Proposal and 02 (two) copies (01 hard & 01 soft) of the Technical Proposal. All copies must be indexed properly with page numbers.	
29.3(b)	The Proposal submission address is: Office of the Senior System Analyst, MIS & Billing Department, Level 7, WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215.	
30.1	Proposals must be submitted no later than the: Date: 09/03/2025 Time: 12:30:00 PM BST	
37.2	Criteria, sub-criteria, and points system for the evaluation of Technical Proposals are:	
	<u>Criteria, sub-criteria</u>	<u>Points</u>
	(i) Specific experience of the Software Firm relevant to the assignment: a) Experience in Utility Connection Related Software Development: 6 points b) Experience of similar type of tools & technology: 4 points ** Please provide proven documents of experience. Screenshots of Similar projects, Live URL etc.	10
	(ii) Adequacy of the proposed methodology and work plan in responding to the Terms of Reference	
	(a) Technical approach and methodology	30
	(b) Work plan	8
	(c) Organization and staffing	4
	Total points for criterion (ii):	42
	(iii) Professional staff qualifications and competence for the assignment	
	a) Project Manager/Team Leader	1x8=8
	b) System Administrator	1x5=5
	c) Database Administrator/Expert	1x5=5
	d) Sr. Software Engineer/ Sr. Programmer	1x3=3
	e) Software Engineer	3x3=9
	f) UI/UX Designer	2x2=4

	g) QA Expert (Test Engineer)	1x2=2
	h) Support Engineer	2x2=4
	Total points for criterion (iii):	40
	The number of points to be assigned to each of the above position or discipline shall be determined considering the following three sub criteria and relevant percentage weights:	
	General Qualifications	30%
	Adequacy for the assignment	60%
	Experience in region and language	10%
	Total Weight:	100%
	(iv) Suitability of the transfer of knowledge	
	[a] Relevance of Training Program i) Technical Training: 3 points ii) User Level Training: 2 Points	5
	[b] Detailed Training Approach and Methodology	3
	Total points for criterion (iv):	8
	TOTAL POINTS	100
	The minimum Technical Score required to pass is: 75 Points.	
39.7	The formula for determining the financial scores is the following: $F_p = 100 \times F_m / F$, in which F_p is the financial score, F_m is the lowest price and F the price of the proposal under consideration.	
40.1	The weights given to the Technical and Financial Proposals are: T = 0.8, and [Technical] P = 0.2 [Financial]	
41.1	The address for contract negotiations is: Office of the Senior System Analyst, MIS & Billing Department, Level 7, WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215.	
48.1	The amount of Performance Security shall be 5% (Five Percent) of the Contract Price.	
53.1	The assignment is expected to commence on 14/05/2025 at Office of the Senior System Analyst, MIS & Billing Department, Level 7, WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215.	
54.4	The name and address of the office where complaints to the Procuring Entity under Regulation 51 are to be submitted is: Name: Senior System Analyst, MIS & Billing Department, Dhaka Water Supply & Sewerage Authority (DWASA). Address: Office of the Senior System Analyst, MIS & Billing Department, Level 7, Dhaka Water Supply & Sewerage Authority (DWASA).	

Appendix B: Particular Conditions of Contract (PCC)	
GCC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	RFP IDENTIFICATION NO: 46.05.0000.223.99.049.24/73-1
1.1 (c) 1.1 (f) 1.1 (k) 1.1 (n)	The Client is: Senior System Analyst, MIS & Billing Department, Dhaka Water Supply & Sewerage Authority (DWASA). The Firm is: Nano Information Technology (Nanosoft) Contract effective date is: 30/06/2025 The Intended Completion Date is: 30/06/2028
GCC 2.1	The assignment is phased as follows: Stage 1: Requirement Analysis & Prototype Development (1 month) - Conduct a detailed requirement analysis. - Prepare Software Requirement Specification (SRS) and Software Design Document (SDD). - Develop a prototype for initial validation. Stage 2: Software Upgradation (3 months) - Enhance and upgrade the software based on the finalized requirements. - Begin this phase after presenting the prototype to the MIS & Billing Department and other stakeholders. - Incorporate feedback and necessary improvements. Stage 3: Testing, User Acceptance Test (UAT) & Deployment (1 month) - Perform rigorous software testing to ensure functionality, performance, and security. - Conduct UAT with end users and gather feedback. - Deploy the software on the live server. - Implement modifications based on UAT results. Stage 4: Handover & Training (1 month) - Provide comprehensive training sessions for end users and technical staff. - Officially hand over the software for operational use. Stage 5: Observation and Debugging Period (6 months) - Offer bug fixes, performance monitoring, and necessary support at no cost. - Address any issues that arise during real-world usage. Stage 6: Maintenance & Support (24 months) - Provide long-term technical assistance, updates, and improvements. - Begin this phase after the Observation and Debugging Period ends. The assignment is to be completed within 1095 (One Thousand and Ninety-Five) Days/ 36 (Thirty-Six) months from the date of the commencement.
GCC 3.1	The addresses for Communications and Notices are: Client : Dhaka WASA Contact Person: MD. Elias Uddin Mahmud Senior System Analyst, MIS & Billing Department, DWASA. Address: Office of the Senior System Analyst, MIS & Billing Department, Level 7, WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215. e-mail address: eliasdhk@yahoo.com Software Firm : Nano Information Technology (Nanosoft) Contact Person: Md. Kamrul Hasan Address: Nanosoft Center, Holding # 8/43, Dag# 7440, Islam Bag, Satarkul, Badda, Dhaka-1212. Tel: +8801841117009 e-mail address: kamrul.hasan@nanoit.biz
GCC 6.1(e)	The following additional documents shall form the part of the Contract: RFP(PCC & GCC), Negotiation Meeting Minutes, Contract Documents, ToR.



GCC 8.1	Non eligible countries are: having no diplomatic relation with Bangladesh.
GCC 11.1	The Member in Charge is: MD. Elias Uddin Mahmud Senior System Analyst, MIS & Billing Department, DWASA. Address: Office of the Senior System Analyst, MIS & Billing Department, Level 7, WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215.
GCC 12.1	The Authorized Representatives are: For the Client : MD. Elias Uddin Mahmud Senior System Analyst, MIS & Billing Department, DWASA. Address: Office of the Senior System Analyst, MIS & Billing Department, Level 7, WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215. e-mail address: eliasdhk@yahoo.com For the Software Firm : Md. Kamrul Hasan Chief Executive Officer (CEO) Nano Information Technology (Nanosoft) Address: Nanosoft Center, Holding # 8/43, Dag# 7440, Islam Bag, Satarkul, Badda, Dhaka-1212. Tel: + 01841117009 e-mail address: kamrul.hasan@nanoit.biz
GCC 20.1	The Software Firm shall commence carrying out the Services within 07 (seven) days of the Effective Date of the Contract.
GCC 21.1	The contract shall expire 1095 (One Thousand and Ninety-Five) Days from the Effective Date of the Contract as mentioned in GCC Clause 18.1 above.
GCC 34.4(a)	The Software Firm is notified of such actions, claims, losses or damages not later than 04 (Four) months after conclusion of the Services.
GCC 34.4(b)	The ceiling on firms' liability shall be limited to 50%
GCC 35.1(a)	The risks and the coverage shall be as follows: Third Party motor vehicle liability insurance in respect of motor vehicles operated in Bangladesh by the Software Firm or its Personnel or any Sub-Software Firms or their Personnel, with a minimum coverage of: N/A Third Party liability insurance, with a minimum coverage of: N/A (a) Professional Liability insurance, with a minimum coverage of: N/A (b) Employer's Liability and Workers' Compensation insurance in respect of the Personnel of the Software Firm and of any Sub-Software Firm, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel, or other insurance as may be appropriate; and (c) Insurance against loss of or damage to (i) equipment and materials purchased in whole or in part with funds provided under this Contract, (ii) the Software Firm's property used in the performance of the Services, and (iii) any documents prepared by the Software Firm in the performance of the Services.




GCC 37.1(c)	The other actions that shall require Client's approval are: a) Technology will be used in the projects. b) Before deployment any changes in the live system. C) Business/Process implementation.
GCC 39.3	The other restrictions about future use of documents and software are. "The Firm shall not use these documents and software for purposes unrelated to this Contract without the prior written approval from the Client".
GCC 41.1(c)	Assistance for carrying out the Services to be provided by the Client are. The Client will provide assistance from the date of request received for each of the tasks from the firm, as applicable: a) Necessary data for system development and operation within 30 days. b) IT environment (such as server, database licenses, connectivity with internal or external systems, cloud storage which are applicable) for User Acceptance Test (UAT) within 30 days. c) Feedback / acceptance from the Client's necessary team on requirement specification / reports / UAT within 10 DAYS. d) Co-ordination for establishing connectivity with external / internal systems so that firm can deliver the software / services as planned. E) Co-ordination for establishing disaster recovery, Data privacy, System scalability etc.
GCC 47.2	The Contract ceiling amount is Tk. 28,69,440/- (Twenty-Eight lac Sixty-Nine thousand Four Hundred and Forty Taka only) including VAT-Tax.
GCC 48.1	The Bank Account is: Title of the Account: Nano Information Technology. Name of the Bank: Islami Bank Bangladesh PLC Name of the Branch: Cantonment Branch, Dhaka Routing number: 125260738 Branch Code: IBBLBDDH Account Number: 20502030100295412 (Current) Address: MQ Plaza, 28/1, Uttar Kafrul, Dhaka Cantonment, Dhaka - 1206. Tel: 02-222270677, 8712098 Fax: (02) 8712098 e-mail address: cantonment@islamibankbd.com
GCC 50.1	The Contract Price is Tk. 28,43,190/- (Twenty-Eight lac Forty-Three thousand One Hundred and Ninety Taka only) including VAT-Tax.
GCC 52.1	Advance Payment: No advance payment is applicable for this project. Bank Guarantee shall remain effective until: N/A
GCC 53.1	Payments shall be made in line with agreed-on outputs according to the following schedule: 1st interim Report: Ten (10%) percent of contract prices shall be paid upon: Submission and acceptance of the Requirement Analysis Providing SRS, SDD with Prototype Demonstration This payment can be made at the end of the first month from the date of commencement.

2nd interim report: Fifty (50%) percentage of the contract price shall be paid upon:

- Successful completion of software upgradation,
- Software Testing
- User Acceptance Test (UAT) with duly accepted report.
- Deployment in Live Server after Post UAT Modifications
- Handover and Training with all the requirements raised within 06 (Six) months from the commencement.

This payment can be claimed at the end of the fifth month from the date of commencement.

3rd interim report: 3rd Interim Report Payment (25%)

- 25% of the contract price will be paid after completing the Observation and Debugging period.
- This covers all the requirements raised within the first 12 months of the project.

The payment can be made at the end of the 12th month from the project start date.

Project Completion Report: Final payment (15%)

Fifteen Percent (15%) of the contract amount will be paid after successful completion of all the requirements that raised till 36th (Thirty-Six) month and providing necessary support and maintenance service of the software Twelfth month from commencement and upon submission and acceptance of project completion report duly accepted by MIS and Billing Department of Dhaka WASA.

**** Before Every payment (Except First Payment) following up-to-date documents shall be submitted:**

1. Software Requirements Specifications (SRS):

- Entity Relationship Diagram
- Data Flow Diagram
- Use Case Diagram
- Class Diagram
- Application Architecture
- Software Design Documentation
- User Management Architecture
- Operation Manual
- Data Migration Process
- Data Achieving Process
- Complete Source Code and Live Database
- Password Management Architecture
- Log Management Architecture
- API Documentation
- Session Mechanism
- Reporting Architecture
- Message Service Architecture
- Role Management Architecture
- Security Mechanism
- Database Related Objects Architecture
- Tools and Technologies with version used in the project.
- Networking Dependencies (if any)
- Source code file organization.
- Any other technical documents relevant to the projects.

2. System Administration Manual:

- Server Environment Setup
- Docker Documentation (if any)
- Deployment Process
- Software Operation Manual
- Infrastructure and storage related documentation
- Backup and Recovery Policies

	2. User manual • Admin User Manual • End user manual 3. Training Manual ** Before every payment (except first payment) the latest source code aligned with the live system shall be submitted. ** Need all time read and download access for the updated production code in the Version control system (git, github, bitbucket, gitlab etc) during the software upgradation phase. **Project Management and issues tracking Tools Like Jira/Bugzilla etc. need to be used in the Project and provide access to a concerned Person from MIS and Billing Department for reporting bugs and other issues. ** The Performance Security shall be released after the following phases: Stage 1: Requirement Analysis & Prototype Development (1 month) • Conduct a detailed requirement analysis. • Prepare Software Requirement Specification (SRS) and Software Design Document (SDD). • Develop a prototype for initial validation. Stage 2: Software Upgradation (3 months) • Enhance and upgrade the software based on the finalized requirements. • Begin this phase after presenting the prototype to the MIS & Billing Department and other stakeholders. • Incorporate feedback and necessary improvements. Stage 3: Testing, User Acceptance Test (UAT) & Deployment (1 month) • Perform rigorous software testing to ensure functionality, performance, and security. • Conduct UAT with end users and gather feedback. • Deploy the software on the live server. • Implement modifications based on UAT results. Stage 4: Handover & Training (1 month) • Provide comprehensive training sessions for end users and technical staff. • Officially hand over the software for operational use. Stage 5: Observation and Debugging Period (6 months) • Offer bug fixes, performance monitoring, and necessary support at no cost. • Address any issues that arise during real-world usage. Stage 6: Maintenance & Support (24 months) • Provide long-term technical assistance, updates, and improvements. • Begin this phase after the Observation and Debugging Period ends. The assignment is to be completed within 1095 (One Thousand and Ninety-Five) Days/ 36 (Thirty-Six) months from the date of the commencement. ** Penalty: Delay of Software development, installation, deployment shall be charged 0.5 percent of the contract price for each week but can't exceed 10% of the total contract price. ** All the Modifications to existing systems must be carried out on DWASA premises. The source code of the existing system will not be handed over to the software firm. ** After the expiry of contract period, the firm shall compulsorily offer AMC for a minimum of one year 10% per annum of contract value after expiry of Maintenance and Support period. However, DWASA may or may not award the AMC at its own sole discretion.
GCC 53.3	The Firm shall not be entitled to receive financing charges for delayed payment during the period of delay.
GCC 75.2 (b)	The place of Arbitration is Dhaka Water Supply & Sewerage Authority (DWASA).

Appendix C: Negotiation Meeting Minutes

Dhaka Water Supply and Sewerage Authority

WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215

Negotiation Meeting Minutes

Name of the package : Selection of a Software Firm for the Upgradation of New Water, Sewerage and Private Deep Tubewell Connection Software for Dhaka WASA
Date and Time : 02-06-2025 10:30 AM
Negotiation with firm : Nano Information Technology (Nano Soft)
Place : Meeting Room, MIS & Billing Department, Dhaka WASA.

Attendance:

1. Mohammad Zaved Anwar Chowdhury, Senior System Analyst, GIS Department, Dhaka WASA, Chairperson, PEC-2.
2. Engr. Arpita Saha, System Analyst, MIS & Billing Department Dhaka WASA, Member, PEC-2.
3. Mohammad Sohel Khan, Dy. Chief Accounts Officer, Accounts Department, Dhaka WASA, Member, PEC-2.
4. Md. Sakib Muhatdee, Assistant Programmer, MIS & Billing Department, Dhaka WASA, Member, PEC-2.
5. Md. Shahidul Islam, Programmer, MIS & Billing Department, Dhaka WASA, Member- Secretary, PEC-2.
6. Md. Ruhul Amin, Manager (Operations), Nano Information Technology (Nano Soft).
7. Md. Mahabob Alam, Manager (Business Development), Nano Information Technology (Nano Soft).

Introduction:

The negotiation meeting was held at the Meeting Room, MIS & Billing Department, Dhaka WASA. Mohammad Zaved Anwar Chowdhury, Senior System Analyst, GIS Department, Dhaka WASA, Chairperson, PEC-2, presides over the meeting. In the initial proceedings, the chairperson expressed gratitude to all attendees for their presence. Subsequently, the Chairperson of the PEC-2 invited the Member-Secretary of PEC-2 (Md. Shahidul Islam, Programmer, MIS & Billing Department, Dhaka WASA) to present the details of the discussions and initiate the activities

Activities:

1. Tools & Technologies and other terms & conditions will be followed as described in the ToR and RFP.
2. During the execution of the project, authorized contact persons shall be nominated for communication by both Dhaka WASA and the firm.
3. In the financial proposal of the firm of form 5B4 Breakdown of Reimbursable Expenses, the firm has agreed to exclude the full cost of:
1) Per Diem amounting BDT 10,000/- (Ten Thousand Only) BDT

Dhaka Water Supply and Sewerage Authority

WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215

- 4) Drafting, reproduction of Reports amounting BDT 10,000/- (Ten Thousand Only) BDT and
- 6) Equipment, instruction of reports amounting BDT 5,000/- (Five Thousand Only) BDT.
- Total Cost Exemption in BDT 25,000/- (Twenty-Five Thousand only) BDT.
4. In the financial proposal of the firm on form 5B2 Summary of Cost, they included five (5) % VAT on the total cost with tax. According to government regulations, the applicable VAT rate for Information Technology Enabled services is officially set at 5%. The firm has graciously acknowledged this requirement and is committed to adhering strictly to the government's VAT rules and regulations.
5. In the financial proposal of the firm on form 5B2 Summary of Cost, the firm has indicated a 0% tax inclusion in the total cost. In response to queries from members of PEC seeking clarification on this zero-tax rate, the firm's representative conveyed during the meeting that they possess a tax-exemption certificate, which substantiates their exemption from tax obligations.
6. The key professional staff of the firm are required to be present before the contract signing.
7. The total cost after negotiation is provided below:

Evaluated Price	Negotiated Price	Amount Less from Evaluated Price & %	0% Tax of Negotiated price	Total Price with Tax	5% VAT of Total price	Contract Amount
A	B=A-C	C	D	E=B+D	F=5% of E	G=E+F
27,32,800	27,07,800	25,000 0.915%	0 (zero)	27,07,800	1,35,390	28,43,190

Contract Amount: 28,43,190 (Twenty-Eight Lakh Forty-Three Thousand One Hundred and Ninety) BDT only.

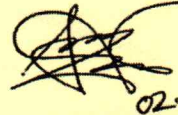
Dhaka Water Supply and Sewerage Authority

WASA Bhaban, 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215

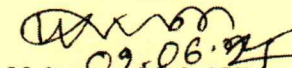
All PEC-2 members and authorized representatives of the firm present at the meeting have reached a consensus on all the negotiated topics and the contract amount. They have agreed to sign the contract for this project with a contract price of 28,43,190 (Twenty-Eight Lakh Forty-Three Thousand One Hundred and Ninety Only) BDT.

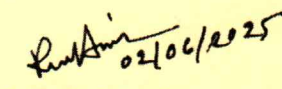
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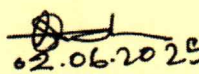
Mohammad Zaved Anwar Chowdhury
Senior System Analyst
GIS Department
Dhaka WASA &
Chairperson of PEC-2

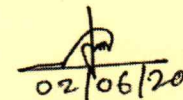
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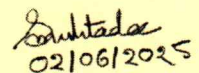
Md. Shahidul Islam
Programmer
MIS & Billing Department
Dhaka WASA &
Member-Secretary of PEC-2

 02.06.25
Mohammad Sohel Khan
Deputy Chief Accounts Officer
Accounts Department
Dhaka WASA &
Member of PEC-2

 02/06/2025
Md. Ruhul Amin
Manager (Operations),
Nano Information Technology
(Nano Soft).

 02.06.2025
Engr. Arpita Saha,
System Analyst,
MIS & Billing Department,
Dhaka WASA,
Member, PEC-2.

 02/06/2025
Md. Mahabob Alam
Manager (Business Development),
Nano Information Technology
(Nano Soft).

 02/06/2025.
Md. Sakib Muhtadee
Assistant Programmer
MIS & Billing Department
Dhaka WASA &
Member of PEC-2

Annexure 1
Terms of Reference (TOR)
for
Upgradation of New Water, Sewerage and Private Deep Tubewell
Connection Software for Dhaka WASA

1. Background

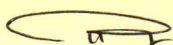
Water is a fundamental human necessity, and throughout history, human civilizations have thrived alongside rivers. Dhaka, the capital of Bangladesh, is home to around 22 million inhabitants, covering an area of approximately 307 square kilometers. The task of supplying water to such a vast population is immensely challenging. With this objective in mind, the Dhaka Water Supply & Sewerage Authority (DWASA) was established in 1963 as an independent organization tasked with providing water supply and sewage disposal services to the residents of Dhaka. Residents of Dhaka benefit from one of the lowest water tariffs globally, which constrains the utility's ability to invest in infrastructure. DWASA produces approximately 2750 million liters per day (MLD) of potable water from deep tube wells and surface water treatment plants, serving 22 million people in Dhaka. Currently, there are approximately 3,92,000 consumers, of which about 3,67,000 have metered connections, while the remainder have non-metered ones. Consumers are categorized into five groups: Domestic, Commercial, Industrial, Government, and Community. Each year, around 6,500 new service connections are being established.

2. Scope Of Works

For all the key activities and deliverables, the vendor must consult with the MIS & Billing Department of Dhaka WASA. For **Upgradation of New Water, Sewerage and Private Deep Tubewell Connection Software of Dhaka WASA**, it requires a modular approach of software development, in succession, where each module will follow a cycle of requirement assessment, designing and development, testing, integration, deployment and final roll out with training. The scope of work will include but not be limited to the following:

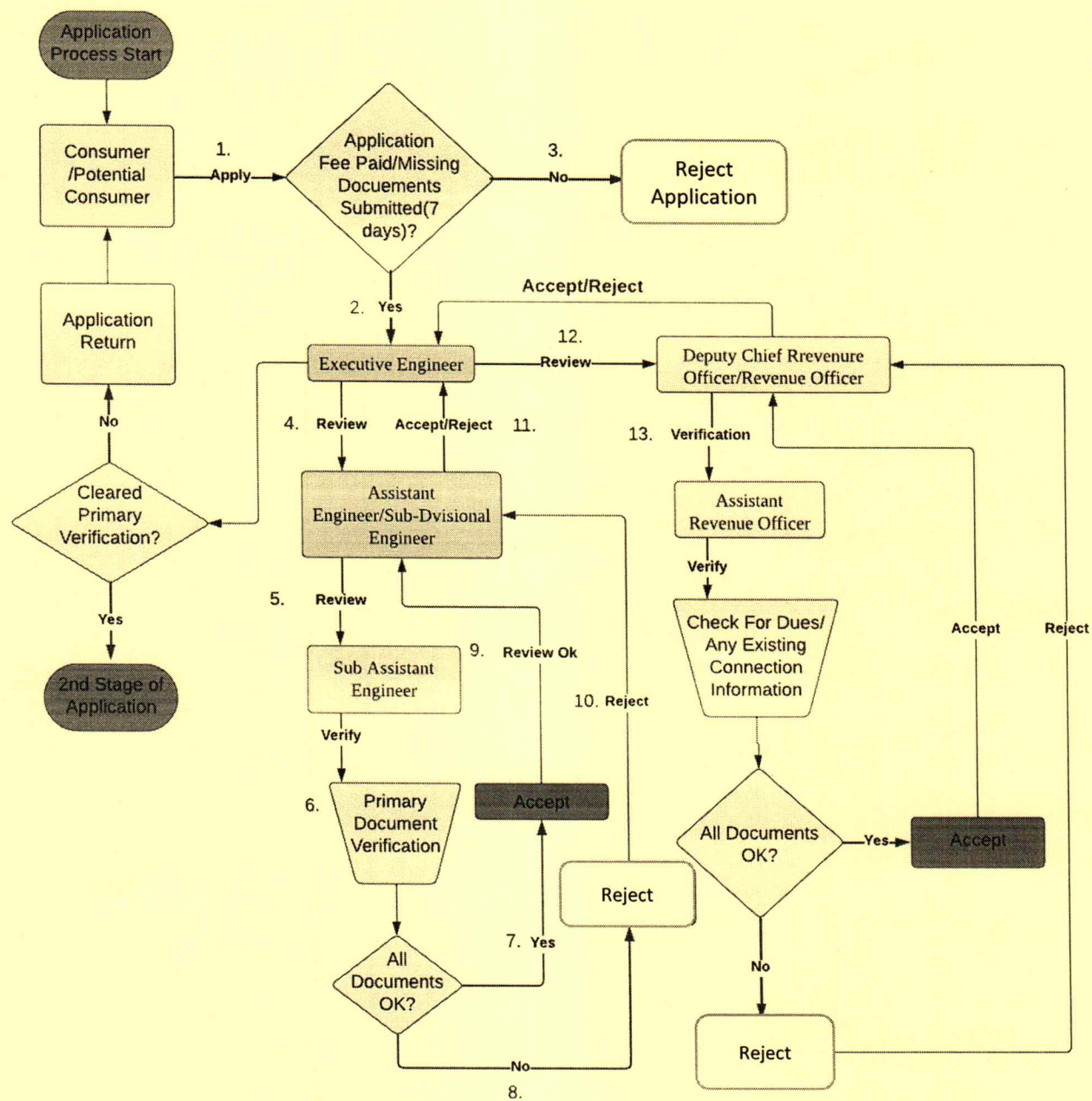
- **Requirements Gathering**
Collaborate with the MIS and Billing Department of Dhaka WASA, alongside other key stakeholders, to thoroughly understand the specific needs for the system upgrade. This includes assessing existing systems, defining user roles, and identifying access requirements.
- **Demo Application Presentation in Figma**
Create a comprehensive presentation using Figma that outlines the entire process flow for the upgrade. This presentation will be used to obtain confirmation and feedback from stakeholders before proceeding.
- **Application System Improvements**
Significantly enhance the existing application system to streamline the process of applying for new water, sewerage, and private deep tubewell connections.
- **User Interface Upgradation**
Upgrade the current user interfaces to enhance user-friendliness and overall experience. An upgraded user interface should be accepted by the end users.
- **Multi-Language Support**
Ensure the application supports both Bengali and English languages to cater to a diverse user base.
- **Browser and Device Compatibility**
Guarantee compatibility of the system with all modern browsers.
- **Authorization and Access Control**
Implement robust role-based access control (RBAC), user-based access, object-based access, implementation of captcha and implement two-factor authentication.
- **Dynamic Configuration**
Incorporate dynamic configuration capabilities, allowing software settings to be adjusted from the front end.

- **Enhanced Security Measures**
Implement robust security measures including encryption, multi-factor authentication, salting, DDOS attack prevention, and continuous monitoring to mitigate potential threats.
- **Report Development**
Develop necessary reports related to the application process as required by the admin users and the MIS & Billing Department of Dhaka WASA.
- **Database and Application Backup**
Establish a comprehensive backup process for both the database and the applications to ensure data integrity and availability.
- **Testing and Quality Assurance**
Conduct thorough testing to ensure the software functions correctly across various platforms, devices, and user scenarios, maintaining high-quality standards.
- **Documentation**
Provide detailed documentation and guidelines to the MIS & Billing Department personnel of Dhaka WASA to ensure smooth operation and maintenance of the system. All documents must duly be accepted by concerned IT personnel of MIS & Billing Department.
- **Deployment and Support**
Deploy the software in a phased approach to minimize disruption and provide ongoing support and maintenance post-implementation.
- **Intellectual Property**
All source code of the software will be considered the intellectual property of Dhaka WASA. Dhaka WASA reserves all rights to modify, use, and develop the code base in the future.
- **Access to Version Control System**
During the development process, grant read and download access to the version control system for concerned personnel from the MIS and Billing Department of DWASA, ensuring transparency and collaborative development.
- **Single Sign-On (SSO) Integration**
Integrate with Single Sign-On (SSO) of Dhaka WASA to allow admin users to access multiple related but independent software systems with one set of login credentials, enhancing convenience and security.
- **Meter Management Software Integration**
Integrate with new meter management software for fetching meter serial numbers from the software.
- **Billing Software Integration**
Integrate with the new Billing Software for automated Billing Account creation.
- **BIDA API Integration**
Must be able to integrate with BIDA API according to their needs.
- **Changes in Process Flow**
Make changes in application process flow of the application according to the needs of the Dhaka WASA end users of the software.
- **Maintenance**
Software firms must provide 24 (Twenty-Four) months/ 730 (Seven Hundred and Thirty) Days of Maintenance & Support service for the software after the Observation and Debugging Period.
- **Other Required API Integration**
Integrate other Required APIs with documentation during the whole maintenance phase.
- Mobile APP Development will be considered further development separate from this project.



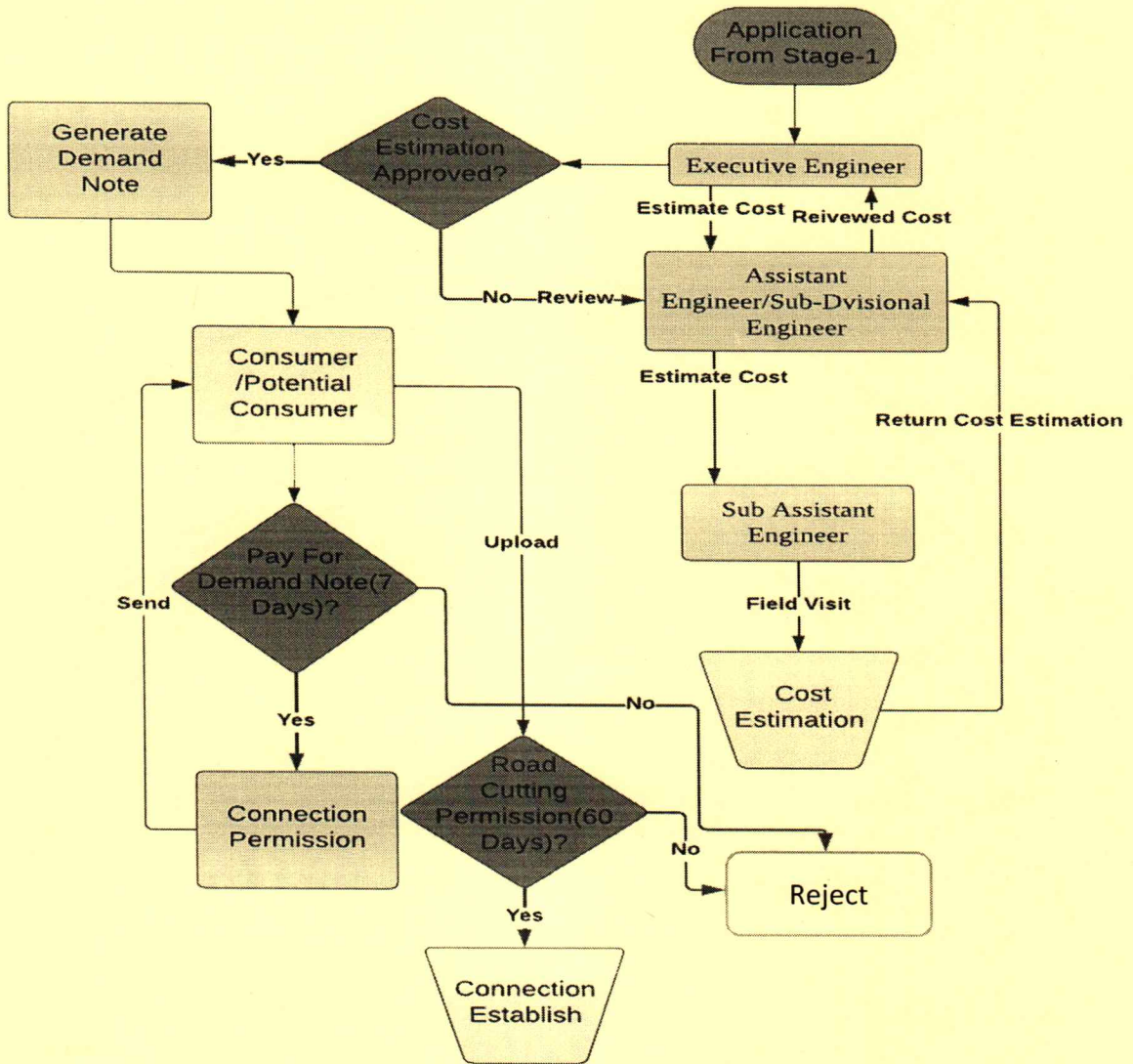

3. Existing Application Process Flow

Existing New Water and Sewerage Connection Stage-1



Existing New Water & Sewage Connection Application Process Flow (Stage-1)

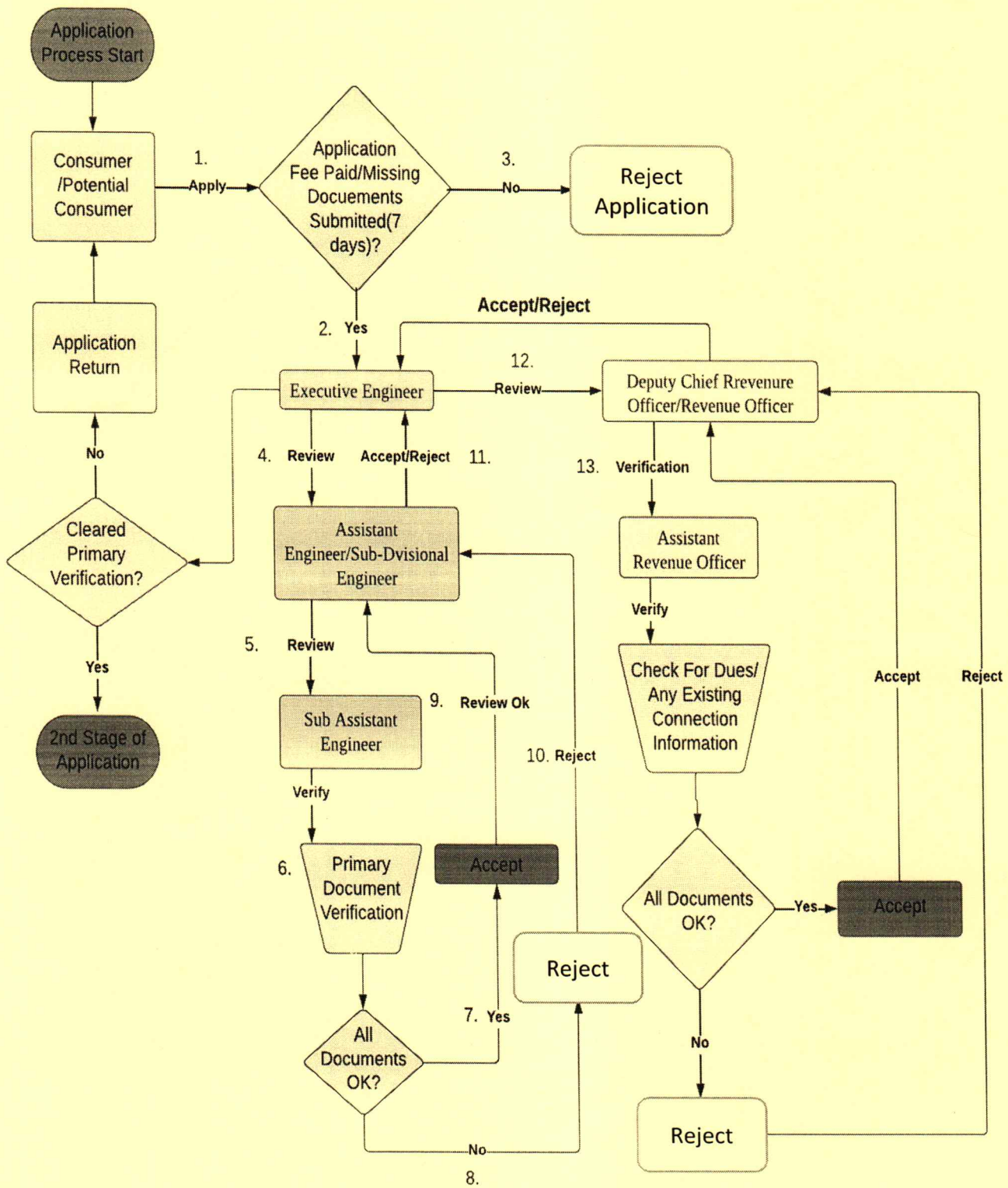
Existing New Water and Sewerage Connection Stage-2



Existing New Water & Sewage Connection Application Process Flow (Stage-2)

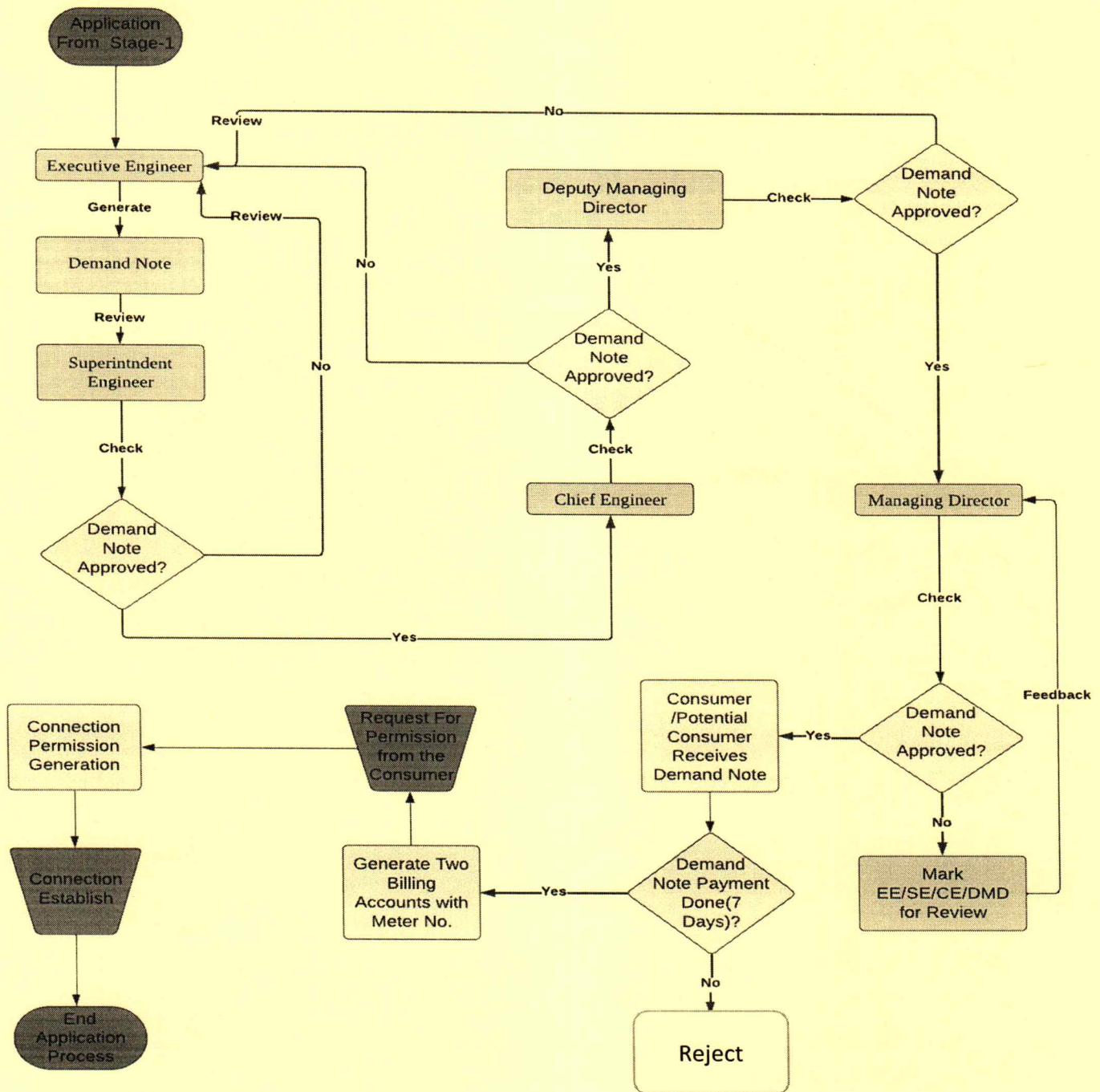


Existing New Private Deep Tubewell Connection Stage-1



Existing New Private Deep Tube-Well Connection Application Process Flow (Stage-1)

Existing New Private Deep Tubewell Connection Stage-2



Existing New Private Deep Tube-Well Connection Application Process Flow (Stage-2)

4. Existing New Connection Application

- **Applications:**
 - a) New Water Connection Application
 - b) New Sewerage Connection Application
 - c) Connection Enlargement Application
 - d) Line Shifting Application
 - e) Temporary Connection Application
- **Features:**
 - a) Edit Application
 - b) Confirm Application
 - c) Download Application

Handwritten signature

- d) Application Status
- e) Demand Note Download
- f) Connection Permission Download
- g) Upload Meter Purchase Slip
- h) Upload Road Cutting Permission
- i) Tracking Number and PIN Number Recovery

- **Admin Features:**

- a) Role Management
- b) User Management
- c) Application Status Report
- d) Basic Setup (item cost, application fee setup etc)
- e) Zone wise application Report (MODS and Revenue)
- f) Overall Report
- g) Payment Information
- h) Rollback Application

5. Existing New Private Deep Tubewell Connection Application

- **Applications:**

- a) **New Private Deep Tubewell Connection Application**

- Features:**

- a) Edit Application
- b) Submit Application
- c) Download Application
- d) Application Status
- e) Payment Slip Download
- f) Demand Note Download
- g) Upload Meter Purchase Slip
- h) Providing Digging Date
- i) Issue Certificate
- j) Tracking Number and PIN Number Recovery

- **Admin Features:**

- a) Role Management
- b) User Management
- c) Application Status Report
- d) Basic Setup (item cost, application fee setup etc.)
- e) Zone wise application Report (MODS and Revenue)
- f) Overall Report
- g) Payment Information
- h) Rollback Permission




6. Development Tools and Platform

Particulars	Technology	Version
Software Development Methodology	Agile Scrum	-
Software Architecture	Micro Service	-
Database	Oracle Database	19C
Web Front End	React.js/Vue.js	Latest Stable
Backend Service	Java Spring boot	Latest Stable
DWASA APIs	Billing API, HRMS API, Meter API	-
Other API	Google Maps API	-
API Technology	REST	-
Authentication	JWT	-
Reporting	Jasper Report (Preferable)	Latest Stable

7. Timeline

Upgradation of New Water, Sewerage and Private Deep Tubewell Connection Software for Dhaka WASA														
SI	Months	1	2	3	4	5	6	7	8	9	10	11	12	13 - 36
1.	Requirement Analysis													
2.	SRS*													
3.	SDD*													
4.	Prototype Building													
5.	Software Upgradation													
6.	Testing & UAT													
7.	Data Migration & Deployment in Live Server													
8.	POST UAT Modifications													
9.	Handover & Training													
10.	Observation and Debugging Period													
11.	Maintenance & Support													



8. Security Requirements

a) System should be able to protect common web attacks:

- Cross-Site Scripting.
- SQL injection.
- Broken Authentication.
- Cross-Site Resource Sharing.
- DoS Attack.
- Brute Force Attack.
- Session Hijacking.

b) Testing:

- Proper User Acceptance Testing.
- Functional Testing.
- Load Testing.
- Penetration Testing.

c) Code Review:

- 16 (Sixteen) working days for code review & understanding and Technology handover.

9. Expected Deliverables

Following is the list of deliverables (But Not Limited to):

- Software Requirement Specification (SRS)
- Software Design Documentation (SDD)
- Application Architecture
- Tools and Technologies with versioning.
- Project build documentation.
- Training Materials and User Manuals
- Complete Source Code
- Complete Live Database
- Deployment Process Document.
- Operation Manual
- Software Design Document.
- Data Backup Process. (In server level and Cloud service based)
- Data Migration Process (Must Provide all the documents related to Migration Process of the Data from Existing Software)
- Data Archiving Process.
- Coding Conventions and Filing Organizations.
- Networking Dependencies
- ER diagram.
- DFD
- Use Case Diagram.
- API Documentation
- Networking Dependencies
- Software Design documentation
- Server Environment Setup Documentation
- Docker Documentation (if any)
- Deployment Process
- System Administration Manual
- Infrastructure and Storage Related Documentation
- Backup and Recovery Policies

10. Staffing Requirements

The proposed services under these Terms and references shall be carried out by using a firm with adequate experience in developing and delivering the expected output of the study. The firm should propose the structure and composition of its team members. It should list the main disciplines of the assignment the 'key experts technical and support staff. An indicative team structure may be as follows:

SI No.	Job Title	Qty
1.	Project Manager/Team Leader	01
2.	System Administrator	01
3.	Database Administrator/Expert	01
4.	Sr. Software Engineer/ Sr. Programmer	01
5.	Software Engineer	03
6.	UI/UX Designer	02
7.	QA Expert (Test Engineer)	01
8.	Support Engineer	02
Total		12

Position	Qualification, Experience and Responsibility
Project Manager/Team Leader	Must have a minimum of 10 years of experience in Software and Service Development. He/she must have a relevant bachelor's degree from a recognized university, preferably in computer science and engineering or IT related subjects. Experience in developing software for Government Autonomous/Semi-Autonomous Organizations is preferable. Project manager will take the overall responsibility for the execution of the assignments in accordance with the TOR and for the coordination of all professional inputs. He/she will be responsible to the employer and maintain close contact with the procuring entity to ensure that the contract is implemented in accordance with the given TOR. The team leader will act as the consultant's authorized representative for both design and implementation supervision phase and make decisions on all matters pertaining to the consulting services.
System Administrator	Must have a minimum of 8 years of experience in Software and Service Development. He/she must have a relevant bachelor's degree from a recognized university, preferably in computer science and engineering or IT related subjects. Must have experience of working in the public sector. Experience in setting up software environments and deploying Application System for various organizations is preferable. The ideal candidate should be proficient with Linux and Windows platforms, experienced in managing various operating systems and virtualization tools like VMware, and skilled in shell scripting for automating maintenance tasks. They must have expertise in system security, including disaster recovery and backup techniques. Responsibilities include installing and maintaining server hardware, managing network servers, configuring software and hardware, monitoring system performance, troubleshooting issues, and ensuring security through access controls and firewalls. Additionally, they should build and maintain an internal wiki with technical documentation and IT policies. Certifications such as RHCSA, RHCE, Linux, and VMware are required.
Database Administrator/Expert	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 5 years of Professional experience in relevant field. The candidate should manage and monitor Oracle Database 12C/19C instances, focusing on network connections, security, and privileges. They are responsible for managing database concurrency, implementing auditing, and using the Data Recovery Advisor for diagnosing and repairing failures. Proficiency in performing encrypted database backups and restores, and working with Oracle Data Guard is essential. They should be skilled in using Recovery Manager (RMAN) for backup and recovery operations, and in planning effective backup and recovery procedures. Additionally, the candidate should prepare ADDM reports for performance monitoring and plan effective data migration processes.
Sr. Software Engineer/ Sr. Programmer	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 5 years of Professional experience in relevant field. The job involves developing and maintaining software application components, guiding



	subordinates in development and implementation. Responsibilities include participating in all software development lifecycle stages, translating business requirements into foundational platform components, and guiding software engineers, programmers, analysts, and support specialists. The role requires architecting scalable and responsive platforms, documenting architectural standards and best practices, and mentoring teams on developing resilient applications. Collaboration with deployment and infrastructure teams for software and platform provisioning is essential. Identifying and implementing opportunities for change and introducing new concepts, procedures, policies, and tools is also part of the role. At least 5 years of practical software development experience, including 3 years with Java Spring boot frameworks. Proficiency in software debugging and customization is necessary, along with strong problem-solving skills and the ability to work independently or in a team.
Software Engineer	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 3 years of Professional experience in relevant field. The Software Engineer would be responsible for the creation, maintenance and management of software components and their lower-level sub-components. The incumbent is also required to interpret, use and apply information contained within IT architecture to inform a range of business improvement activities, particularly those involved in the design, development, enhancement and maintenance of various citizen services, e-services and govt application systems. The incumbent is expected to ensure that appropriate considerations are made for its security and quality.
UI/UX Designer	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 2 years of Professional experience in relevant field. At least 1 year experience in React/VueJs Front End Development. UI/UX designers are responsible for creating visually appealing and user-friendly interfaces by combining visual design and user research. They develop prototypes, wireframes, and high-fidelity mockups to guide the design and functionality of digital products. Collaboration with developers and stakeholders ensures designs align with business goals and technical constraints. They conduct usability testing and iterate designs based on user feedback to enhance the user experience. Staying updated with the latest design trends and tools is essential for continuous improvement and innovation.
QA Expert (Test Engineer)	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 2 years of Professional experience in relevant field. QA experts, or test engineers, are responsible for ensuring software quality by designing and executing test plans and cases. They identify, document, and track bugs and performance issues, collaborating with developers to resolve them. Conducting various types of testing, such as functional, regression, and performance testing, ensures comprehensive coverage. They automate tests where possible to improve efficiency and consistency. Staying updated with the latest testing tools and methodologies is crucial for maintaining high standards of software quality.
Support Engineer	At least bachelor's degree in computer science/computer science & engineering or IT Related subjects. Must have 2 years of Professional experience in software development. Support engineers are responsible for providing technical assistance to customers, resolving issues related to products or services. They diagnose and troubleshoot problems, guiding users through step-by-step solutions. Collaborating with development teams, they help identify and fix bugs and improve overall product quality. They document common issues and solutions, contributing to knowledge bases and support documentation. Staying updated with product changes and technological advancements is essential for providing accurate and effective support

10. Training

The software firm must arrange Training for stakeholders according to the following arrangements:

SL NO.	Training Type	Training Days	No of Persons (Per Day)
1	Prototype (New Connection)	1	20
2	Prototype (Deep Tube Well)	1	20
3	UAT (New Connection)	1	20
4	UAT (Deep Tube Well)	1	20
5	Data Migration & Server Deployment	4	14
6	Front-End Source Code Handover	2	10
7	Backend Source Code Handover	4	10
8	Database Architecture Handover	3	10
9	Security Training	3	10
Total		20	134

- * Training Honorarium and Refreshments will be provided as per Government rule by the software firm.
- * Training kits (Bag, Pen, Pencil, Training Manual etc.) not more than BDT 1200/- (Twelve Hundred Only) must be provided by the software firm per training per person.

11. Facilities to be Provided by the Client

- The MIS & Billing Department of DWASA will provide access to the network infrastructure and separate server.
- The MIS & Billing Department of DWASA will provide a technical committee (Technical Working Committee and IT Support team) and will liaise with the consultancy firm for any technical aspect.
- The MIS & Billing Department of DWASA shall make the necessary logistical arrangements for training like training room, computers etc.

12. Project Management Review

Focal IT personnel from MIS & Billing Department of DWASA would review the progress of the project at regular intervals. So, he/she must be given read and download access to Version Control System during development. The selected consultancy firm should send weekly progress reports & monthly status reports to Senior System Analyst, MIS & Billing Department, DWASA. The selected software firm must obtain the necessary concurrence from the MIS & Billing Department if there is any slippage in the deliverables as mentioned earlier. The software firm must report any changes made in the software during development to MIS & Billing Department, DWASA. The review would be supported by the focal officer.

