

Invitation for Bids No.: BUIDCo/BUDIP/ICB/01**Date: 26th August, 2013****Loan No. and Title:** 2861-IND, Bihar Urban Development Investment Program - Project 1**Contract Package Number & Name:** BH/WS/01; Rehabilitation, Construction, Operations, Maintenance and Management of Bhagalpur Water Supply Project 1 (BWSP1).**Deadline for submission of Bids: 15.00 hours on 10th October, 2013**

1. This Invitation for Bids (IFB) follows the Procurement Plan for this project that appeared in Asian Development Bank's Business Opportunities website.
2. India has received financing from the Asian Development Bank (ADB) towards the cost of Bihar Urban Development Investment Program - Project 1. Part of this financing will be used for payments under the contract named above. International Competitive Bidding (ICB) will be conducted in accordance with ADB's **single stage - two envelope** bidding procedure and is open to all eligible bidders from eligible source countries of ADB.
3. The Bihar Urban Infrastructure Development Corporation Limited (BUIDCo; hereinafter referred to as the "Employer"), a Government of Bihar undertaking, represented by its Managing Director, invites sealed bids from eligible bidders for the improvement of Bhagalpur water supply system. The scope of work includes rehabilitation of existing water treatment works, construction of new water distribution infrastructure to achieve continuous pressurised (24x7) water supply, and operation, maintenance and management of the water supply system.
4. To be qualified for the contract package, the bidder should as a minimum meet the following requirements:
 - a) Average annual construction turnover for last three years equal to or more than INR 1150 million (equivalent to about US\$ 23 million);
 - b) Participation as contractor, sub-contractor or management contractor in at least two water supply works contracts each with a minimum value of INR 1600 million (equivalent US\$ 32 million) within the last seven years that are similar to the proposed works and have been successfully or substantially completed;
 - c) Operating, maintaining and managing a water supply distribution scheme with at least 20,000 household connections with continuous, pressurized (24x7) water supply for at least two years; and
 - d) Meet other financial and experience requirements as indicated in the Bidding Document.However for complete eligibility and qualification requirements, interested bidders should refer to the Bidding Document.
5. To obtain further information and inspect the Bidding Document, interested bidders should contact: Chief General Manager, BUIDCo, 3rd floor, Maurya Tower, Mauryalok Complex, Budh Marg, Patna – 800001, Bihar, India. Tel: +91-612-2210101/02 email: cgmbuidco@gmail.com from 10:00 to 16:00 hours.
6. The Bidding Document is available on the project website www.buidco.in. Eligible interested bidders can download the document and can participate in the bidding procedure on payment of Rs. 20000/- (Rupees twenty thousand only) or US\$ 400 to be submitted along with the technical proposal through demand draft in favour of **Managing Director, Bihar Urban Infrastructure Development Corporation**

Limited, payable at **Patna**. Bidders who download the document from the website are requested to visit the website regularly for clarifications/ further information or addendums to the Bidding Document.

7. Bids must be delivered at the address below at or before **15.00 hours on 10th October 2013**. Technical bids must be accompanied by the Bid Security as indicated in Section 2: Bid Data Sheet. Late bids shall be rejected. Technical bids will be opened on the same day in the presence of the bidders' representatives who choose to attend at the **conference hall of BUIDCo** office at Patna at **15.30** hours.
8. The Employer will not be responsible for any costs or expenses incurred by bidders in connection with the preparation or delivery of bids.
9. A pre-bid meeting with bidders shall be held at the conference hall of BUIDCo, at **11.00 hours on 12th September 2013**. A work Site visit will be conducted at **12.00 hours on 13th September 2013**. Bidders interested in participating in the bid process are advised to attend the pre-bid meeting and the Site visit before submission of bids.

Managing Director
Bihar Urban Infrastructure Development Corporation Limited
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Patna - 800001
Bihar, India
Tel: +91-612-2210101/02
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Bihar Urban Development Investment Program - Project 1

(ADB Loan No. 2861-IND)

BIDDING DOCUMENT

For

Procurement

Of

Rehabilitation, Construction, Operation, Maintenance and Management
of Bhagalpur Water Supply Project 1 (BWSP1)

(Following ADB's single stage two envelope bidding procedure)

Part 1

Issued on:

Invitation for Bids No.: BUIDCo/BUDIP/ICB/01

ICB No.: BH/WS/01

Employer: Bihar Urban Infrastructure Development Corporation Ltd

Government of Bihar

Country: India

Preface

This Bidding Document for the Procurement of Works has been prepared by **Bihar Urban Infrastructure Development Corporation Ltd, Government of Bihar** and is based on the Standard Bidding Document for the Procurement of Works (SBD Works) issued by the Asian Development Bank dated January 2013.

ADB's *SBD Works* has the structure and the provisions of the Master Procurement Document entitled "Bidding Documents for the Procurement of Works", prepared by multilateral development banks and other public international financial institutions, except where ADB-specific considerations have required a change.

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This section consists of provisions that are specific to each stage of procurement and supplement the information or requirements included in Section 1 - Instructions to Bidders.

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Section 1 - Instructions to Bidders

Section 1 - Instructions to Bidders

This section specifies the procedures to be followed by Bidders in the preparation and submission of their Bids. Information is also provided on the submission, opening, and evaluation of bids and on the award of contract.

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Section 1 - Instructions to Bidders

A. General

- 1. Scope of Bid**
 - 1.1 In connection with the Invitation for Bids indicated in the Bid Data Sheet (BDS), the Employer, as indicated in the BDS, issues this Bidding Document for the procurement of Works as specified in Section 6 (Employer's Requirements). The name, identification, and number of contracts of the International Competitive Bidding (ICB) are provided in the BDS.
 - 1.2 Throughout this Bidding Document:
 - (a) the term "in writing" means communicated in written form and delivered against receipt;
 - (b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and
 - (c) "day" means calendar day.
- 2. Source of Funds**
 - 2.1 The Borrower or Recipient (hereinafter called "Borrower") indicated in the BDS has applied for or received financing (hereinafter called "funds") from the Asian Development Bank (hereinafter called "ADB") toward the cost of the project named in the BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.
 - 2.2 Payments by the ADB will be made only at the request of the Borrower and upon approval by the ADB in accordance with the terms and conditions of the financing agreement between the Borrower and the ADB (hereinafter called the Financing Agreement), and will be subject in all respects to the terms and conditions of that Financing Agreement. No party other than the Borrower shall derive any rights from the Financing Agreement or have any claim to the funds.
- 3. Fraud and Corruption**
 - 3.1 ADB's Anticorruption Policy requires that borrowers (including beneficiaries of ADB-financed activity), as well as bidders, suppliers, and contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the ADB:
 - (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
 - (ii) "fraudulent practice" means any act or Omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
 - (iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any

- party or the property of the party to influence improperly the actions of a party;
- (iv) “collusive practice” means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.
- (b) will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract; and
- (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, or coercive practices during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation; and
- (d) will sanction a firm or an individual, at any time, in accordance with ADB’s Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate¹ in ADB-financed or ADB-administered activities or to benefit from an ADB-financed or ADB-administered contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive or other prohibited practices.
- 3.2 Furthermore, Bidders shall be aware of the provision stated in Sub-Clause 1.15 and 15.6 of the Conditions of Contract.
- 4. Eligible Bidders**
- 4.1 A Bidder may be a natural person, private entity, government-owned entity—subject to ITB 4.5—or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture (JV). In the case of a JV:
- (a) all partners shall be jointly and severally liable, and
- (b) the JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.
- 4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section 5 (Eligible Countries). A Bidder shall be deemed to have the

¹ Whether as a contractor, nominated sub-contractor, consultant, manufacturer or supplier, or service provider; or in any other capacity (different names are used depending on the particular bidding document). A nominated sub-contractor is one which either has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that are accounted for in the evaluation of the bidder’s pre-qualification application or the bid; or (ii) appointed by the Employer.

- nationality of a country if the Bidder is a citizen or is constituted, or incorporated, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed sub-contractors or suppliers for any part of the Contract including related services.
- 4.3 Bidders shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. Bidders may be considered to be in a conflict of interest with one or more parties in the bidding process if including but not limited to:
- (a) they have controlling shareholders in common; or
 - (b) they receive or have received any direct or indirect subsidy from any of them; or
 - (c) they have the same legal representative for purposes of this bid; or
 - (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to material information about or improperly influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
 - (e) a Bidder participates in more than one bid in this bidding process, either individually or as a partner in a joint venture, except for alternative offers permitted under ITB Clause 13 of the Bidding Document. This will result in the disqualification of all Bids in which it is involved. However, subject to any finding of a conflict of interest in terms of 4.3 (a) - (d) above, this does not limit the participation of a Bidder as a Sub-contractor in another bid or of a firm as a Sub-contractor in more than one bid; or
 - (f) a Bidder or any affiliated entity, participated as a Consultant in the preparation of the design or technical specifications of the Works that are the subject of the bid; or
 - (g) a Bidder was affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Employer or Borrower as Employer's Representative for the contract.
- 4.4 A firm shall not be eligible to participate in any procurement activities under an ADB-financed or ADB-supported project while under sanction by ADB pursuant to its Anticorruption Policy (see ITB 3), whether such sanction was directly imposed by ADB, or imposed by ADB pursuant to the Agreement for Mutual Enforcement of Debarment Decisions. A bid from a sanctioned or cross-debarred firm will be rejected.
- 4.5 Government-owned enterprises in the Employer's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not a dependent agency of the Employer.
- 4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.
- 4.7 Firms shall be excluded if by an act of compliance with a decision of the United Nations Security Council taken under

Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of Goods or contracting of Works or services from that country or any payments to persons or entities in that country.

- 4.8 In case a prequalification process has been conducted prior to the bidding process, this bidding is open only to prequalified Bidders.
- 5. Eligible Materials, Equipment and Services**
- 5.1 The Materials, equipment and services to be supplied under the Contract shall have their origin in eligible source countries as defined in ITB 4.2 above and all expenditures under the Contract will be limited to such Materials, equipment, and services. At the Employer's request, Bidders may be required to provide evidence of the origin of Materials, equipment and services.
- 5.2 For purposes of ITB 5.1 above, "origin" means the place where the Materials and equipment are mined, grown, produced or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that differs substantially in its basic characteristics or in purpose or utility from its components.

B. Contents of Bidding Document

- 6. Sections of Bidding Document**
- 6.1 The Bidding Document consists of Parts I, II, and III, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART I Bidding Procedures

Section 1 - Instructions to Bidders (ITB)

Section 2 - Bid Data Sheet (BDS)

Section 3 - Evaluation and Qualification Criteria (EQC)

Section 4 - Bidding Forms (BDF)

Section 5 - Eligible Countries (ELC)

PART II Requirements

Section 6 - Employer's Requirements (ERQ)

PART III Conditions of Contract and Contract Forms

Section 7 - General Conditions (GCC)

Section 8 - Particular Conditions (PCC)

Section 9 - Contract Forms (COF)

- 6.2 The Invitation for Bids issued by the Employer is not part of the Bidding Document.
- 6.3 The Employer is not responsible for the completeness of the Bidding Document and their Addenda, if they were not obtained directly from the source stated by the Employer in the Invitation for Bids.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.
- 7. Clarification of**
- 7.1 A prospective Bidder requiring any clarification of the Bidding

**Bidding
Document, Site
Visit, Pre-Bid
Meeting**

Document shall contact the Employer in writing at the Employer's address indicated in the BDS or raise his inquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received no later than twenty-one (21) days prior to the deadline for submission of bids. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.

7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

7.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

7.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer not later than one week before the meeting.

7.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting.

7.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

**8. Amendment of
Bidding
Document**

8.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing addenda.

8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the

Bidding Document from the Employer in accordance with ITB 6.3.

- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2

C. Preparation of Bids

- 9. Cost of Bidding** 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- 10. Language of Bid** 10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.
- 11. Documents Comprising the Bid**
- 11.1 The Bid shall comprise two envelopes submitted simultaneously, one called the Technical Bid containing the documents listed in ITB 11.2 and the other the Price Bid containing the documents listed in ITB 11.3, both envelopes enclosed together in an outer single envelope.
- 11.2 The Technical Bid shall comprise the following:
- (a) Letter of Technical Bid;
 - (b) Bid Security or Bid Securing Declaration, in accordance with ITB 19;
 - (c) alternative bids, if permissible, in accordance with ITB 13;
 - (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
 - (e) documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the contract;
 - (f) Technical Proposal in accordance with ITB 16;
 - (g) Any other document required in the BDS.
- 11.3 The Price Bid shall comprise the following:
- (a) Letter of Price Bid;
 - (b) completed Price Schedules, in accordance with ITB 12 and 14;
 - (c) alternative Price Bids, at Bidder's option and if permissible, in accordance with ITB 13;
 - (d) Any other document required in the BDS.
- 11.4 In addition to the requirements under ITB 11.2, bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all partners. Alternatively, a Letter of Intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all partners and submitted with the bid,

- together with a copy of the proposed Agreement.
- 12. Letters of Bid, and Schedules** 12.1 The Letters of Technical Bid and Price Bid, and the Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section 4 (Bidding Forms). The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.
- 13. Alternative Bids** 13.1 Unless otherwise indicated in the BDS, alternative bids shall not be considered.
- 13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the BDS, as will the method of evaluating different times for completion.
- 13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Document must first price the Employer's design as described in the Bidding Document and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer.
- 13.4 When specified in the BDS, Bidders are permitted to submit alternative technical solutions for specified parts of the Works. Such parts will be identified in the BDS and described in Section 6 (Employer's Requirements). The method for their evaluation will be stipulated in Section 3 (Evaluation and Qualification Criteria).
- 14. Bid Prices and Discounts** 14.1 The prices and discounts quoted by the Bidder in the Letter of Price Bid and in the Bill of Quantities shall conform to the requirements specified below.
- 14.2 The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities.
- 14.3 The price to be quoted in the Letter of Price Bid, in accordance with ITB 12.1, shall be the total price of the Bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any discounts and the methodology for their application in the Letter of Price Bid, in accordance with ITB 12.1.
- 14.5 Unless otherwise provided in the BDS and the Contract, the rates and prices quoted by the Bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract. In such a case, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Tables of Adjustment Data included in Section 4 (Bidding Forms) and the Employer may require the

Bidder to justify its proposed indices and weightings.

14.6 If so indicated in ITB 1.1, bids are being invited for individual contracts or for any combination of contracts (packages). Bidders wishing to offer any price reduction for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITB 14.4, provided the bids for all contracts are submitted and opened at the same time.

14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.

15. Currencies of Bid and Payment

15.1 The unit rates and the prices shall be quoted by the bidder entirely in the currency specified in the BDS.

15.2 Bidders shall indicate the portion of the Bid Price that corresponds to expenditures incurred in the currency of the Employer's country in the Schedule of Payment Currencies included in Section 4 (Bidding Forms).

15.3 Bidders expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's country and wishing to be paid accordingly may indicate up to three foreign currencies in the Schedule of Payment Currencies included in Section 4 (Bidding Forms).

15.4 The rates of exchange to be used by the bidder for currency conversion during bid preparation shall be the selling rates for similar transactions prevailing on the date 28 days prior to the deadline for submission of bids published by the source specified in the BDS. If exchange rates are not so published for certain currencies, the bidder shall state the rates used and the source. Bidders should note that for the purpose of payments, the exchange rates confirmed by the source specified in the BDS as the selling rates prevailing 28 days prior to the deadline for submission of bids shall apply for the duration of the Contract so that no currency exchange risk is borne by the bidder.

15.5 Foreign currency requirements indicated by the bidders in the Schedule of Payment Currencies shall include but not limited to the specific requirements for:

- (a) expatriate staff and labor employed directly on the Works;
- (b) social, insurance, medical and other charges relating to such expatriate staff and labor, and foreign travel expenses;
- (c) imported Materials, both temporary and permanent, including fuels, oil and lubricants required for the Works;
- (d) depreciation and usage of imported Plant and Contractor's Equipment, including spare parts, required for the Works;
- (e) foreign insurance and freight charges for imported Materials, Plant and Contractor's Equipment, including spare parts; and
- (f) overhead expenses, fees, profit, and financial charges arising outside the Employer's country in connection with the

Works.

- 15.6 Bidders may be required by the Employer to clarify their foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Payment Currencies are reasonable and responsive to ITB 15.3 above, in which case a detailed breakdown of its foreign currency requirements shall be provided by the Bidder.
- 15.7 Bidders should note that during the progress of the Works, the foreign currency requirements of the outstanding balance of the Contract Price may be adjusted by agreement between the Employer and the Contractor in order to reflect any changes in foreign currency requirements for the Contract, in accordance with Sub-Clause 14.15 of the Conditions of Contract. Any such adjustment shall be effected by comparing the percentages quoted in the bid with the amounts already used in the Works and the Contractor's future needs for imported items.
- 16. Documents Comprising the Technical Proposal**
- 16.1 The Bidder shall furnish, as part of the Technical Bid, a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section 4 (Bidding Forms), in sufficient detail to demonstrate the adequacy of the Bidders' proposal to meet the work requirements and the completion time.
- 17. Documents Establishing the Qualifications of the Bidder**
- 17.1 To establish its qualifications to perform the Contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding information sheets included in Section 4 (Bidding Forms).
- 17.2 Domestic Bidders, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility as described in ITB 35.
- 18. Period of Validity of Bids**
- 18.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Employer. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.
- 18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 19, it shall also be extended twenty-eight (28) days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid.
- 19. Bid Security/Bid Securing Declaration**
- 19.1 Unless otherwise specified in the BDS, the Bidder shall furnish as part of its bid, in original form, either a Bid Securing Declaration or a Bid Security as specified in the BDS. In the case of a Bid Security, the amount shall be as specified in the BDS.
- 19.2 A Bid Securing Declaration shall use the form included in Section 4 (Bidding Forms). The Employer will declare a Bidder

ineligible to be awarded a Contract for a specified period of time if the Bid Securing Declaration is executed.

- 19.3 The Bid Security shall be, at the Bidder's option, in any of the following forms:
- (a) an unconditional bank guarantee;
 - (b) an irrevocable letter of credit; or
 - (c) a cashier's or certified check;
- all from a reputable source from an eligible country. In the case of a bank guarantee, the Bid Security shall be submitted either using the Bid Security Form included in Section 4 (Bidding Forms) or another form acceptable to the Employer. The form must include the complete name of the Bidder. The Bid Security shall be valid for twenty-eight days (28) beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.
- 19.4 Any Bid not accompanied by a substantially compliant Bid Security or Bid Securing Declaration, if one is required in accordance with ITB 19.1, shall be rejected by the Employer as non-responsive.
- 19.5 If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's furnishing of the performance security pursuant to ITB 42.
- 19.6 If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.
- 19.7 The Bid Security may be forfeited or the Bid Securing Declaration executed:
- (a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid, except as provided in ITB 18.2; or
 - (b) if the successful Bidder fails to:
 - (i) sign the Contract in accordance with ITB 41; or
 - (ii) furnish a performance security in accordance with ITB 42; or
 - (iii) accept the arithmetical correction of its Bid in accordance with ITB 33; or
 - (iv) furnish a domestic preference security, if so required.
- 19.8 The Bid Security or Bid Securing Declaration of a JV shall be in the name of the JV that submits the Bid. If the JV has not been legally constituted at the time of bidding, the Bid Security or Bid Securing Declaration shall be in the names of all future partners as named in the letter of intent mentioned in ITB 4.1.
- 20. Format and Signing of Bid**
- 20.1 The Bidder shall prepare one original of the Technical Bid and one original of the Price Bid comprising the Bid as described in ITB 11 and clearly mark it "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID". Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit copies of the Technical and Price Bids, in the number specified in the

BDS, and clearly mark each of them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

- 20.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid, except for unamended printed literature, shall be signed or initialed by the person signing the bid.
- 20.3 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

D. Submission and Opening of Bids

21. Sealing and Marking of Bids

- 21.1 The Bidder shall enclose the original of the Technical Bid, the original of the Price Bid, and each copy of the Technical Bid and each copy of the Price Bid, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL - TECHNICAL BID", "ORIGINAL - PRICE BID" and "COPY NO... - TECHNICAL BID" and "COPY NO.... - PRICE BID." These envelopes, the first containing the originals and the others containing copies, shall then be enclosed in one single envelope per set. If permitted in accordance with ITB 13, alternative bids shall be similarly sealed, marked and included in the sets.
- 21.2 The inner and outer envelopes shall:
- (a) bear the name and address of the Bidder;
 - (b) be addressed to the Employer in accordance with BDS 22.1; and
 - (c) bear the specific identification of this bidding process indicated in the BDS 1.1.
- 21.3 The outer envelopes and the inner envelopes containing the Technical Bid shall bear a warning not to open before the time and date for the opening of Technical Bid, in accordance with ITB Sub-Clause 25.1.
- 21.4 The inner envelopes containing the Price Bid shall bear a warning not to open until advised by the Employer in accordance with ITB Sub-Clause 25.7.
- 21.5 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

22. Deadline for Submission of Bids

- 22.1 Bids must be received by the Employer at the address and no later than the date and time indicated in the BDS. When so specified in the BDS, Bidders shall have the option of submitting their Bids electronically. Bidders submitting bids electronically shall follow the electronic bid submission procedures specified in the BDS.

- 22.2 The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
- 23. Late Bids**
- 23.1 The Employer shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Employer after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.
- 24. Withdrawal, Substitution, and Modification of Bids**
- 24.1 A Bidder may withdraw, substitute, or modify its Bid – Technical or Price – after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:
- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION;” and
 - (b) received by the Employer no later than the deadline prescribed for submission of bids, in accordance with ITB 22.
- 24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.
- 24.3 No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid or any extension thereof.
- 25. Bid Opening**
- 25.1 The Employer shall open the Technical Bids in public at the address, date and time specified in the BDS in the presence of Bidders` designated representatives and anyone who chooses to attend. The Price Bids will remain unopened and will be held in custody of the Employer until the specified time of their opening. If the Technical Bid and the Price Bid are submitted together in one envelope, the Employer may reject the entire Bid. Alternatively, the Price Bid may be immediately resealed for later evaluation.
- 25.2 First, envelopes marked “WITHDRAWAL” shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening.
- 25.3 Second, outer envelopes marked “SUBSTITUTION” shall be opened. The inner envelopes containing the Substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to

be returned to the Bidder unopened. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bid will remain unopened in accordance with ITB Sub-Clause 25.1. No envelope shall be substituted unless the corresponding Substitution Notice contains a valid authorization to request the substitution and is read out and recorded at bid opening.

- 25.4 Next, outer envelopes marked “MODIFICATION” shall be opened. No Technical Bid and/or Price Bid shall be modified unless the corresponding Modification Notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price Bids, both Original as well as Modification, will remain unopened in accordance with ITB Sub-Clause 25.1.
- 25.5 All other envelopes holding the Technical Bids shall be opened one at a time, and the following read out and recorded:
- (a) the name of the Bidder;
 - (b) whether there is a modification or substitution;
 - (c) the presence of a Bid Security or Bid Securing Declaration, if required; and
 - (d) any other details as the Employer may consider appropriate.

Only Technical Bids and alternative Technical Bids read out and recorded at bid opening shall be considered for evaluation. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with ITB Sub-Clause 23.1.

- 25.6 The Employer shall prepare a record of the opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; alternative proposals; and the presence or absence of a Bid Security or Bid Securing Declaration, if one was required. The Bidders’ representatives who are present shall be requested to sign the record. The omission of a Bidder’s signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.
- 25.7 At the end of the evaluation of the Technical Bids, the Employer will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer. Bidders shall be given reasonable notice of the opening of Price Bids.
- 25.8 The Employer will notify Bidders in writing who have been rejected on the grounds of their Technical Bids being substantially non-responsive to the requirements of the Bidding Document and return their Price Bids unopened.
- 25.9 The Employer shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids,

in the presence of Bidders' representatives who choose to attend at the address, date and time specified by the Employer. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.

- 25.10 All envelopes containing Price Bids shall be opened one at a time and the following read out and recorded:
- (a) the name of the Bidder;
 - (b) whether there is a modification or substitution;
 - (c) the Bid Prices, including any discounts and alternative offers; and
 - (d) any other details as the Employer may consider appropriate.

Only Price Bids discounts, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. No Bid shall be rejected at the opening of Price Bids.

- 25.11 The Employer shall prepare a record of the opening of Price Bids that shall include, as a minimum: the name of the Bidder, the Bid Price (per lot if applicable), any discounts, and alternative offers. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

E. Evaluation and Comparison of Bids

- 26. Confidentiality**
- 26.1 Information relating to the examination, evaluation, comparison, and post-qualification of bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders.
- 26.2 Any attempt by a Bidder to influence the Employer in the evaluation of the bids or Contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it may do so in writing.
- 27. Clarification of Bids**
- 27.1 To assist in the examination, evaluation, and comparison of the Technical and Price Bids, the Employer may, at its discretion, ask any Bidder for a clarification of its bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the substance of the Technical Bid or prices in the Price Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Price Bids, in accordance with ITB 33.
- 27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its bid may be rejected.

- 28. Deviations, Reservations, and Omissions**
- 28.1 During the evaluation of bids, the following definitions apply:
- (a) “Deviation” is a departure from the requirements specified in the Bidding Document;
 - (b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
 - (c) “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Document.
- 29. Preliminary Examination of Technical Bids**
- 29.1 The Employer shall examine the Technical Bid to confirm that all documents and technical documentation requested in ITB Sub-Clause 11.2 have been provided, and to determine the completeness of each document submitted.
- 29.2 The Employer shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer shall be rejected:
- (a) Letter of Technical Bid;
 - (b) written confirmation of authorization to commit the Bidder;
 - (c) Bid Security or Bid Securing Declaration, if applicable; and
 - (d) Technical Proposal in accordance with ITB 16.
- 30. Responsiveness of Technical Bid**
- 30.1 The Employer’s determination of a Bid’s responsiveness is to be based on the contents of the bid itself, as defined in ITB11.
- 30.2 A substantially responsive Technical Bid is one that meets the requirements of the Bidding Document without material Deviation, Reservation, or Omission. A material Deviation, Reservation, or Omission is one that,
- (a) if accepted, would:
 - (i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
 - (ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer’s rights or the Bidder’s obligations under the proposed Contract; or
 - (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.
- 30.3 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 16, Technical Proposal, in particular, to confirm that all requirements of Section 6 (Employer’s Requirements) have been met without any material Deviation, Reservation or Omission.
- 30.4 If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material Deviation, Reservation, or Omission.
- 31. Nonmaterial Nonconformities**
- 31.1 Provided that a bid is substantially responsive, the Employer may waive any non-conformities in the Bid that do not constitute a material Deviation, Reservation or Omission.
- 31.2 Provided that a Technical Bid is substantially responsive, the Employer may request that the Bidder submit the necessary

information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the Price Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

31.3 Provided that a Technical Bid is substantially responsive, the Employer shall rectify nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section 3 (Evaluation and Qualification Criteria).

32. Qualification of the Bidder

32.1 The Employer shall determine to its satisfaction during the evaluation of Technical Bids whether Bidders meet the qualifying criteria specified in Section 3 (Evaluation and Qualification Criteria).

32.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17.1.

32.3 An affirmative determination shall be a prerequisite for the opening and evaluation of a Bidder's Price Bid. A negative determination shall result in the disqualification of the Bid, in which event the Employer shall return the unopened Price Bid to the Bidder.

33. Correction of Arithmetical Errors

33.1 During the evaluation of Price Bids, the Employer shall correct arithmetical errors on the following basis:

- (a) if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
- (b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected;
- (c) if there is a discrepancy between the Bid Price in the Summary of Bill of Quantities and the bid amount in item (c) of the Letter of Price Bid, the Bid Price in the Summary of Bill of Quantities will prevail and the bid amount in item (c) of the Letter of Price Bid will be corrected; and
- (d) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a), (b) and (c) above.

33.2 If the Bidder that submitted the lowest evaluated bid does not accept the correction of errors, its Bid shall be disqualified and its Bid Security may be forfeited or its Bid Securing Declaration

- executed.
- 34. Conversion to Single Currency** 34.1 For evaluation and comparison purposes, the currency(ies) of the bid shall be converted into a single currency as specified in the BDS.
- 35. Margin of Preference** 35.1 Unless otherwise specified in the BDS, a margin of preference shall not apply.
- 36. Evaluation of Price Bids** 36.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.
- 36.2 To evaluate the Price Bid, the Employer shall consider the following:
- (a) the Bid Price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including Daywork items, where priced competitively;
 - (b) price adjustment for correction of arithmetic errors in accordance with ITB 33.1;
 - (c) price adjustment due to discounts offered in accordance with ITB 14.4;
 - (d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 34;
 - (e) adjustment for nonconformities in accordance with ITB 31.3;
 - (f) application of all the evaluation factors indicated in Section 3 (Evaluation and Qualification Criteria).
- 36.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.
- 36.4 If this Bidding Document allows Bidders to quote separate prices for different contracts, and the award to a single Bidder of multiple contracts, the methodology to determine the lowest evaluated price of the contract combinations, including any discounts offered in the Letter of Price Bid, is specified in Section 3 (Evaluation and Qualification Criteria).
- 36.5 If the Bid, which results in the lowest evaluated Bid Price, is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.
- 37. Comparison of Bids** 37.1 The Employer shall compare all substantially responsive Bids to determine the lowest evaluated bid, in accordance with ITB 36.2.

- 38. Employer's Right to Accept Any Bid, and to Reject Any or All Bids** 38.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

F. Award of Contract

- 39. Award Criteria** 39.1 The Employer shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.
- 40. Notification of Award** 40.1 Prior to the expiration of the period of bid validity, the Employer shall notify the successful Bidder, in writing, that its Bid has been accepted.
- 40.2 At the same time, the Employer will publish in an English language newspaper or well-known freely accessible website the results identifying the bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) Bid Prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. After publication of the award, unsuccessful bidders may request in writing to the Employer for a debriefing seeking explanations on the grounds on which their bids were not selected. The Employer shall promptly respond in writing to any unsuccessful Bidder who, after Publication of contract award, requests a debriefing.
- 40.3 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.
- 41. Signing of Contract** 41.1 Promptly after notification, the Employer shall send the successful Bidder the Contract Agreement.
- 41.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.
- 42. Performance Security** 42.1 Within twenty-eight (28) days of the receipt of notification of award from the Employer, the successful Bidder shall furnish the performance security in accordance with the conditions of contract, subject to ITB 36.5, using for that purpose the Performance Security Form included in Section 9 (Contract Forms), or another form acceptable to the Employer.
- 42.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security or execution of the Bid Securing Declaration. In that event the Employer may award the Contract

to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.

42.3 The above provision shall also apply to the furnishing of a domestic preference security if so required.

Section 2 – Bid Data Sheet

Section 2 - Bid Data Sheet

This section consists of provisions that are specific to each stage of procurement and supplement the information or requirements included in Section 1. Instructions to Bidders.

A. General

ITB 1.1	The number of the Invitation for Bids is: BUIDCo/BUDIP/ICB/01
ITB 1.1	The Employer is: State of Bihar, acting through its Urban Development and Housing Department, in turn acting through the Bihar Urban Infrastructure Development Corporation Ltd
ITB 1.1	The name of the ICB is: Rehabilitation, Construction, Operation, Maintenance and Management of Bhagalpur Water Supply Project 1 (BWSP1) The identification number of the ICB is: BH/WS/01 The number and identification of lots comprising this ICB is: One
ITB 2.1	The Borrower is: India
ITB 2.1	The name of the Project is: ADB Loan No. 2861-IND; Bihar Urban Development Investment Program - Project 1

B. Contents of Bidding Documents

ITB 7.1	For <u>clarification purposes</u> only, the Employer's address is: Attention: Mr. A.K. Sharma, Chief General Manager, BUIDCo, 3 rd floor, Maurya Tower, Mauryalok Complex, Budh Marg City: Patna ZIP Code: 800001 Bihar Country: India Tel: +91612-2210101/02 Facsimile number: +91612- 2210103 Electronic mail address: cgmbuidco@gmail.com
ITB 7.4	A Pre-Bid meeting will take place at the Conference Hall of BUIDCo at 1100 hrs on 12 th September 2013. A Site visit conducted by the Employer will be organized at 1200 hrs on 13 th September 2013.

C. Preparation of Bids

ITB 10.1	The language of the bid is: English
ITB 11.2 (g)	The Bidder shall submit with its Technical Bid the following additional documents: (1) A valid JV Agreement legally notarized or attested by an appropriate authority in the bidders' home country, or a formal Letter of Intent to enter into a JV Agreement if applicable, specifying the financial stakes of each of the joint venture partners.
ITB 11.3 (d)	The Bidder shall submit with its Price Bid the following additional documents: NA.
ITB 13.1	Alternative bids shall not be permitted.
ITB 13.2	Alternative times for completion shall not be permitted.
ITB 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: None .
ITB 14.5	The prices quoted by the Bidder shall be: subject to price adjustment .
ITB 14.7	Additional Provision:

	The Employer will issue a certificate under GOI notification No. 108/95 and 84/97 which will assist the Contractor to obtain any lawful exemptions from payment of Excise Duty or Import Duty on Plant and Materials, which are to be incorporated as a part of the Permanent Works. The Certificate will be issued in the format indicated in Section 9, which certifies the estimated quantities of Materials that are to be incorporated into the Permanent Works. The responsibility for obtaining any such exemptions from a Competent Authority will remain with the supplier/ Contractor and the Employer shall not in any way be responsible for admissibility of the claims or eligibility of the supplier/ Contractor.
ITB 15.1	The unit rates and the prices shall be quoted by the bidder entirely in: Indian Rupees and up to three foreign currencies of their choice.
ITB 15.4	The rates of exchange shall be the selling rates 28 days prior to the deadline for submission of bids published by: Reserve Bank of India.
ITB 18.1	The bid validity period shall be 120 days.
ITB 19.1	A Bid Security shall be required. Bid Securing Declaration shall not be accepted. The amount and currency of the Bid Security shall be: INR 40 million or US \$ 800,000.
ITB 20.1	In addition to the original bid, the number of copies is: One.
ITB 20.2	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: (a) for a single entity, it shall consist of Power Of Attorney containing name, position held and signature of authorized person; or (b) in case of a JV or proposed JV, the Power of Attorney for authorization shall be issued in the name of a nominated representative who shall have the authority to sign and conduct all business for and on behalf of the JV during contract execution.

D. Submission and Opening of Bids

ITB 22.1	For bid submission purposes only, the Employer's address is: Attention: Mr. Anupam Kumar Suman, Managing Director, BUIDCo, 3 rd floor, Maurya Tower, Mauryalok Complex, Budh Marg City: Patna ZIP Code: 800001 Bihar Country: India Tel: 0612-2210101/02 The deadline for bid submission is: Date: 10 th October 2013 Time: 1500 hours
ITB 25.1	The opening of the Technical Bid shall take place at/on: Conference Hall, office of BUIDCo, 3 rd floor, Maurya Tower, Mauryalok Complex, Budh Marg City: Patna ZIP Code: 800001 Bihar Country: India Date: 10 th October 2013 Time: 15:30 hours

E. Evaluation and Comparison of Bids

ITB 34.1	The currency that shall be used for bid evaluation and comparison purposes to convert all Bid Prices expressed in various currencies into a single currency is: Indian Rupees. The source of selling exchange rate shall be: Reserve Bank of India. The date for the selling exchange rate shall be: 28 days prior to the deadline for submission of bids.
ITB 35.1	A margin of preference shall not apply.

Section 3 - Evaluation and Qualification Criteria

Section 3 - Evaluation and Qualification Criteria - Without Prequalification -

This Section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders. In accordance with ITB 32 and ITB 36, no other methods, criteria and factors shall be used. The Bidder shall provide all the information requested in the forms included in Section 4 (Bidding Forms).

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1. Evaluation

In addition to the criteria listed in ITB 36.2 (a) – (e) the following criteria shall apply:

1.1. Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing as well as operations, maintenance and management in sufficient detail and fully in accordance with the requirements stipulated in Section 6 (Employer's Requirements).

Non-compliance with equipment and personnel requirements described in Section 6 (Employer's Requirements) may not be grounds for bid rejection, but such non-compliance will be subject to clarification and rectification prior to contract award..

1.2. Multiple Contracts

Pursuant to Sub-Clause 36.4 of the Instructions to Bidders, if Works are grouped in multiple contracts, evaluation will be as follows: Not applicable.

1.3. Completion Time

An alternative Completion Time, if permitted under ITB 13.2, will be evaluated as follows: Not applicable.

1.4. Technical Alternatives

Technical alternatives, if permitted under ITB 13.4, will be evaluated as follows: Not applicable.

1.5. Quantifiable Nonconformities, Errors and Omissions

The evaluated cost of quantifiable nonconformities, errors and/or Omissions are determined as follows:

Pursuant to ITB 31.3, the cost of all quantifiable nonmaterial nonconformities or Omissions shall be evaluated. The Employer will make its own assessment of the cost of any nonmaterial nonconformities and Omissions for the purpose of ensuring fair comparison of bids.

1.6. Domestic Preference

If a margin of preference shall apply under ITB 35.1, the procedure will be as follows: Not applicable.

2. Qualification

Unless specifically indicated otherwise, it is the legal entity or entities comprising the Bidder, and not the Bidder's parent companies, subsidiaries or affiliates, that must satisfy the qualification criteria described below.

2.1. Eligibility

Criteria	Compliance Requirements			Documents
Requirement	Single Entity	Joint Venture		Submission Requirements
		All Partners Combined	Each Partner	

2.1.1. Nationality

Nationality in accordance with ITB Sub-Clause 4.2.	must meet requirement	must meet requirement	must meet requirement	not applicable	Forms ELI – 1, ELI – 2 with attachments
--	-----------------------	-----------------------	-----------------------	----------------	---

2.1.2. Conflict of Interest

No conflicts of interest in accordance with ITB Sub-Clause 4.3.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Technical Bid
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2.1.3. ADB Eligibility

Not having been declared ineligible by ADB, as described in ITB Sub-Clause 4.4.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Technical Bid
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2.1.4. Government-owned Entity

Bidder required to meet conditions of ITB Sub-Clause 4.5.	must meet requirement	must meet requirement	must meet requirement	not applicable	Forms ELI – 1, ELI – 2 with attachments
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2.1.5. UN Eligibility

Not having been excluded by an act of compliance with UN Security Council resolution in accordance with ITB Sub-Clause 4.7.	must meet requirement	must meet requirement	must meet requirement	not applicable	Letter of Technical Bid
---	-----------------------	-----------------------	-----------------------	----------------	-------------------------

2.2. Pending Litigation

Pending Litigation criterion shall apply.

Criteria	Compliance Requirements			Documents
Requirement	Single Entity	Joint Venture		Submission Requirements
		All Partners Combined	Each Partner	

2.2.1. Pending Litigation

All pending litigation shall be treated as resolved against the Bidder and so shall in total not represent more than 50 percent of the Bidder's net worth - calculated as the difference between total assets and total liabilities, which should be positive.	must meet requirement by itself or as partner to past or existing JV	not applicable	must meet requirement by itself or as partner to past or existing JV	not applicable	Form LIT - 1
--	--	----------------	--	----------------	--------------

2.3. Financial Situation

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
2.3.1. Historical Financial Performance					
Submission of audited financial statements or, if not required by the Laws of the Bidder's country, other financial statements acceptable to the Employer, for the last 3 (three) years to demonstrate the current soundness of the Bidder's financial position. As a minimum, the Bidder's net worth for the last year calculated as the difference between total assets and total liabilities should be positive.	must meet requirement	not applicable	must meet requirement	not applicable	Form FIN - 1 with attachments
2.3.2. Average Annual Construction Turnover					
Minimum average annual construction turnover of INR 1150 million (equivalent US\$ 23 million) calculated as total certified payments received for contracts in progress or completed, within the last three years.	must meet requirement	must meet requirement	must meet 25% of the requirement	must meet 40% of the requirement	Form FIN - 2
2.3.3. Financial Resources					
Using Forms FIN – 3 and FIN - 4 in Section 4 (Bidding Forms), the Bidder must demonstrate access to, or availability of, liquid assets ^a , lines of credit, or other financial resources (other than any contractual advance payments) to meet the Bidder's financial resources requirement indicated in Form FIN-4.	must meet requirement	must meet requirement	must meet 25% of the requirement	must meet 40% of the requirement	Form FIN – 3 & FIN – 4

^a *Liquid Assets mean cash and cash equivalents, short-term financial instruments, short term available-for-sale-securities, marketable securities, trade receivables, short-term financing receivables and other assets that can be converted into cash within ONE YEAR.*

2.4. Construction and Operations Experience

2.4.1. Contracts of Similar Size and Nature

Criteria	Compliance Requirements				Documents
	Single Entity	Joint Venture All Partners Combined	Each Partner	One Partner	Submission Requirements
<p>Participation as Contractor or Sub-Contractor or Management Contractor in at least two water supply works contracts each with a minimum value of INR 1600 million (equivalent US\$ 32 million) within the last seven years that are similar to the proposed Works and have been successfully or substantially completed.</p> <p><i>The similarity of the Bidder's participation shall be based on the physical size, nature of works, complexity, methods, technology or other characteristics as described in Section 6, Employer's Requirements.</i></p>	must meet requirement	<p>must meet requirement as follows: Either one partner must meet requirement Or any two partners must each demonstrate one (1) successfully or substantially completed contract of similar size and nature</p>	not applicable	not applicable	Form EXP - 1(a)

2.4.2. Construction and Operations Experience in Key Activities (May be complied by Specialist Sub-contractors. Employer shall require evidence of subcontracting agreement from the Bidder.)

Criteria	Compliance Requirements				Documents
	Single Entity	Joint Venture			
Requirement			All Partners Combined	Each Partner	One Partner
For the above or other contracts executed during the period stipulated in 2.4.1 above, a minimum Construction and Operations Experience as Contractor or Sub-Contractor or Management Contractor or Water Utility Operations Company in Key Activities, as follows:	must meet all requirements	must meet all requirements	not applicable	not applicable	Form EXP - 1(b)
Planning and design of a water supply distribution scheme, including DMAs and pressure management, to provide continuous, pressurized (24x7) water supply to at least 20,000 household connections within the last seven years	must meet all requirements	must meet all requirements	not applicable	not applicable	
Providing, laying, jointing, testing and commissioning of water pipelines of length 100 km in a period of three years over the last seven years	must meet all requirements	must meet all requirements	not applicable	not applicable	Form EXP - 1(b)
Construction of 6 nos (Six) Overhead Tanks (OHTs) with a minimum total capacity of 7.5 ML in a period of three years over the last seven years	must meet all requirements	must meet all requirements	not applicable	not applicable	Form EXP - 1(b)
Operating, maintaining and managing a water	must meet all requirements	must meet all requirements	not applicable	not applicable	Form EXP-1 (b)

supply distribution scheme with at least 20,000 household connections with continuous, pressurized (24x7) water supply for at least two years over the last seven years					
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Section 4 - Bidding Forms

Section 4 - Bidding Forms
- Without Prequalification -

This Section contains the forms which are to be completed by the Bidder and submitted as part of his Bid.

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Letter of Technical Bid

Date:

ICB No.: BH/WS/01

Invitation for Bid No.: BUIDCo/ICB/01

To,

Managing Director, BUIDCo,

3rd Floor Maurya Tower, Mauryalok Complex, Budh Marg

City: Patna ZIP Code: 800001 Bihar

Country: India

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8;
- (b) We offer to execute in conformity with the Bidding Documents the following Works: **Rehabilitation, Construction, Operation, Maintenance and Management of Bhagalpur Water Supply Project 1 (BWSP 1)**;
- (c) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of 120 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) Our firm, including any sub-contractors or suppliers for any part of the Contract, have nationalities from eligible countries [insert the nationality of the Bidder, including that of all parties that comprise the Bidder if the Bidder is a consortium or association, and the nationality of each Sub-contractor and Supplier];
- (e) We, including any sub-contractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3;
- (f) We are not participating, as a Bidder or as a sub-contractor, in more than one bid in this bidding process in accordance with ITB 4.3(e), other than alternative offers submitted in accordance with ITB 13;
- (g) Our firm, its affiliates or subsidiaries, including any Sub-contractors or Suppliers for any part of the contract, has not been declared ineligible by ADB, under the Employer's country Laws or official regulations or by an act of compliance with a decision of the United Nations Security Council;
- (h) We are not a government owned entity / We are a government owned entity but meet the requirements of ITB 4.5; *
- (i) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB;

- (j) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in Section 6 (Employer's Requirements) and our technical proposal, or as otherwise agreed with the Employer.

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

* *Use one of the two options as appropriate.*

Letter of Price Bid

Date:

ICB No.: BH/WS/01

Invitation for Bid No.: BUIDCo/ICB/01

To,

Managing Director, BUIDCo,

3rd Floor Maurya Tower, Mauryalok Complex, Budh Marg

City: Patna ZIP Code: 800001 Bihar

Country: India

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8;
- (b) We offer to execute in conformity with the Bidding Documents and the Technical Bid submitted for the following Works: Rehabilitation, Construction, Operation, Maintenance and Management of Bhagalpur Water Supply Project (BWSP1);
- (c) The total price of our Bid, excluding any discounts offered in item (d) below is: --

- (d) The discounts offered and the methodology for their application are: -----
- (e) Our Bid shall be valid for a period of 120 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (f) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;
- (g) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: *

Name of Recipient	Address	Reason	Amount

- (h) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive;

- (j) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

* *If none has been paid or is to be paid, indicate “none”*

Bid Security

Bank Guarantee

Bank's Name, and Address of Issuing Branch or Office

Beneficiary: Bihar Urban Infrastructure Development Corporation Limited, (a Government of Bihar undertaking)

Date:

Bid Security No.:

We have been informed that *name of the Bidder*. (hereinafter called "the Bidder") has submitted to you its bid dated (hereinafter called "the Bid") for the execution of *name of contract* under Invitation for Bids No. ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we *name of Bank*. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *amount in figures* (. *amount in words*) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Letter of Technical Bid and Letter of Price Bid; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB or (iii) fails or refuses to furnish a domestic preference security, if required.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy your notification to the Bidder of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

. *Bank's seal and authorized signature(s)*

Note: All italicized text is for use in preparing this form and shall be deleted from the final document

Technical Proposal

Personnel

Equipment

Site Organization

Method Statement

Mobilization Schedule

Construction Schedule

Asset Replacement Schedule

Others

Personnel

Form PER – 1: Proposed Personnel

Bidder shall provide the details of the proposed personnel and their experience records in the relevant Information Forms below for each candidate:

1.	Title of position*
	Name
2.	Title of position*
	Name
3.	Title of position*
	Name
4.	Title of position*
	Name
5.	Title of position*
	Name
6.	Title of position*
	Name
etc.	Title of position*
	Name

*As listed in Section 6 (Employer’s Requirements).

Equipment

Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer’s Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment					
Equipment Information	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; padding: 5px;">Name of manufacturer</td> <td style="padding: 5px;">Model and power rating</td> </tr> <tr> <td style="padding: 5px;">Capacity</td> <td style="padding: 5px;">Year of manufacture</td> </tr> </table>	Name of manufacturer	Model and power rating	Capacity	Year of manufacture
	Name of manufacturer	Model and power rating			
Capacity	Year of manufacture				
Current Status	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Current location</td> </tr> <tr> <td style="padding: 5px;">Details of current commitments</td> </tr> </table>	Current location	Details of current commitments		
Current location					
Details of current commitments					
Source	Indicate source of the equipment <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured				

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

Site Organization

(Note: Evaluation of the Bidder's Site Organization will include an assessment of the Bidder's capacity to mobilize key personnel for the Contract consistent with its proposal regarding work methods, scheduling, and material sourcing as well as operations, maintenance and management in sufficient detail and fully in accordance with the requirements stipulated in Section 6 (Employer's Requirements)).

Method Statement

Mobilization Schedule

Construction Schedule

(Note: Evaluation of the Bidder's Construction Schedule will include an assessment of the Bidder's technical capacity to mobilize equipment for the Contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section 6 (Employer's Requirements)).

Asset Replacement Schedule

(Subject to the provisions of Sub-Clause 14.5 and 14.18 of Section 7 General Conditions of Contract)

Bidder's Qualification

To establish its qualifications to perform the contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

Form ELI - 1: Bidder's Information Sheet

Bidder's Information	
Bidder's legal name	
In case of JV, legal name of each partner	
Bidder's country of constitution	
Bidder's year of constitution	
Bidder's legal address in country of constitution	
Bidder's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	
<p>Attached are copies of the following original documents.</p> <p><input type="checkbox"/> 1. In case of single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and 4.2.</p> <p><input type="checkbox"/> 2. Authorization to represent the firm or JV named in above, in accordance with ITB 20.2.</p> <p><input type="checkbox"/> 3. In case of JV, letter of intent to form JV or JV Agreement, in accordance with ITB 4.1.</p> <p><input type="checkbox"/> 4. In case of a government-owned entity, any additional documents not covered under 1 above required to comply with ITB 4.5.</p>	

Form ELI - 2: JV Information Sheet

Each member of a JV must fill in this form.

JV / Specialist Sub-contractor Information	
Bidder's legal name	
JV Partner's or Sub-contractor's legal name	
JV Partner's or Sub-contractor's country of constitution	
JV Partner's or Sub-contractor's year of constitution	
JV Partner's or Sub-contractor's legal address in country of constitution	
JV Partner's or Sub-contractor's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)	
<p>Attached are copies of the following original documents.</p> <p><input type="checkbox"/> 1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and 4.2.</p> <p><input type="checkbox"/> 2. Authorization to represent the firm named above, in accordance with ITB 20.2.</p> <p><input type="checkbox"/> 3. In the case of government-owned entity, documents establishing legal and financial autonomy and compliance with _____ commercial law, in accordance with ITB 4.5.</p>	

Form LIT – 1: Pending Litigation

Each Bidder or member of a JV must fill in this form if so required under Criterion 2.2 of Section 3 (Evaluation and Qualification Criteria).

Pending Litigation			
<input type="checkbox"/> No pending litigation <input type="checkbox"/> Below is a description of all pending litigation involving the Bidder (or each JV member if Bidder is a Joint Venture).			
Year	Matter in Dispute	Value of Pending Claim in US\$ Equivalent	Value of Pending Claim as a Percentage of Net Worth

Form FIN - 1: Historical Financial Performance
 Each Bidder or member of a JV must fill in this form.

Financial Data for Previous Years [US\$ Equivalent]		
Year 1:	Year 2:	Year __:

Information from Balance Sheet

Total Assets			
Total Liabilities			
Net Worth			
Current Assets			
Current Liabilities			

Information from Income Statement

Total Revenues			
Profits Before Taxes			
Profits After Taxes			

- Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last _____ years, as indicated above, complying with the following conditions.
- Unless otherwise required by Section 3 of the Bidding Document, all such documents reflect the financial situation of the legal entity or entities comprising the Bidder and not the Bidder’s parent companies, subsidiaries or affiliates.
 - Historic financial statements must be audited by a certified accountant.
 - Historic financial statements must be complete, including all notes to the financial statements.
 - Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Form FIN - 2: Average Annual Construction Turnover

Each Bidder or member of a JV must fill in this form.

The information supplied should be the Annual Turnover of the Bidder or each member of a JV in terms of the amounts billed to clients for each year for work in progress or completed, converted to INR at the rate of exchange at the end of the period reported.

Annual Turnover Data for the Last 3 Years (Construction only)			
Year	Amount Currency	Exchange Rate	INR Equivalent
Average Annual Construction Turnover			

Form FIN – 3: Availability of Financial Resources

Specify proposed sources of financing, such as liquid assets¹, lines of credit, and other financial resources, other than any contractual advance payments available to meet the financial requirements of the subject contract or contracts, and the Bidder's current work commitments as indicated in Section 3 (Evaluation and Qualification Criteria).

Financial Resources		
No.	Source of financing	Amount (US\$ equivalent)
1		
2		
3		

¹ *Liquid Assets mean cash and cash equivalents, short-term financial instruments, short term available-for-sale-securities, marketable securities, trade receivables, short-term financing receivables and other assets that can be converted into cash within one year.*

Form FIN- 4: Financial Resources Requirement

The Bidder (or each JV partner) should provide information indicated below in order to calculate the aggregated financial resources requirement. This requirement equals the sum of: (i) the Bidder's (or each JV partner's) current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued; and (ii) financial resources requirement for subject contract as determined by the Employer. The Bidder must also disclose any other financial obligations that could materially affect the implementation of subject contract if such contract were to be awarded to the Bidder.

Financial Resources Requirement						
	Name of Contract	Employer's Contact (Address, Tel, Fax)	Contract Completion Date	Remaining Contract Period in months (A) ¹	Outstanding Contract Value (B) ²	Monthly Financial Resources Requirement (B / A)
1						
2						
3						
4						
A. Cumulative Financial Resources Requirement for Current Contract Commitments ³						US\$
B. Financial Resources Requirement for Subject Contract (Employer to specify)						US\$
Financial Resources Requirement (Sum of A and B)						US\$

¹ Remaining contract period to be calculated from 28 days prior to bid submission deadline.

² Remaining Outstanding Contract Values to be calculated from 28 days prior to the bid submission deadline (US\$ equivalent based on the foreign exchange rate as of the same date).

³ Bidder should calculate this amount based on the following formula: 2 x (Sum of Monthly Financial Resources Requirements for Each Current Works Contract).

Form EXP – 1(a): Contracts of Similar Size and Nature

Fill up one (1) form per contract.

Contract of Similar Size and Nature		
Contract No of	Contract Identification	
Award Date		Completion Date
Total Contract Amount	INR / US\$	
If partner in a JV or sub-contractor, specify participation of total Contract Amount	Percent of Total	Amount
Employer’s Name Address Telephone/Fax Number E-mail		
Description of the similarity in accordance with Criteria 2.4.1 of Section 3		

Form EXP - 1(b): Construction Experience in Key Activities

Fill up one (1) form per contract.

Contract with Similar Key Activities		
Contract No of	Contract Identification	
Award Date		Completion Date
Total Contract Amount	US\$	
If partner in a JV or sub-contractor, specify participation of total Contract Amount	Percent of Total	Amount
Employer's Name Address Telephone Number Fax Number E-mail		
Description of the key activities in accordance with Criteria 2.4.1 of Section 3		

Schedules

Schedule of Payment Currencies

For*insert name of Section of the Works*

Separate tables may be required if the various sections of the Works (or of the Bill of Quantities) will have substantially different foreign and local currency requirements. In such a case, the Employer should prepare separate tables for each Section of the Works.

	A	B	C	D
Name of Payment Currency	Amount of Currency	Rate of Exchange to Local Currency	Local Currency Equivalent $C = A \times B$	Percentage of Net Bid Price (NBP) $\frac{100 \times C}{NBP}$
Local currency		1.00		
Foreign Currency #1				
Foreign Currency #2				
Foreign Currency #3				
Net Bid Price				100.00
Provisional Sums Expressed in Local Currency	170,000,000	1.00		
BID PRICE				

- Note -

The rates of exchange shall be the selling rates 28 days prior to the deadline for submission of bids published by the source specified in BDS 15.

Tables of Adjustment Data**Table A - Local Currency****Table A.1 - For Payment of Design-Build Works:**

Index Code	Index Description	Source of Index	Base Value and Date	Local Currency Amount	Weighting
a	Nonadjustable	—	—	—	a: 0.15
b	Labor Component: Consumer Price Index for Industrial Workers for Bihar	Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of Works	b: 0.25
c	Cement Component: Cement (Sub-Group Nonmetallic mineral Products)	Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of Works	c: 0.10
d	Steel Component: Iron & Steel (Sub-Group Basic Metals Alloys & Metals Products)	Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of Works	d: 0.25
e	Other Materials Component: Wholesale Price Index (All commodities)	Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of Works	e: 0.25
Total					1.00

Table A.2 – Payment for Operation Service:

Index Code	Index Description	Source of Index	Base Value and Date	Local Currency Amount	Weighting
—	Nonadjustable	—	—	—	a: 0.15
b	Wholesale Price Index (All commodities)	Reserve Bank of India	Indices applicable on 28 days prior to deadline for bid submission	As per cost of Works	b: 0.85
Total					1.00

Table B - Foreign Currency**Name of Currency:**

If the Bidder wishes to quote in more than one foreign currency, this table should be repeated for each foreign currency.

Index Code	Index Description	Source of Index	Base Value and Date	Bidder's Currency in Type/Amount	Equivalent in FC1	Bidder's Proposed Weighting
	Nonadjustable	—	—	—		A: <u>0.15</u> _____ B: ____ C: ____ D: ____ E: ____
Total						1.00

Technical Schedule
(To be completed by the Bidder)

1.0 Introduction

Technical Schedules cover only the few technical details of equipment offered by the bidder.

1.1 Clear Water Pumps – Horizontal Centrifugal

S. No.	Description	Unit	Particulars
(a)	General		
	(i) Make		
	(ii) Model		
	(iii) Quantity	Nos.	
	(iv) Type		
(b)	Performance		
	(i) Capacity	cum/hr	
	(ii) Total Head (at duty point)	mwc	
	(iii) WHP at total head	kW	
	(iv) Efficiency at duty point (without negative tolerance)	%	
	(v) Power Input to pump shaft at duty point (at 50Hz for single pump operation)	kW	
	(vi) Power Losses in followings:		
	a. Losses in coupling	kW	
	b. Thrust bearing losses	kW	
	(vii) Total Power input to pump (including losses)	kW	
	(viii) Motor Efficiency at Duty Point (without negative tolerance)	%	
	(ix) Guaranteed K.W.I. to Motor		
	(x) Overall Efficiency		
	(xi) Speed	rpm	
	(xii) Specific Speed		
	(xiii) Shut Off Head	m	
	(xiv) Run Out Head	m	
	(xv) NPSH required	m	
	(xvi) Submergence Required	m	
	(xvii) Wr^2 with entrained water	kg-m ²	
	(xviii) Suction / discharge size	mm/mm	
	(ix) Type of Pump Lubrication		
(c)	Construction		
	(i) Type of Impeller (enclosed / semi open/open)		
	(ii) No. of Impeller vanes	Nos.	
	(iii) Impeller Diameter	mm	

S. No.	Description	Unit	Particulars
	(iii) Stuffing box sealing liquid		
	(iv) Surface hardness of shaft sleeve	BHN	
	(v) Suction / discharge	mm/mm	
	(vi) Weight	Kg	
(d)	Materials of Construction		
	(i) Impeller		
	(ii) Casing		
	(iii) Shaft		
	(iv) Casing Wear Ring		
	(v) Impeller Wear Ring		
	(vi) Shaft Sleeve		
	(vii) Stuffing box packing		
	(vii) Mechanical Seal		
	(viii) Base Plate		
(e)	Testing and Inspection		
	(i) Pump Performance testing Standard		
(f)	Performance		
	(i) Maximum velocity of vibration	mm/sec	
	(ii) Maximum noise level	dB(A)	

1.2 Air Blowers

S. No.	Item	Description	Unit	Particulars
(a)	(i)	Manufacturer		
	(ii)	Type		
	(iii)	Model No.		
	(iv)	Quantity	Nos.	
	(v)	Capacity at NTP	m ³ /min	
	(vi)	Pressure	Mm WC	
	(vii)	Actual Speed, blower	rpm	
	(viii)	Mechanical Efficiency	%	
	(ix)	Volumetric Efficiency	%	
	(x)	BKW	kW	
	(xi)	Transmission Losses	kW	
	(xii)	Absorbed power	kW	
	(xiii)	Motor rating	kW	
	(xiv)	Motor Efficiency at duty point	%	
	(xv)	Power Input to motor	kW	
	(xvi)	Speed, motor	rpm	
	(xvii)	Motor make		
	(xviii)	Power Factor		
	(xix)	Noise level at Duty Point in dB(A) at 1 m from the unit	dB(A)	
		• With Acoustic Hood	dB(A)	
		• Without Acoustic Hood	dB(A)	
	(xx)	Vibration	mm/sec	
	(xxi)	GD ² Value of rotor		
	(xxii)	Starting Torque		
(xxiii)	Static Load	Kg		
(xxiv)	Dynamic Load	Kg		
(b)		Materials of construction:		
	(i)	Casing		
	(ii)	Impeller/Lobes		
	(iii)	Shaft		
	(iv)	Common Base frame		
	(v)	Orientation		
(c)		Acoustics Hood:		
	(i)	Type		
	(ii)	Materials of Construction		
	(iii)	Weight – Blower	kgs	

S. No.	Item	Description	Unit	Particulars
	(iv)	Maximum lifting weight	kgs	
	(v)	Dimensions (L x W x H)	m	
	(vi)	Coupling Type		
	(vii)	Make		
(d)		Outlet silencer		
	(i)	Type		
	(ii)	Manufacturer		
	(iii)	Filter media		
	(iv)	Mean air velocity	m/s	
(e)		Noise reduction (mean) Air release valves		
	(i)	Number		
	(ii)	Diameter	mm	
	(iii)	Type		
	(iv)	Set pressure	bar	
	(v)	Manufacturer		
(f)		Delivery non-return valves		
	(i)	Number		
	(ii)	Diameter	mm	
	(iii)	Type		
	(iv)	Manufacturer		
(g)		Delivery isolation valves		
	(i)	Number		
	(ii)	Diameter	mm	
	(iii)	Type		
	(iv)	Manufacturer		

1.3 Chemical Dosing & Metering Pumps

S. No.	Item Description	Unit	Particulars
(a)	Manufacturer		
(b)	Type		
(c)	Quantity	nos	
(d)	Model		
(e)	Capacity max/min	l/s	
(f)	Pressure	kg/cm ²	
(g)	Stroke adjustment	mm	
(h)	Stroking speed max/min	spm	
(i)	Pump Efficiency	%	
(j)	Power Input to Pump Shaft	kW	
(k)	Shaft, Coupling, Bearing and transmission Losses	kW	
(l)	Total kW input to pump Including losses	kW	
(m)	Motor Rating	kW	
(n)	Motor Efficiency	%	
(o)	Power Input to Motor	kW	
(p)	NPSHr	m	
(q)	Submergence Required	m	
(r)	Materials of Construction:		
	Casing material		
	Diaphragm material		
	Shaft material		
(s)	Motor Make		

1.4 Alum/Lime Preparation Agitator

S. No.	Item Description	Unit	Particulars
(a)	Manufacturer		
(b)	Model		
(c)	Type		
(d)	Quantity	Nos.	
(e)	Motor rating	kW	
(f)	Motor speed	rpm	
(g)	Mixer speed	rpm	
(h)	Impeller material		
(i)	Shaft material		
(j)	Solids recovery		

1.5 Electric Induction Motor

Note: The data for each type of motor (i.e. for centrifugal horizontal pumps, air blower etc. are to be provided separately

S. No.	Description	Unit	Particulars
(a)	Make		
(b)	Model/ Type Designation		
(c)	Rating	kW	
(d)	Speed	rpm	
(e)	Type of Starter		
(f)	Efficiency (without negative tolerance)		
	<ul style="list-style-type: none"> • At Full Load • At Duty Point • At $\frac{3}{4}$ Load • At $\frac{1}{2}$ Load 	% % % %	
(g)	Power Factor		
	<ul style="list-style-type: none"> • At Full Load • At Duty Point • At $\frac{3}{4}$ Load • At $\frac{1}{2}$ Load 		
(h)	Class of Insulation		
(i)	Temperature rise by resistance method	°C	
(j)	Type of enclosure		
(k)	Degree of protection		
(l)	Weight	kg	
(m)	Particulars at rated voltage and frequency :		
	Starting time	Sec.	

S. No.	Description	Unit	Particulars
	Starting Current	% FL	
	Full Load Current		
	Pull-out torque	% FLT	
	Pull-up torque	% FLT	
(n)	Minimum voltage required under starting conditions to accelerate driven equipment to rated speed.	Volts	
(o)	Locked rotor current withstand time (safe stall time) at 110% rated voltage		
	At rated temp. (Hot)	Sec.	
	When cold	Sec.	
(p)	Starts per Hour		
	Permissible no. of equally spread starts per hour under normal service conditions	No.	
	Permissible no. of starts in quick succession with cold machine at room temperature	No.	
	Permissible no. of hot restarts	No.	
(q)	Space Heaters :		
	Rated voltage, no. and location	Volts	
	Rating (Total)	KW	
(r)	Embedded temperature detectors		
	Make & Type		
	Number		
	Resistance at 0° C	Ohm	
(s)	Stator core temperature detectors		
	Type and Make		
	Number		
	Resistance at 0° C	Ohm	
(t)	Permissible vibration limits	mm/sec	
(u)	Wr ² Value	kg-m ²	
(v)	Motor bearings		
	Permissible temperature rise for bearings		
	Design ambient temperature assumed for above		
(w)	Motor bearing lubrication system self-lubrication / forced oil lubrication		

S. No.	Description	Unit	Particulars
(x)	Total guaranteed losses comprising iron loss, copper loss, friction, windage and stray losses		
	Break up : Iron loss	kW	
	Copper loss	kW	
	Friction, windage and stray losses	kW	
(y)	Space Heaters :		
	Rated voltage, no. and location	Volts	
	Rating (Total)	KW	

1.6 33kV / 0.433kV Transformers

Sr. No.	Description	Unit	Particulars
1	Make		
2	Applicable standards		
3	Type/Designation		
4	Full load rating	MVA	
	Rated no-load voltages	HV	kV
5		LV	kV
6	Guaranteed impedance voltage at rated current for all taps	%	
7	Guaranteed efficiency at 75 Deg C at unity P.F at full load		
8	External short circuit withstand capacity	MVA	
	Tappings on winding		
	On-load/off circuit taps		
9	Full power tapping range \pm	%	
10	On load tap changer		
(a)	Make		
(b)	Type designation		
11	Minimum clearance height for lifting core and windings from tank	mm	
12	Bushings:		
(a)	Rated voltage class		
(b)	Rated current	A	
(c)	Free space required at top for removal	mm	
13	Guaranteed no load losses (core loss and dielectric loss) at 100% rated voltage and frequency	kW	

14	Guaranteed no-load current:		
(a)	When excited from LV side at 100% rated voltage	A	
(b)	When excited from LV side at 110% rated voltage	A	
15	Wheels:		
(a)	Plain/flanged		
(b)	Unidirectional/bidirectional		
(c)	Quantity		
(d)	Gauge (s)		
16	Vacuum withstand capability:	mm of Hg.	
17	Weights		
(a)	Core winding assembly		
(b)	Oil	Kg	
(c)	Tank, Coolers and fittings	Kg	
(d)	Total	Kg	
(e)	Untanking weight	Kg	
18	Shipping section		
19	Size of largest package (L x B x H)	mm	
20	Weight of the largest package	Ton	
21	Hydraulic jack		
(a)	Make		
(b)	Type		
(c)	Number		
(d)	Capacity		
22	Bushing CTs		
(a)	Make		
(b)	Quantity		
(c)	Ratio		
23	General outline drawing enclosed with the tender showing the transformer with all its fittings and accessories in plan, front and side elevations and other details	Yes/No	
24	Whether GA Drawings/ Documents/ Literature / Catalogues etc. as per Volume-2, Part-2 enclosed with the bid	Yes/No	
25	Whether copies of type test certificates/ report as per the latest standards enclosed with the bid	Yes/No	
26	Whether copies of user's certificates enclosed with bid	Yes/No	
27	Whether all routine/type/acceptance tests will be carried out as specified (If not, furnish list)	Yes/No	

Bill of Quantities

A. Preamble to Bill of Quantities

1. The Bill of Quantities (BOQ) shall be read in conjunction with the Instructions to Bidders, General and Particular Conditions of Contract, Technical Specifications, and Drawings.
2. This preamble to the BOQ shall form part of the Contract. If there is inconsistency between the BOQ, Technical Specifications and Drawings and in case of conflict among different sections/heads, precedence shall be given in the following order of descending priority:
 - a) Bills of Quantities and Preamble to the Bills of Quantities;
 - b) Technical Specifications;
 - c) Drawings;
 - d) Relevant Indian or International Standards.
3. The quantities given in the BOQ are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Employer's Representative, and valued at the rates and prices bid in the priced BOQ, where applicable, and otherwise at such rates and prices as the Employer's Representative may fix within the terms of the Contract.
4. The rates and prices bid in the priced Bill of Quantities shall, except as otherwise provided under the Contract, include all construction equipment, labor, supervision, Materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
5. A rate or price shall be entered against each item, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other items, rates and prices entered in the BOQ.
6. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the Rates and Prices entered for the related Items of Work.
7. General directions and descriptions of work and Materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
8. Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with the Conditions of Contract.

9. The method of measurement of completed work for payment shall be in accordance to the respective procedures provided in the Technical Specifications or Particular Specifications under this Contract and in the absence of which shall be in accordance to the relevant BIS Standard and Standard Specification of the State of Bihar or Standard Specification published by the Central Public Works Department, Government of India as the case may be.
10. Arithmetic errors will be corrected by the Employer as follows:
 - a) if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
 - b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected;
 - c) if there is a discrepancy between the bid price in the Summary of Bill of Quantities and the bid amount in item (c) of the Letter of Bid, the bid price in the Summary of Bill of Quantities will prevail and the bid amount in item (c) of the Letter of Bid will be corrected; and
 - d) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a), (b) and (c) above.
11. Rock is defined as all material that, in the opinion of the Employer's Representative, require blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for their removal, and that cannot be extracted by ripping with a tractor of at least 150 brake horse power (BHP) with a single, rear-mounted, heavy-duty ripper.
12. Description of items in this BOQ is by itself not complete, and for a full description the BOQ should be read together with the Technical Specifications and Drawings. Rates quoted in the BOQ are deemed to have included all aspects covered in the Preamble and Technical Specifications, and all features and details shown in the Drawings.
13. The Bidder shall, in the course of studying the Contract Agreement, point out all his/her remarks on the documents and make all his/her queries to the Employer who will study these remarks and clarify any discrepancy between the Bidding Documents.
14. Submissions shall be strictly in accordance with the documents and shall not be qualified in any way. The Bidder shall not alter the text of the BOQ.
15. Bidders are instructed to quote "rates" for all items without fail both in figures and words in the columns provided. The rate quoted for any item is negotiable during the evaluation of the tender if found necessary. Any percentage of discount / rebate offered by the tenderer during negotiation is applicable on all the quoted rates of the tendered items.

16. For the evaluation process, if requested by the Evaluation Committee, the Contractor shall provide a sheet analysis for all priced items showing how the rate entered was derived.
17. The rates quoted shall be at the price levels at the time of bid submission and shall not contain any inflation provisions.
18. Price adjustment as stipulated in Schedule 5 – Contractor Payments, Particular Conditions of Contract shall apply on all items of works, Materials, and services executed under this BOQ and as approved in the SIP, from the date of submission of bid.
19. The rates shall be deemed to include all the cost of Works described in the Bidding Documents to operate, maintain and manage the water supply assets and services in Bhagalpur within the Barari Water Works and the distribution service area in Bhagalpur.
20. The Bidder shall satisfy himself/herself as to the meaning of every item in the BOQ. The rates and prices inserted in the BOQ by the bidder shall be deemed to cover all costs, taxes, customs and import duties, levies, profits, risks, liabilities, insurance and obligations set forth or implied in the bid, as well as proper operation, maintenance and management of the Works including, but not limited to the following:
 - (i) All labor and Materials including consumables;
 - (ii) All temporary work of every description required including over ground pumping and other requirements to avoid disruption to the service whilst maintenance or repair work is carried out;
 - (iii) The provision and use of all equipment, tools and Plant of every kind, whether mechanical or non-mechanical, required for the expeditious carrying out of the Works in their proper sequence;
 - (iv) Provision for scaffolding, staging, guard rails, temporary stairs, temporary access during execution, approach roads up to the Site for the movement of vehicles, and heavy excavation machinery with supporting transport facility;
 - (v) Provision for excavation, back-filling, bringing to the Site extra fill for back-fill, making good and reinstating surfaces, disposing of surplus material, dealing with all ground water and wastewater flows, and for work in close proximity to other utility apparatus including protecting that apparatus;
 - (vi) Provision for work on pipe line corridors such as traffic control measures, safety barriers, obtaining any approvals and permits from authorities, and signage and reinstatement of surfaces;
 - (vii) Cooperation and coordination of the work with related authorities, other contractors and utilities, including obtaining their permission before starting the related Works if required; and
 - (viii) Providing security arrangements to guard the Site and premises at all times and to maintain strict control on the movement of Materials and labor until the completion of the work.

21. The production charge(s) and the distribution charge quoted by the Bidder in the BOQ shall include the safe disposal of material like sludge, debris, silt and all such waste material generated during operations and provision of services.
22. All electricity costs associated with operations shall be paid by BMC directly to the electricity service provider.
23. Works itemized in the BOQ will be subject to measurement. Such measurement will be in the unit of measurement shown the BOQ and payment shall be made on the measured quantities.
24. Any item of work which is specified and required for the proper operation, maintenance and management of Works, and not included or itemized in the BOQ, shall not be measured nor paid for separately but shall be deemed to have been allowed for by the Contractor as part of their Price Bid.
25. All rules and regulations of the labor department, contract labor Laws, provident fund and employee state insurance and connected Laws, and all other Laws of the land are to be complied with by the Bidder within the quoted rates.
26. The bidder is expected to inspect the Site to investigate the following items before quoting their rates in the tender:
 - a) Nature and type of soil proposed for excavation and safety of excavation;
 - b) Availability of power for execution;
 - c) Availability of water for execution;
 - d) Means of disposal of storm water/bailing out water from the Site;
 - e) Means of disposal of water due to de-watering at the Site;
 - f) Nature and type of protection required for neighboring property to ensure full safety during construction activities in progress; and
 - g) Place for disposal of serviceable / unserviceable material obtained during construction activities in progress.
27. No land will be provided by the Employer to the Contractor for constructing any structure for his labor, workman and supervisory camps, un-authorized hutments, canteen or teashops at the Site or within the premises. The Contractor shall make his/her own arrangements for the same outside the premises/boundary. These, if any, shall be with the knowledge of and prior approval of the Employer's Representative.
28. The word "Ditto" mean the repetition of all or part of the preceding items as applicable to complete the sense of the items.
29. The Provisional Sum included and so designated in the BOQ shall be expended in whole or in part at the direction and discretion of the Employer's Representative in accordance with the Conditions of Contract. It will be used by the Employer's Representative for nominated sub-contractors, line agencies, installation of 33 KV dedicated power feeder by the electricity department, third party inspecting agencies, charges levied by statutory electrical, telephone, or other authorities, or for other miscellaneous works. The use of the Provisional Sum will also be for

relocation of utilities above or under the ground that conflict with the existing or permanent line or level of the Works, independent sampling and laboratory testing, as directed by the Employer's Representative, replacement or compensation for plants and trees removed due to the Works, and permanent reinstatement of asphalt roads, etc., as directed by the Employer's Representative.

30. Metric System and Abbreviations

Millilitre	ml
Million Litres per Day	mld
Million Litre	ML
Litre	ltr
Linear meter	m
Gram	gm
Square metre	m ²
Cubic metre	m ³
Number	No.
Kilogram	kg
Lump Sum	LS
Indian Rupees	Rs
Millimetre	mm
Square Centimetre	cm ²
Square Millimetre	mm

31. The abbreviations used in the Specification and BOQ shall be read as follows:

IS	Indian Standard
BHP	Brake Horsepower
BS	British Standard
Cm or CM or cm	Centimeter
Cum or CUM	Cubic Meter
MM or mm	Millimeter /s
Rm or RM or RMT	Running Meters
Sqm	Square Meters
SqKm	Square Kilometers
Qty.	Quantity
Drg.	Drawing
No. or Nos.	Number or Numbers
PCC	Plain Cement Concrete
RCC	Reinforced Cement Concrete
Rs.	Indian Rupees

B. Work Items

Bihar Urban Development Investment Program - Project 1 (ADB Loan No: 2861 - IND)

Contract Package BH/WS/01: **Rehabilitation, Construction, Operation, Maintenance and Management of Bhagalpur Water Supply Project (BWSP1)**

ABSTRACT OF COSTS

No	Bill No and Name	Currency	Amount
1	Bill 1: WTP Refurbishment		
2	Bill 2: Mechanical, Electrical and Instrumentation		
3	Bill 3: Distribution Works and Management		
4	Bill 4: Service Reservoirs		
5	Bill 5: Operation and Maintenance, Set Up Costs, Asset Replacement Fund		
	Total of Bill No. 1 to Bill No. 5		
6	Provisional Sum	INR	170,000,000
	Total including Provisional Sum		

Bihar Urban Development Investment Program - Project 1 (ADB Loan No: 2861 -IND)

Contract Package BH/WS/01: **Rehabilitation, Construction, Operation, Maintenance and Management of Bhagalpur Water Supply Project (BWSP1)**

BILL OF QUANTITIES

Bill 1: WTP Refurbishment

Item No.	Description of Item	Unit	Quantity	Currency	Unit Rate		Amount
					Figures	Words	
1	Cost of all necessary civil works for introduction of flash mixers including the interconnections to existing channels and pipes, etc., to be constructed in each of the existing treatment plant at Barari Water Works	Each	3				
2	Cost of all necessary civil works for introducing alum mixing and dosing systems with necessary arrangements, standby dosing tanks, etc., to be constructed in each of the existing water treatment plant at Barari Water Works	Each	3				
3	Cost of all necessary civil works for introducing lime mixing and dosing system with necessary arrangements, standby dosing tanks, etc., to be constructed in each of the existing water treatment plant at Barari Water Works	Each	3				

4	Cost of all necessary civil works for introducing gas based Chlorine dosing systems with necessary storage and safety infrastructure arrangements, etc., for all the three existing water treatment plants including construction of two separate chlorine rooms and one central chlorine storage enclosure with all necessary facilities	<u>Job</u>	1				
5	Leakage control in pipes, valve, and structures, reorganization of piping works, and other miscellaneous civil repair works	Each plant	3				
6	Painting of various parts and renovation to existing civil structure (as necessary)	Each plant	3				
7	Cost of any other item as proposed by the bidder for refurbishment of WTPs	Each plant	3				
Total for Bill No. 1: WTP Refurbishment							

Bill 2: Mechanical, Electrical and Instrumentation

Item No.	Description of Item	Unit	Quantity	Currency	Unit Rate		Amount
					Figures	Words	
<u>A: Mechanical</u>							
1	Dismantling of existing pumping units, accessories and other equipment, including safe storage, handing over to the Employer	Lot	1				
2	Design, supply, install, testing commissioning and painting at the Site of following equipment						
2.1	Pumping Station						
a	Centrifugal Pumps						
i.	Horizontal centrifugal pumps, complete with electric motor and all accessories, of discharge-250 m ³ /hr; head 70 m	Nos.	2				
b	Valves						
i	Sluice valves- 150 mm size	Nos.	2				
ii	Sluice valves- 200 mm size	Nos.	2				
iii	Non Return Valves - 150 mm size	Nos.	2				
iv	Non Return Valves - 200 mm size	Nos.	2				
v	Foot Valves - 200 mm size	Nos.	2				
c	Piping & Fittings	Nos.	2				
i	Complete DF piping, DF bends, DF radial tees, DF dismantling joints, packing and nut-bolts etc.	Lot	1				
2.2	Water Treatment Plants						
a	Air Blowers for Filters						

i	For Patterson Filter WTP	Nos.	1				
ii	For Mechanical Filter WTP	Nos.	1				
iii	For Jewel Filter WTP	Nos.	1				
iv	Piping & Valves in connection with air line	Set	3				
v	Acoustic enclosures for existing air blowers	Nos.	3				
b	Chemical Mixing & Metering System						
i	Mixing Units for Alum solution	Nos.	6				
ii	Mixing Units for Lime solution	Nos.	6				
iii	Alum dosing system (metering pumps) 1 working + 1 standby	Nos.	6				
iv	Lime dosing system (metering pumps) 1 working + 1 standby	Nos.	6				
v	Piping & Valves in connection with Alum & Lime Dosing	Lot	1				
c	Flash Mixing System						
	Flash mixing system complete in all respects	Nos.	3				
d	Filters						
	Rate of Flow Controller Arrangement	Nos.	4				
e	Chlorinating System						
i	Vacuum feed type chlorinators of 1.5 kg/hr capacity for Jewel filter plant for pre- and post-chlorination, complete with motive water pumps, piping and valves etc., including standby	Sets	2				
ii	Vacuum feed type chlorinators of 1.0 kg/hr capacity for the remaining two plants for pre- and post-chlorination, complete with	Sets	4				

	motive water pumps, piping and valves etc., including standby						
iii	All accessories including Chlorine Cylinder Weighing system etc.	Set	3				
iv	Safety Equipment	Lot	2				
v	Ventilation System for chlorinators room and Chlorine Cylinder room	Set	2				
f	Servicing and refurbishment of all existing electro-mechanical equipment other than supplied and installed by Contractor	Lot	1				
3	Fire extinguishers	Nos.	20				
4	First Aid Kits	Nos.	3				
5	Any other item and accessories not specified above but required to complete the Works Note: 1. Bidder to provide a separate list with breakup of item, quantity, units, unit rate and cost separately and give the total price of these items.	Lot	1				
Total Mechanical							

<u>B: Electrical</u>							
1	Dismantling of existing electrical systems and other all connected accessories in all the pumping stations and WTPs, including safe storage, handing over to the Employer	Lot	1				
2	Design, Supply, install, testing and commissioning following equipment						
2.1	33 kV/0.433 kV Sub-station Works						
a	33 KV; H.T. Switchgear & Control Panel Board	Nos.	1				
b	33 kV/0.433 kV Transformer of 1500 KVA	Nos.	1				
c	Supporting MS Structures, HT & LT Cabling and all related works and accessories required for sub-station works	Lot	1				
2.2	LT Switchgear Panels						
a	Main Switchgear panel, having 1 nos. incoming panel and 10 numbers of outgoing panels and complete in all respects	Nos.	1				
b	Switch gear Panel, having 1 nos. incoming panel and required numbers of outgoing panels complete in all respects for Old Intake Pump House	Nos.	1				
c	Switch gear Panel, having 1 nos. incoming panel and required numbers of outgoing panels complete in all respects for Old Clear water Pump House	Nos.	1				
d	Switch gear Panel, having 1 nos. incoming	Nos.	1				

	panel and required numbers of outgoing panels complete in all respects for New Clear water Pump House						
e	Switch gear Panels, having 1 nos. incoming panel and required numbers of outgoing panels along with suitable starters etc., for all air blowers, (including existing air blowers), flash mixer, alum & lime mixing systems, metering pumps, chlorinating plants, lighting works etc. complete in all respects along with starters etc.	Nos.	3				
3	415V Bus connected Capacitor bank with Automatic Power Factor Correction relay for LT Main Switchgear panel	Nos.	1				
4	Automatic ATS Starters Panels						
	a. Old Clear Pumping station	Nos.	4				
	b. New Clear Pumping station	Nos.	4				
5	Providing electrical actuators for all existing sluice valves only for Jewel plant to enhance easy operation.	Lot	1				
6	Complete LT Cabling for related pumping stations and WTPs	Lot	1				
7	Complete Earthing system as per design and specifications	Lot	1				
8	Complete Lighting (Indoor and Outdoor) as per the technical specifications and requirements etc.	Lot	1				
9	Any other item and accessories not specified above but required to complete						

	the Works Note: 1. Bidder to provide a separate list with breakup of item, quantity, units, unit rate and cost separately and give the total price of these items.						
Total Electrical							

<u>C: Instrumentation</u>							
1	Dismantling of all existing Instruments and accessories, including safe storage, handing over to the Employer's Representative	Lot	1				
2	Design, Supply, Install, testing and Commissioning of following instrumentation equipment:						
2.1	Pumping Station						
a	Electro- magnetic Flow meter						
	Direct on line electro- magnetic Flow meter complete with converter, transmitting device and digital flow indicator & integrator etc. for following sizes:						
i.	300 mm dia. Pipe	Nos.	2				
ii	350 mm dia. Pipe	Nos.	2				
iii	400 mm dia. Pipe	Nos.	2				
iv	450 mm size Pipe	Nos.	2				

b	Ultrasonic Type Level Indicator						
	Ultrasonic type Level indicator shall be provided for measuring the water level as per following details. The indicator shall be digital type showing depth in meters.						
i	For Intake-wells Ultrasonic/Radar type	Nos.	2				
ii	For clear water reservoirs Ultrasonic/Radar type	Nos.	2				
c	Pressure Measuring Device						
i	Digital Electronic sensor type pressure measuring system suitable for pressure measurements of water flow in delivery pipe complete with signal transmitting device and digital pressure indicator.	Nos.	20				
ii	Digital Electronic sensor type pressure measuring system suitable for pressure measurements of water flow in suction pipe complete with signal transmitting device and digital pressure indicator.	Nos.	13				
iii	Bourdon type pressure gauges suitable for pressure measurements of water flow in delivery pipe complete with piping & hard wares	Nos.	20				
iv	Bourdon type pressure gauges suitable for pressure measurements of water flow in suction pipe complete with piping & hard wares	Nos.	13				
2.2	Water Treatment Plants						
a	Filters						

	Rate of Flow Indicator with sensor, transmitter and digital display arrangement	Nos.	4				
	Loss of Head Indicator with probe, transmitter and digital display arrangement	Nos.	4				
b	Chlorinators						
	On line Residual Chlorine Monitoring System	Nos.	3				
	Chlorine Gas Leakage Detection System	Sets	2				
3	Any other item & accessories not specified above but required to complete the Works Note: 1. Bidder to provide a separate list with breakup of item, quantity, units, unit rate and ost separately and give the total price of these items.						
	Total Instrumentation						
	Total of Bill No.2: Mechanical, Electrical and Instrumentation						

Bill 3: Distribution Works and Management Improvements

Item No.	Description of Item	Unit	Quantity	Currency	Unit Rate		Amount
					Figures	Words	
A: Works							
1	ROAD CUTTING AND EARTHWORK						
1.1	Excavation trenches of required width on different types of road surfaces for pipes, cables etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m including disposing of surplus excavated soil as directed, within a lead of 50 m including all labor charges, machine hire etc., complete						
(a)	Concrete Roads	m ³	46,215				
(b)	Asphalt Roads	m ³	10,721				
(c)	WBM Roads	m ³	13,120				
(d)	Brick Roads	m ³	1,291				
1.2	Earth work for excavation of foundations, pipe trenches, valve chambers, thrust blocks, service connections masonry work, etc. in all kinds of ordinary soils such as murum, sand, sandy silt, clay silt with kankar, brick pieces etc. or in combination. Excavation shall include the removal of concrete road surfaces, WBM roadway surfaces, brick surfacing, including dressing, compaction of the bottoms of the excavation, shoring and strutting wherever required, dewatering whenever required, removal of the excavated soil, stockpiling and disposal of						

	surplus excavated soil off-site as directed by the Employer's Representative.						
	Excavation will be paid for in the following segments:						
(a)	0 to 1.5 m from GL	m ³	1,94,283				
(b)	above 1.5 m to 3.0 m depth from GL	m ³	100				
1.3	Backfilling of pipe trenches, foundations, etc. with approved graded excavated soil (excluding rock), including placing in layers not exceeding 15 cm in depth each, and compacting each layer, complete as per the specification and as directed by the Employer's Representative.	m ³	1,10,314				
1.4	Backfilling of pipe trenches, foundations, etc. with Contractor's supplied approved graded gravel, including placing in layers not exceeding 15 cm in depth each, and compacting each layer, complete as per the specification and standard drawings and as directed by the Employer's Representative.	m ³	36,771				
2	PIPELINES, SPECIALS AND APPURTENANCES						
2.1	Supplying spirally welded MS pipe with internal lining and external coating as per the specification of the following internal diameters and wall thicknesses. The rate shall include third party inspection, transportation, freight charges, loading, unloading and stacking at the Site, laying, jointing, testing and commissioning						

	including the cost of all labor, Materials, taxes and duties.						
(a)	1200 mm ID 10 mm thick (for trenchless pipe laying)	M	30				
(b)	600 mm ID 20 mm thick (for trenchless pipe laying)	M	30				
(c)	600 mm ID 6 mm thick	M	30				
(d)	450 mm ID 6 mm thick	M	30				
2.2	Supplying all types of MS Specials plain ended, socket ended and flanged as required with internal lining and external coating as per the specification, such as bends, tees, tapers, spool pieces, blind flanges, pieces for pipe connection, valve connections, dismantling joints, anchor bolts, straps, air vent pipe, etc. of different diameters, manufactured from Fe 410 grade steel. This item includes loading, transportation to the Site, unloading and stacking, etc., complete with cost of third party inspection, Materials, labor, taxes and duties.	MT	5				
3	DI Pipes and Specials						
3.1	Supply, laying, jointing, hydraulic testing, disinfecting and commissioning of DI K7 pipes with internal cement mortar lining as per the specification of the following internal diameters as per IS 8329						
(a)	100 mm	m	2,67,909				
(b)	150 mm	m	24,972				

(c)	200 mm	m	12,304				
(d)	250 mm	m	8,835				
(e)	300 mm	m	7,358				
(f)	350 mm	m	2,297				
(g)	400 mm	m	2,320				
(h)	450 mm	m	10				
(i)	500 mm	m	254				
(j)	600 mm	m	10				
(k)	700 mm	m	10				
(l)	800 mm	m	10				
3.2	Supply, Laying, jointing, hydraulic testing, disinfecting and commissioning DI Specials of K12 Class and fittings with plain, double socket, socket & flanged and double flanged end connections as required, with lining and coating as per the specification, and relevant IS standard with EPDM rubber gaskets as per IS 5382 as required for successful completion of the Works						
(a)	Tee's, Socket, collar, tail pieces, flanged tapers, socketed tapers, flanged spigot short pipes, flanged socket short piece, all bends, end caps, barrel piece, dismantling joints etc. required for suitable completion of the Works	MT	283				
(b)	Double flanged pipe pieces, required for suitable completion of Works	MT	71				
4	Supply, Laying, jointing, hydraulic testing, disinfecting and commissioning of CI Specials and fittings with plain, double socket, socket &	MT	28				

	flanged and double flanged end connections, studs with standard holes as required, with lining and coating as per the specification, rubber gaskets as per as required for successful completion of the work.						
5	PIPE JACKING						
5.1	Pipe jack for Railway crossing with Jacking and Pushing method. The item include pushing jointing following diameter MS pipe of required length, construction of Receiving and Jacking pit with suitable shoring and strutting (if required), including installation of jacking platform, thrust resistant arrangement of required capacity including hydraulic jacking with required accessories, required excavation inside the jacking pipe and disposal the same, etc. all complete as per drawing, specification and as directed.						
(a)	Jacking and pushing of 1200 mm ID 20 mm thick MS pipe	m	30				
(b)	Jacking and pushing of 600 mm ID 20 mm thick MS pipe	m	30				
6	VALVES AND APPURTENANCES						
6.1	Supply, installation and commissioning of VAG make EKO Plus Model or equivalent double flanged manually operated glandless, Sluice Valves, resilient seated with straight pocket less						

	body passage with inside stem screw. Inside and outside epoxy powder coated (EP-P) with minimum thickness of 250µ. Specs. as under Body & Bonnet: Ductile Iron to IS 1865 Gr. 400/12(GGG – 40), Wedge: Ductile Iron to IS 1865 Gr. 400/12(GGG – 40) fully vulcanized with EPDM Rubber Gr W 270, Stem Seals: NBR ‘O’ rings in Bronze Bush, Stem: Stainless steel to 1.4021/IS 6603, Stem nut: brass, Body & Bonnet gasket: EPDM - C115						
(a)	80 mm dia (for Fire hydrant) PN1.0	Nos.	32				
(b)	100 mm dia PN1.0	Nos.	1,664				
(c)	150 mm dia PN1.0	Nos.	196				
(d)	200 mm dia PN1.0	Nos.	104				
(e)	250 mm dia PN1.0	Nos.	41				
(f)	300 mm dia PN1.0	Nos.	81				
6.2	Supply, installation and commissioning of VAg make EKN Model or equivalent double flanged Butterfly valve Manually operated confirming to relevant IS standard for water application with nickel weld overlay & micro finished integral seat face which is corrosion resistant and tight in both directions, installation possible in any position, double offset disk design, replaceable disk seal ring without dismantling the valve, with hand wheel. Body: Ductile Iron to GGG-40, Disk: Ductile Iron to GGG-40, Body Seat face: Integral, Nickel weld overlay and micro finished, Disk seal: EPDM, endless profile sealing ring,						

	Shafts: Stainless steel to 1.4021, Bearing assembly: Fully enclosed, all parts of corrosion resistance material - shaft sealed with ‘O’-rings of EPDM, Shaft bearings: Bronze						
(a)	400 mm dia PN1.0	Nos.	11				
(b)	500 mm dia PN1.0	Nos.	1				
6.3	Supply installation and commissioning of VAG make EKO Plus Model or equivalent DUOJET, single chamber compact design air valve or equivalent model directly operated by the flow medium and 100% tamper proof, light weight, automatic air venting of working fluid for feed, main and supply lines, one big orifice and one small orifice to expel the air continuously from the pipe lines, designed for air admission during draining of pipe line, venting during pump starting and continuous venting during pump operation. Ends: Flanged to DIN 2501, Pressure test: per DIN 3230 Part 4, Surface protection: Electrostatic epoxy powder coating (EP-P) inside & outside, Body & Cover: Ductile Iron GGG -40, Float & shell: Austenitic Alloy steel, Gaskets & Seals: EPDM						
(a)	80 mm dia PN1.0	Nos.	51				
(b)	100 mm dia PN1.0	Nos.	1				
(c)	150 mm dia PN1.0	Nos.	1				
6.4	Supply installation and commissioning of DI D/F PICO Diaphragm Pressure relief valve (Type-3) of PN12 Class, Hydraulically operated main						

	valve in control circuit, high capacity filter with inspection glass and ball valve for manual drain, separate controller for adjustment of opening and closing speed, visual position indicator with seat and control insert made of stainless steel. All parts inside and outside epoxy coating. Material of construction include, Body with Ductile iron to EN- JS 1030 (GGG-40), stainless steel seat & control insert, EPDM rubber sealings and membrane and surface protection of inside and outside epoxy coating with minimum thickness of 250 microns (Singer make).						
(a)	100 mm dia PN1.0	Nos.	50				
(b)	150 mm dia PN1.0	Nos.	22				
(c)	200 mm dia PN1.0	Nos.	16				
(d)	3000 mm dia PN1.0	Nos.	26				
7	Flow and Pressure Measurement						
7.1	Supply and commissioning of Electromagnetic flow meter (EMF) for raw/ pure water with accuracy 0.5% of measured value and protection as per given specifications for size 100mm - 1000mm. Including sensor, transmitter, surge arrestor, 25mtere sensor/ transmitter cable, GI duct of suitable size for 25 mtrs/ each flow meter including pipe cutting, leveling and installation of flow meter in pipe lines with necessary tool tackles cranes etc. as may be required at the Site						

	and based on technical specification etc., with 10 years battery back-up and data logger.						
(a)	100 mm dia PN1.0	Nos.	50				
(b)	150 mm dia PN1.0	Nos.	22				
(c)	200 mm dia PN1.0	Nos.	16				
(d)	250 mm dia PN1.0	Nos.	12				
(e)	300 mm dia PN1.0	Nos.	9				
(f)	400 mm dia PN1.0	Nos.	4				
(g)	500 mm dia PN1.0	Nos.	1				
7.2	Providing, installing and giving satisfactory field testing of flanged ends bulk water meter of following type and as mentioned below in (a) and (b) with FGI-250 cast iron body, class "B" confirming to IS: 2373 or as per IS-4064, marked to read in metric system, along with manufacturer's test and guarantee certificate including cost of all Materials and labor with ISI mark or EEC mark with remote reading facility & C I Strainer "T" (Basket) Type with flanged end S C.I. Strainer "T" Basket Type with flanged ends and stainless steel or brass mesh with opening of 2.5mm to 3mm and suitable for operating pressure of 16 kg/cm ²						
(a)	50mm	Nos.	20				
(b)	80mm	Nos.	10				
(c)	100mm	Nos.	5				
(d)	150mm	Nos.	3				
(e)	200mm	Nos.	2				
7.3	Supply, delivery, installation, testing, and	Nos.	100				

	commissioning of pressure measuring instruments as per the General Specifications consisting of pressure transducers, pressure transmitters with cabinet for pressure transmitter, digital pressure indicator, sensors, converters, cables, structure required for mounting viz: platforms, railings, etc. and all required installation hardware complete and as directed by Employer's Representative						
7.4	Providing, installing and giving satisfactory field testing of domestic water meter, horizontal inferential single or multi-jet type with magnetic drive and dry dial suitable for ambient 50 ⁰ C temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per IS:779/1994 (VI Revision) with ISI mark along with manufacturers test certificate and guarantee certificate, including cost of all Materials and labor.						
(a)	Dia 15 mm	Nos.	53175				
(b)	Dia 20 mm	Nos.	1650				
(c)	Dia 25 mm	Nos.	165				
(d)	Dia 40 mm	Nos.	10				
7.5	Providing and fixing water meter box, of HDPE material, including necessary excavation, cost of locking arrangement etc. complete of suitable size for 15 to 40 mm dia.	Nos.	55000				
8	Service Connections						

8.1	Providing and fixing PTMT Stop cock of approved quality and color, The rate shall include third party inspection, transportation, freight charges, loading, unloading and stacking at the Site, laying, jointing, hydraulic testing, disinfecting including the cost of all labor, Materials, taxes and duties						
(a)	Dia 15 mm	Nos.	53175				
(b)	Dia 20 mm	Nos.	1650				
8.2	Ductile Iron strap saddle for house service connection to replace the ferrules on Cast and Ductile iron pipes for different diameters of pipes and house service connection. With Complete assembly: 1. Strap - SR304 - powder coated, 2. Outer body – DI - powder coated, 3. Sealing bush – EPDM - original black, 4 Outer sleeve- ductile plastic - pigmented color, 5. Top hex bush for ferrule – brass - original, 6. Nut for strap - brass - original, 7. Retainer for bolt – brass - original, 8. Strap tightening bolt - stainless steel 304, 9. ‘U’ shape locking pin-stainless steel 304, 10. Springs - stainless steel 304, 11. Split pins - stainless steel 304, 12. ‘O’ Ring (seal for ferrule) - EPDM-original black.						
(a)	Dia 100mm	Nos.	54825				
(b)	Dia 150mm	Nos.	165				
(c)	Dia 200mm	Nos.	10				
8.3	Making House Service Connection from distribution main to property limit, including (1)						

	Providing & fixing brass ferrule - 1 no. (2) Providing & fixing metal inserted compression female thread adaptor (FTA) - 1 no. (3) Providing & fixing MDPE blue pipe of PE- 80 & 16 kg class conforming to ISO 4427 in required length - 6 mtr approx. (4) Providing & fixing compression elbow - 2 Nos, (5) Providing & fixing PVC ball valve with one side compression and another side female threaded - 1 no. The work shall be done as per detailed specifications & as per drawings complete with all lead & lift and as directed by the Employer's Representative.						
	Dia 15 mm	Nos.	53175				
	Dia 20 mm	Nos.	1650				
	Dia 25 mm	Nos.	165				
	Dia 40 mm	Nos.	10				
8.4	Supply laying, installation of MS black pipe 32mm dia for encasing the MDPE service pipes at places of drainage crossings	RMT	10000				
8.5	Disconnection of illegal connections, including necessary excavation, cutting of pipe, dismantling pipe, plugging of pipeline & refilling etc., complete	Nos.	3000				
8.6	Supply and laying of underground warning Polyethylene tape with custom printed with warning and information on existing of water pipe line at the location	RMT	350000				
9	Interconnections						

9.1	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes, lowering, laying of specials and pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by the Employer’s Representative for following diameters of existing pipeline, irrespective of diameter of branch line (the number of joints involved will be paid separately depending upon the nature of joints and required pipes, excluding cost of valves and specials) but including jointing material such as rubber ring, nut bolts etc.						
(a)	100mm Dia	Nos.	400				
(b)	150mm Dia	Nos.	50				
(c)	200mm Dia	Nos.	40				
(d)	250mm Dia	Nos.	10				
(e)	300mm Dia	Nos.	10				
(f)	350mm Dia	Nos.	5				
(g)	400mm Dia	Nos.	5				
(h)	450mm Dia	Nos.	5				
(i)	500mm Dia	Nos.	5				
(j)	600mm Dia	Nos.	5				
9.2	Providing caulked lead joint to spun iron or CI pipes and specials including testing of joints including the cost of pig lead, all Materials, labor charges						
(a)	100mm Dia	Nos.	100				

(b)	150mm Dia	Nos.	50				
(c)	200mm Dia	Nos.	10				
(d)	250mm Dia	Nos.	10				
(e)	300mm Dia	Nos.	10				
10	VALVE CHAMBERS						
10.1	Construction of RCC and brick masonry chambers for valves, hydrants, flow meters etc. including cost of PCC and RCC work, cost of supply and bending and binding of steel with required shuttering, cost of brick work with plaster from inside and outside, cost of precast slabs and supply and installation of SFRC frame and covers wherever required, including all the miscellaneous items of work, but excluding the supply and installation of pipes and specials, valves etc. The item shall be as per specification, drawing and as directed.						
(a)	Chamber for Sluice valve TYPE S1	Nos.	1,382				
(b)	Chamber for Sluice valve TYPE S2	Nos.	123				
(c)	Chamber for Wash out valve TYPE W1	Nos.	410				
(d)	Chamber for Wash out valve TYPE W2	Nos.	205				
(e)	Chamber for Butterfly valve TYPE B1	Nos.	11				
(f)	Chamber for Butterfly valve TYPE B2	Nos.	1				
(g)	Chamber for Butterfly valve TYPE B3	Nos.	1				
(h)	Chamber for Air valve TYPE A1	Nos.	51				
(i)	Chamber for Air valve TYPE A2	Nos.	1				
(j)	Chamber for Air valve TYPE A3	Nos.	1				
(k)	Chamber for Fire hydrant TYPE F1	Nos.	32				

(l)	Chamber for Flow meter TYPE P1	Nos.	88				
(m)	Chamber for Flow meter TYPE P2	Nos.	25				
(n)	Chamber for Flow meter TYPE P3	Nos.	1				
11	MISCELLENEOUS CIVIL WORK						
11.1	Plain Cement Concrete Work						
	Providing and placing plain cement concrete (PCC) of one of the following grades for thrust blocks, anchor blocks, floatation blocks, etc. with 20-40mm stone aggregate (crusher broken) including finishing the surface, shuttering and staging, curing etc., as per the specifications and drawings and as directed by the Employer's Representative.						
(a)	Grade M15 concrete	m ³	5,500				
(b)	Grade M20 concrete	m ³	3,600				
11.2	Reinforced Cement Concrete Work						
	Providing and placing reinforced cement concrete (RCC) of one of the following grades with 10-20 mm stone aggregate (crusher broken) including shuttering and staging, curing etc. as per the specifications and drawings and as directed by the Employer's Representative.						
(a)	Grade M20 concrete	m ³	500				
(b)	Grade M25 concrete	m ³	250				
11.3	Reinforcement Steel						
	Providing and fabricating steel reinforcement with Fe 415 grade steel for RCC work including straightening, cutting, bending, placing in position	kg	3,500				

	and tying (including cost of tie wire), taxes and duties, transportation etc., all complete, as per specifications and drawings and as directed by the Employer’s Representative.						
11.4	Structural Steel Work						
	Providing and fabricating structural steel work in rolled sections including joists, channels, angles, beams, etc. including cutting, fabricating, grinding, hoisting, erecting, fixing in position making bolted/welded connections, applying coatings etc., as per the specifications and drawings and as directed by the Employer’s Representative.	MT	5				
12	ROAD RESTORATION						
12.1	Reconstruction of Bituminous Asphalt Roads						
a)	Providing and laying of granular sub base (GSB), prime coat, wet mix macadam (WMM), dense graded bituminous macadam (DBM) semi dense bituminous concrete (SDBC), tack coat (TC) bituminous macadam (BM) and premix carpet (PC) as per specification drawing and as directed including cost of all Materials, labor charges etc., complete	m ³	10,721				
12.2	Reconstruction of WBM Roads						
a)	Providing , laying ,spreading and compacting stone aggregates of specific sizes as per specification and drawing to water bound macadam including spreading in uniform	m ³	13,120				

	thickness, hand packing, rolling with vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of stone screenings & binding material, and completer as per specification drawing and as directed						
12.3	Reconstruction of Concrete Roads						
	Providing, placing and finishing cement concrete roads to match the existing roadway which was removed, if directed by the Employer’s Representative. Grade M20 concrete shall be used and placed to the same depth as the existing roadway surface. A screed finish shall be applied.	m ³	46,215				
12.4	Reconstruction of Brick Roads						
	Providing and laying of bricks on edge for road restoration on earth sub grade. The bricks shall be on edge, diagonally placed, and gap filled up with sand, all complete, as per specification and drawings.	m ³	1,291				
13	TESTING, DISINFECTION, TRIAL RUNS AND COMMISSIONING						
13.1	Hydraulic testing, flushing, disinfection of the existing CI distribution system piping (laid by BRJP) of the following diameters in segments at the required test pressures. This item includes the cost of water, labor, pumping, etc. all complete, as per the specifications and as directed by the						

	Employer’s Representative.						
(a)	Above 100 mm - 200 mm internal diameter	RMT	75,000				
(b)	Above 200 mm - 400 mm internal diameter	RMT	15,000				
	<u>Total for Distribution Works</u>						
<u>Part B: Management Improvement</u>							
1	SURVEY AND INVESTIGATION WORK						
1.1	Topographical survey work using Total Station, preparation and finalization of survey drawings and CADD files, preparation of working drawing as directed by the Employer’s Representative.	SqKm	33				
1.2	Conducting customer door to door survey for establishing the location, type of property, number of households, families, population, use of water, customer water demand	Each	60000				
1.3	Develop, up-date and maintain calibrated strategic and DMA network models using compatible software (EPANET, WaterCAD, etc.) and, in accordance with the Specifications, design / establish District Meter Areas (DMAs) using the models, Site survey data and any necessary additional Site investigations to confirm pipe condition, valve and pipe sizes, valve locations; identify (under-sized, incrustation) pipe replacement requirements; prepare and submit DMA design reports; hand over models to Employer regularly and at the end of contract	SqKm	33				

2	Customer Services						
2.1	Supply, delivery, erection, installation, testing, and commissioning of Central Server PC for storing data including all necessary accessories Consisting of reputed make Server PC with Min configuration: P4 (Core Duo), 3 GHz or above, 1MB L2 cache, 4 GB RAM, 280 GB HDD, 10/100 Ethernet, Keyboard, Mouse, 1.44MB FDD, CD / DVD ROM, CD writer, Windows latest software inclusive of license with commercial grade monitor (LCD) not less than 42" along with networking components and internet connection for web enabled data facility, printers and all mounting structures viz: furniture, cabinets, platforms, railings etc., and large size Visual Display Unit (like LED Screens) with all required installation soft wares and hard wares cables and as directed by Employer's Representative	Set	1				
2.2	Construction of Operating Office cum Customer Service Center cum Service Office within the Service Area with AC conference room, furniture, training center, lab, guest room, Site development, landscaping, construction of new roads and repair of existing roads and area lighting, parking shed, compound walls to entire premises with security cabin posts, construction of building with interior of building, etc.	Sqm	350				

2.3	Supplying , installation, testing and commissioning of data processing, data management equipment, etc., complete with cost of third party inspection, Materials, labor, taxes and duties.						
2.3.1	Computers and Printers						
(a)	Server	Nos.	1				
(b)	PC's	Nos.	4				
(c)	Bulk Printer	Nos.	2				
(d)	Desktop Printer	Nos.	4				
(e)	Handheld Billing Printers	Nos.	30				
2.3.2	Software						
(a)	MS Office	Nos.	10				
(b)	Autocad	Nos.	2				
(c)	WaterGems	Nos.	1				
(d)	Billing System	Nos.	1				
(e)	Maintenance Management System	Nos.	1				
2.3.3	Customer Service Centers – 2 nos						
(a)	Tables	Nos.	8				
(b)	Chairs	Nos.	10				
(c)	PC's 2 per Centre	Nos.	4				
(d)	Printers	Nos.	2				
(e)	Interiors	Nos.	2				
(f)	Communications	Nos.	4				
(g)	Networking Costs	Nos.	2				
(h)	Toilet	Nos.	2				
	Sign Boards, Leaflets	Nos.	2				
2.3.4	Equipment						
(a)	Leak Noise Correlater	Nos.	2				

(b)	Leak detection ground phones	Nos.	12					
(c)	Pipe locaters	Nos.	2					
(d)	Air Compressor + Jack hammer	Nos.	1					
(e)	Pipe Welding Sets	Nos.	3					
(f)	Mobile Generator	Nos.	1					
(g)	Dewatering pumps	Nos.	2					
(h)	Portable Flow meter	Nos.	2					
2.3.5	Transport							
(a)	Tata Crew Cab	Nos.	2					
(b)	Cars	Nos.	2					
(c)	Water Tankers	Nos.	4					
	<u>Total of Management Improvement</u>							
	<u>Total of Bill No. 3: Distribution Works and Management Improvement</u>							

Bill 4: Service Reservoirs

Item No.	Description of Item	Unit	Quantity	Currency	Unit Rate		Amount
					Figures	Words	
1	Intze Type Over Head Tanks						
	Geotechnical Investigation, hydraulic design, detailed structural engineering design, Construction of Intze type Over Head Tank supported on cylindrical shaft of sufficient staging height, resting on open foundation designed for a Safe Bearing Capacity of 10t/m ² . The cost shall be all inclusive of supply, erection and construction, all testing, disinfecting and commissioning of reservoir, maintenance gallery, spiral staircase, MS ladders with cage (maintenance gallery to top of dome & staircase last landing to maintenance gallery), Aluminum ladder (from manhole to bottom of dome inside the tank), manhole frame with cover, handrail (around roof, maintenance gallery, up to manhole & along spiral staircase), water proofing treatment of tank (polymer modified slurry coating), painting all exterior concrete surfaces with water proof cement paint, providing ultrasonic level sensor and a mechanical float type water level indicator, piping arrangement with K-7 flanged D.I. pipes for inlet/s and outlet/s, flushing and overflow (over flow connected to the outlet) with flexible joints, DI sluice valves for inlet, outlet and scour, sluice valve chambers, flow meter chamber, surface drain, lightning arrestor with two						

	earth pits, electrification, internal illumination of shaft and external illumination of ground, construction of boundary wall with gates, dressing up of area, construction of roads inside the premises, construction of guard room with water and sanitation facilities, lighting arrangement inside the premises and as per specification, drawing and instruction of Employer's Representative						
(i)	Capacity 450 cum and staging height 21m, Outlet pipe 300 mm dia	no.	1				
(ii)	Capacity 500 cum and staging height 17m, Outlet pipe 300 mm dia	no.	1				
(iii)	Capacity 600 cum and staging height 18m, Outlet pipe 350 mm dia	no.	1				
(iv)	Capacity 800 cum and staging height 21m, Outlet pipe 350 mm dia	no.	1				
(v)	Capacity 900 cum and staging height 22m, Outlet pipe 350 mm dia	no.	1				
(vi)	Capacity 1000 cum and staging height 24m, Outlet pipe 400 mm dia	no.	1				
(vii)	Capacity 1000 cum and staging height 22m, Outlet pipe 400 mm dia	no.	1				
(viii)	Capacity 1000 cum and staging height 23m, Outlet pipe 400 mm dia	no.	1				
(ix)	Capacity 1100 cum and staging height 25m, Outlet pipe 400 mm dia	no.	1				
(x)	Capacity 1100 cum and staging height 23m, Outlet pipe 400 mm dia at Mughalpara Kawali Maidan, Hussinabad	no.	1				

(xi)	Capacity 1200 cum and staging height 20m, Outlet pipe 400 mm dia	no.	1				
(xii)	Capacity 1300 cum and staging height 17m, Outlet pipe 450 mm dia	no.	1				
(xiii)	Capacity 1400 cum and staging height 20m, Outlet pipe 450 mm dia	no.	1				
(xiv)	Capacity 1500 cum and staging height 17m, Outlet pipe 450 mm dia	no.	1				
(xv)	Capacity 1500 cum and staging height 24m, Outlet pipe 450 mm dia	no.	1				
(xvi)	Capacity 1650 cum and staging height 22m, Outlet pipe 500 mm dia	no.	1				
2	Rehabilitation of existing Overhead Tank of 550cum with 20m staging located at Chatrapathi Talab	no.	1				
3	Variations in OHT prices						
(i)	Additional price or reduction in price over the costs of OHTs included under item No. 1 (i) to (xvi) above						
	a) Addition in cost or reduction in cost for difference in every unit safe bearing capacity lower or higher than 10t/m ² as the case may be	Cum per t/m ²	20000 cum				
	c) Addition in cost or reduction in cost for increase or decrease in capacity of OHTs as the case may be from the stipulated capacities at item 1(i) to (xvi) above	Cum	5000 Cum				
	d) Addition in cost or reduction in cost for increase or decrease in staging height from the stipulated heights provided in item nos 1 (i) to (xvi) above	Cum per meter	15000 cum				
	<u>Total of Bill No. 4: Service Reservoirs</u>						

Bill 5: Operation, Maintenance, Repairs, and Service Provision of Water Supply Services from Source to Customer

S.No.	Item	Quantity	Unit	Currency	Unit Rate		Amount
					In Figures	In Words	
	A: O&M Costs						
1.	<p>Production Charges (BP_C) for Operations, Maintenance and Management of Water Supply and all related infrastructure for approximate average production of 17000 cum per day for 7.5 years at Barari Water Works comprising of raw water dry intake well, wet intake well, raw water pumping system, all three existing water treatment works comprising of coagulation, sedimentation, rapid gravity filtration, chlorination for disinfection, disposal of sludge, treated water pumping system, water quality testing and monitoring, flow and pressure measurement including all necessary preventive and reactive maintenance of all civil, mechanical, electrical and instrumentation units, administration, transport, communications, management information systems, reporting, including cost of all wages, chemicals, consumables, administration, transport, spares, insurance, taxes levies etc., complete for producing and supplying potable water conforming to the relevant Performance Standards but excluding cost of electricity charges and salaries of BMC deputed staff.</p> <p><i>The bidder shall separately provide the break-up of salaries and wages, consumables, preventive</i></p>	47000 million liters	One million liters				

	<i>maintenance for civil, mechanical, electrical and instrumentation, insurance and all other costs in a separate sheet for analysis by Employer</i>						
2.	Production Charges (TP_C) for Operations, Maintenance and Management of Water Supply and all related infrastructure for approximate average production of 10000 cum per day for 3 years from existing tube wells in Bhagalpur comprising of water pumping system, water quality testing and monitoring, flow and pressure measurement including all necessary preventive and reactive maintenance of all civil, mechanical, electrical and instrumentation units, administration, transport, communications, management information systems, reporting, including cost of all wages, chemicals, consumables, administration, transport, spares, insurance etc., complete for producing and supplying available potable water but excluding cost of electricity charges and cost of replacement of pumping machinery which shall be borne by BMC and excluding salaries of BMC deputed staff <i>The bidder shall separately provide the break-up of salaries and wages, consumables, preventive maintenance for civil, mechanical, electrical and instrumentation, insurance and all other costs in a separate sheet for analysis by Employer</i>	11000 Million Liters	One Million Liters				
3.	Distribution Charges (D_C) for Operations, maintenance, management of distribution of water produced from Barari Water Works and the existing	87000 million liters	One Million Liter				

	<p>tube wells in Bhagalpur to all connected consumers, including planning, demand management, network operations, network management, leak detection, leak repair, connections management, all commercial services including billing, collection of revenue, debt management, customer services including recording and redressing customer complaints, including all administrative tasks, management tasks and all services to be provided as a prudent water supply service provider etc., as well as cost of management, wages, incentives, operations, maintenance, spares, administration, equipment, transport, tankered water supply, taxes and levies, but excluding salaries of BMC deputed staff. The average volume of sale at tap is assumed as 16mld from Initial Takeover Date for a period of 4 years followed by 50mld supplied from new water works for a period of 3.5 years.</p> <p><i>The bidder shall separately provide the break-up of salaries and wages, consumables, preventive maintenance for civil, mechanical, electrical and instrumentation, insurance and all other costs in a separate sheet for analysis by Employer</i></p>						
	<p>Total of A: O&M Costs</p>						
	<p>B: Set Up Costs</p>						
<p>4.</p>	<p>Design, supply, delivery at Site, installation, commissioning, networking of Management Information System including all necessary system</p>	<p>One Job</p>	<p>One Job</p>				

	architecture design, necessary hard ware, software, data loading, electrical connections, UPS systems, commissioning with a three year minimum maintenance guarantee etc. complete including all charges, fees, taxes, levies etc. complete						
5.	Planning , architectural design, structural design, supply of all Materials, construction, providing furniture, electrification, water supply, sanitation etc. all complete for setting up Customer Service Centers in the designated locations as approved by BMC in Bhagalpur including cost of all Materials, labor, workmanship, taxes, levies etc. complete but excluding cost of land and building for housing the center which shall be provided by BMC	Two Numbers	One Number				
6.	Planning, design, supply all Materials, construction, providing furniture, electrification, water supply, sanitation etc. all complete for setting up Operating office cum Customer Service Center at Barari Water Works including all cost of Materials, labor, workmanship, taxes, levies etc. complete	One Number	One Number				
	Total of B: Set Up Costs						
	C: Asset Replacement Fund						
7.	Asset Replacement Fund for replacement of Existing Assets during the period after the completion of Development Period and up to the Contract Completion Date	One Number	Lump-sum				
8.	Asset Replacement Fund for replacement of New Assets during the period after the completion of Development Period and up to the Contract	One Number	Lump-sum				

	Completion Date							
	Total of C: Asset Replacement Fund							
	Total of Bill No. 5: O&M, Set Up Costs and Asset Replacement Fund (A + B + C)							

Section 5 – Eligible Countries

Section 5 - Eligible Countries

This section contains the list of eligible countries.

1.	Afghanistan	35.	Micronesia, Federal States of
2.	Armenia	36.	Mongolia
3.	Australia	37.	Myanmar
4.	Austria	38.	Nauru
5.	Azerbaijan	39.	Nepal
6.	Bangladesh	40.	The Netherlands
7.	Belgium	41.	New Zealand
8.	Bhutan	42.	Norway
9.	Brunei Darussalam	43.	Pakistan
10.	Cambodia	44.	Palau
11.	Canada	45.	Papua New Guinea
12.	China, People's Republic of	46.	Philippines
13.	Cook Islands	47.	Portugal
14.	Denmark	48.	Samoa
15.	Fiji	49.	Singapore
16.	Finland	50.	Solomon Islands
17.	France	51.	Spain
18.	Georgia	52.	Sri Lanka
19.	Germany	53.	Sweden
20.	Hong Kong, China	54.	Switzerland
21.	India	55.	Tajikistan
22.	Indonesia	56.	Taipei, China
23.	Italy	57.	Thailand
24.	Ireland	58.	Timor-Leste
25.	Japan	59.	Tonga
26.	Kazakhstan	60.	Turkey
27.	Kiribati	61.	Turkmenistan
28.	Korea, Republic of	62.	Tuvalu
29.	Kyrgyz Republic	63.	United Kingdom
30.	Lao PDR	64.	United States
31.	Luxembourg	65.	Uzbekistan
32.	Malaysia	66.	Vanuatu
33.	Maldives	67.	Viet Nam
34.	Marshall Islands		

Section 6 – Employer’s Requirements

Section 6 – Employer’s Requirements

This Section contains the Scope of Services, Specifications, Drawings, and supplementary information that describe the existing system, Personnel Requirements and Equipment Requirements.

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- 6.2 Specifications**
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6.1 Scope of Services

1. Preamble and Definitions

1.1. Preamble

1.1.1. The overall objective of the Bhagalpur Water Supply Project (BWSP) is to deliver a continuous, pressurized supply of safe water to the entire population of Bhagalpur city. BWSP will be executed in two tranches (with two separate contracts) under the Bihar Urban Development Investment Program (BUDIP)². Tranche 1 of BUDIP will support the Government in funding BWSP 1. The Scope of Services for BWSP1 includes design, rehabilitation of the existing Barari Water Works (BWW) and the existing transmission and feeder networks, construction of new overhead tanks (OHTs), optimizing the existing distribution network and construction of new distribution pipelines as required including metered household connections, and operation, maintenance and management (O&M) of the water supply system. BWSP 2, to be funded under Tranche 2 of BUDIP, is expected to be tendered in 2014 and will provide a new intake, treatment and transmission works and related O&M. The development period of both tranches is expected to be coterminous, such that bulk water extracted from the River Ganga from the new intake and treatment works will supply the new distribution system at the time of the Scheduled Development Completion Date of BWSP1 in 2018.

1.1.2. The Scope of Services described hereunder is neither exhaustive nor complete and is indicative only. The Contractor shall undertake its own detailed investigation of the Project Facilities to determine the complete Scope of Services for achieving the Minimum Service Levels as stipulated in Clause 14 Performance Standards in Section 6.1 Scope of Services.

1.1.3. The Scope of Services shall include all technical, managerial, administrative, commercial, environmental, and social interventions as required in accordance with acceptable, prudent water utility construction and management practices, ensuring safe and sustainable drinking water supply services to the Consumers in the Service Areas.

1.2. Definitions

The words, terms and expressions beginning with capital letters and defined under this Section 6, Clause 1.2 including those in Section 7 - General Conditions of Contract and those in Section 8 – Particular Conditions of Contract shall, unless the context otherwise requires, have the meanings ascribed thereto/herein:

“Auditing Body” or “AB” means the technical auditor appointed by the Employer for independent audit of the performance of the Contractor under the Contract;

² <http://www.adb.org/projects/documents/bihar-urban-development-investment-program-rrp>

“Barari Water Works” means the civil, mechanical, electrical and instrumentation works available as part of the three water treatment units and related intake wells and pumping systems available at Barari in Bhagalpur;

“BMC” means the Bhagalpur Municipal Corporation including all its successors, assignees;

“BMC Personnel” means all those employees of BMC currently working on provision of water services but excluding the hired laborers provided by local contractors;

“Boundary Limits” shall mean the boundary within which the Contractor has the responsibility of providing Services in accordance to the terms and conditions under this Contract;

“BRJP or Jal Parishad” means the Bihar Rajya Jal Parishad of Bihar State;

“BUDIP” means Bihar Urban Development Investment Program;

“BUIDCo” means Bihar Urban Infrastructure Development Corporation Limited;

“Bulk Water” means the treated bulk water supplied by BMC/BUIDCo through a separate contract at the OHT inlet points;

“Bulk Water Supply Point” means the point as specified in the document, where BMC/BUIDCo through a separate contract shall supply Bulk Water;

“Contractor Personnel” means those employees hired and deployed by the Contractor in provision of Services but excluding the BMC Personnel;

“CPHEEO” means the Central Public Health and Environmental Engineering Organization under the Ministry of Urban Development, Government of India;

“Consumer or Customer” means all entities (including individuals) to which/whom BMC provides water services through the existing water distribution system or through the newly developed system and includes all existing customers at the time of the Commencement Date and entities which become customers after the Commencement Date;

“Customer Service Centers” means the special infrastructure planned and implemented by the Contractor to provide commercial and public relations services to consumers under this Contract;

“Contract Date” shall mean the date on which the Parties have signed this Contract;

“Contract Period or Total Contract Period” means the period of Contract spread over 2920 days from the Commencement Date up to the Contract Completion Date;

“Critical Measurement Points” shall mean the locations as agreed by the Employer in the Service Improvement Plan and also as added during the term of the Contract for undertaking measurement of flow and pressure in the water supply system for facilitating the monitoring of Minimum Service Levels stipulated in Clause 14 – Performance Standards;

“Consumer Water Connection Points” means the water connection points from which Customers take delivery of water;

“DPR” means the Detailed Project Report of Bhagalpur Water Supply Project (BWSP1) prepared and approved by the Employer;

“Design and Supervision Consultant” means the agency appointed by the Employer to provide design and construction supervision services under a separate Contract;

“Development Commencement Date” shall mean the date, 365 days from the Commencement Date, on which the Contractor shall commence the implementation of Works as per the agreed Service Improvement Plan;

“Development Period” shall mean the period commencing from the Development Commencement Date and up to the Schedule Development Completion Date;

“Development Period Milestones” means the milestones to be achieved during and at the end of the Development Period as provided at Sub-Clause 9.10.4;

“Distribution Charge” shall mean the charge per cubic meter of water supplied to authorized consumers payable to the Contractor as agreed by the Employer;

“Electricity Department” means the local service provider supplying electrical energy for Operation Service of the Facilities;

“Existing Assets” means those infrastructure components, plant, machinery, equipment and any other units existing at the Site as on the Commencement Date;

“Government Agencies” means all those agencies comprising of local, state and central government authorities directly or indirectly connected to provision of water services to consumers in Bhagalpur;

“Guaranteed Minimum Operating Payment” shall mean the minimum Operating Payment guaranteed to be paid to the Contractor for undertaking the Services;

“Initial Take Over Date” shall mean the date on which the Contractor takes over from BMC, the responsibility of management, operations, maintenance of all infrastructure related to water supply provision to the consumers in Bhagalpur;

“Major Maintenance” means large capital maintenance works requiring replacement of existing infrastructure like pumps, motors, pipes, transformers, instrumentation, civil structures other than procured and installed by the Contractor;

“Mandatory Works” means those works which are listed in the Bill of Quantities and are required to be constructed, installed or erected as the case may be and commissioned in line with the provisions of this Contract unless such works may require change of scope or design as agreed by the Parties as part of the Service Improvement Plan;

“Minimum Service Levels: means the levels of service to be maintained in the operations, maintenance and management and service delivery to consumers more so described in Clause 14 – Performance Standards in this Section;

“Minor Maintenance” means routine preventive or corrective maintenance works such as minor repair, reconditioning, or replacement of spare parts to ensure serviceability of existing and new infrastructure assets procured and installed by the Contractor including pumps, motors, pipes, electrical equipment, flow meters, pressure monitoring equipment, and customer meters;

“New Assets” means those infrastructure components, plant, machinery, equipment and any other units procured, supplied, installed, erected and commissioned by the Contractor during the Development Period other than those existing in the Site as on the Commencement Date;

“Non-Performance Adjustment” means the adjustment in Operating Payments made by the Employer from the Contractor Payment due to failure to meet the Minimum Service Levels stipulated in Clause 14 – Performance Standards in Section 6.1 Scope of Services;

“Operating Payments” shall mean the eligible payments towards production and distribution of water which shall comprise of Production Charges for production from BWV and tube wells and Distribution Charges for supplying water to the consumers;

“Performance Standards” mean the Minimum Service Levels to be achieved and maintained by the Contractor during each period of the Contract set forth in Clause 14 – Performance Standards in this Section;

“Planned Maintenance” means activities required to undertake preventive maintenance of all assets existing or proposed to be installed under the Contract;

“Potable Water Specification” means the water quality requirements of potable water to be supplied to the Consumers as stipulated in Table 2.2 Recommended Guidelines for Physical and Chemical Parameters and Table 2.3 Bacteriological Quality of Drinking Water, in the Manual on Water Supply and Treatment, CPHEEO, Government of India, Ministry of Urban Development, New Delhi;

“Preparatory Period” is the period of Contract commencing on the Commencement Date and up to 365 days, or as extended by the Employer on mutual agreement, during which time the Contractor will prepare the Service Improvement Plan;

“Production Charge” shall mean the agreed the charge per cubic meter of production of water either from BWV or from tube wells payable to the Contractor as agreed by the Employer;

“Project Facilities” or “Facilities” means all existing and proposed infrastructure facilities including open lands, buildings, structures, Plant, machinery, and equipment under BWSP1;

“Project Information Memorandum or PIM” shall mean the report prepared by the Employer detailing the Project as provided in Section 6.4 Supplementary Information and available at the e-data room set up by the Employer;

“Project Management Consultant” means the agency appointed by the Employer to provide project management advisory services to the Employer

“Raw Water Quality” shall mean the range of water quality characteristics provided in the Report on Raw Water Analysis (August 2011) included in Section 6.4 Supplementary Information;

“Release Event” shall mean an event such as no availability of water at the source, no availability of electricity, provision of raw water that does not meet the required specifications, etc., or an event of force majeure;

“Schedules or Schedule” means the schedules forming part of this contract, or any one of them, as the context requires;

“Scope of Services” shall mean all those services to be provided by the Contractor in accordance to the obligations, activities, responsibilities and tasks in implementing the Project to achieve the Minimum Service Levels in accordance to the Clause 14 – Performance Standards;

“Scheduled Development Completion Date” or “SDCD” shall mean the date by which the construction of all the Works as per the agreed SIP are completed, commissioned, tested and certified by the Employer’s Representative ending the phase of Development Period of the Contract;

“Services” means all those activities, interventions, actions and tasks required as part of the implementation of BWSP1 including all planning, design, detailed engineering, procurement, construction, rehabilitation, operations, maintenance, and management in providing continuous pressurized water supply to the consumers in Bhagalpur;

“Service Area” means the area where BMC is responsible for provision of water supply services to customers. The Service Area can be either within the administrative municipal boundary as extended from time to time and also include future growth areas where BMC decides to provide expansion of water services and undertake operation, maintenance and management services; and

“Service Improvement Plan” means the detailed techno-economic and financial investment plan prepared by the Contractor to achieve the Minimum Service Levels stipulated in Clause 14 – Performance Standards in this Section.

2. Contract Key Dates

2.1. The following key dates govern the term of Contract:

- a. The Contract Date shall be the date on which the Contract is signed by the Parties;
- b. The Commencement Date shall be the date on completion of 90 days from the Contract Date by which the Contractor commences mobilization of personnel and preparatory studies;
- c. The Initial Takeover Date shall be the date on completion of 182 days from the Commencement Date, and from the Initial Takeover Date the Contractor shall be responsible for Operations and Maintenance and provision of all services;
- d. The Development Commencement Date shall be the date on completion of 365 days from the Commencement Date and the Contractor shall be responsible to commence the implementation of its approved Service Improvement Plan;
- e. The Scheduled Development Completion Date shall be the date on completion of 1278 days or 42 months from the Development Commencement Date or extended by the Employer under exceptional circumstances; and
- f. The Contract Completion Date shall be the final date on which the Contract expires.

3. Phasing of Contract

- 3.1. The Contract is divided into three phases spread over a period of 2920 days or 96 months from the Commencement Date up to the Contract Completion Date.
- a. Preparatory Period (365 days or 12 months): This phase is spread from the Commencement Date up to the end of 365 days or as extended by the Employer on mutual agreement;
 - b. Development Period (1278 days or 42 months): This phase is spread from the Development Commencement Date up to the Scheduled Development Completion Date (SDCD) which occurs at the end of 1278 days or as extended by the Employer; and
 - c. Operation Service Period (2738 days or 90 months): This phase is spread over 2738 days commencing from the Initial Takeover Date up to the Contract Completion Date.

The Scope of Services during each period of the Contract is detailed hereunder.

4. Scope of Services

- 4.1. The Scope of Services under this Contract include all planning, survey, investigation, design, detailed engineering, procurement, construction,

operation, maintenance and management activities required to improve the entire supply and distribution chain of existing infrastructure for water extraction, treatment, pumping, transmission, storage, distribution and commercial services for efficient and effective management. It includes the rehabilitation of the existing water treatment works, existing transmission and feeder networks, new overhead tanks (OHTs), and existing and new distribution network including metered household connections.

- 4.2. The Contractor employed under this BWSP1 Contract shall be responsible for production from the existing Barari Water Works as well as from all the functional tube wells until the commissioning of the new intake, treatment and transmission works after which the tube wells shall be progressively decommissioned. The list of tube wells is provided at Annex A in the Project Information Memorandum provided at Section 6.4 and available in the e-data room at BUIDCo.
- 4.3. The Scope of Services for BWSP1 does not include construction of the new intake, new water treatment works, and new treated water pumping and transmission infrastructure all of which shall be taken up under BWSP2 under a separate contract. The O&M of the new intake and new treatment plant planned to be commissioned in 2018, will be carried out by the designated contractor for bulk supply under BWSP2. This contractor will deliver the required volume of water at the designated quality and pressure at the inlet of the Overhead Tanks during all demand periods including the peak demand flow times.

5. Boundary Limits

- 5.1. The Boundary Limits for undertaking planning, design, construction, rehabilitation, distribution, operations, maintenance and management by the Contractor shall include all the supply chain of water services starting from water extraction points in the River Ganga or the Champa Nala as the case may be and also from each of the production tube wells currently in operation and extending up to the customer boundary limits including the customer meter if installed on the existing connections and up to the customer meter in all the new or rehabilitated connections. The Boundary Limits shall also include the entire Barari Water Works area, administrative or management offices, stores, workshops if any, and future operational areas such as customer service centers etc., related to the water supply system in Bhagalpur.

6. Summary Obligations

- 6.1. The key obligations of the Contractor under the Contract are summarized in the following table.

Table 6.1: Summary of Key Obligations of the Contractor

Component	Study	Design	Rehab	Build	Operate	Maintain
A. Existing						Minor Major

Infrastructure							
Intakes	Yes	No	No	No	Yes	Yes	No
Raw water pumping machinery	Yes	No	No	No	Yes	Yes	No
Water Treatment Works 1&2	Yes	Yes	Yes	No	Yes	Yes	No
Water Treatment Works 3 Jewel Filters	Yes	Yes	Yes	No	Yes	Yes	Yes
Treated water pumping machinery	Yes	Yes	Yes	No	Yes	Yes	Yes
Transmission mains	Yes	Yes	Yes	No	Yes	Yes	No
Tube wells	Yes	No	Yes	No	Yes	Yes	No
Tube well pumps	Yes	No	No	No	Yes	Yes	No
Overhead Tanks	Yes	Yes	Yes	No	Yes	Yes	No
Distribution System	Yes	Yes	Yes	Yes	Yes	Yes	Yes
House Service Connections	Yes	Yes	No	Yes	Yes	Yes	Yes
B. New Infrastructure							
Intake	No	No	No	No	No	No	No
Treatment Works	No	No	No	No	No	No	No
Treated water pumping machinery	No	No	No	No	No	No	No
Transmission mains	No	No	No	No	No	No	No
Overhead Tanks	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distribution System	Yes	Yes	Yes	Yes	Yes	Yes	Yes
House Service Connections	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Customer Service Centers	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Meter reading, billing and collection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Management Information System	Yes	Yes	Yes	Yes	Yes	Yes	Yes

7. Preparatory Period

7.1. During the Preparatory Period, the Contractor shall make a comprehensive assessment of the capacity, performance and condition of all existing extraction, production, transmission, and distribution infrastructure, as well as existing resources, services, and management practices in the Service Area, and prepare a holistic and comprehensive Service Improvement Plan hereinafter referred to as the ‘SIP’ for improving water services in accordance to Clause 14 – Performance Standards in Section 6.1 Scope of Services. This will include studying the existing raw water intakes, three water treatment works, treated water pumping and transmission regime and water distribution system, conducting an asset condition assessment, preparing an asset inventory report, baseline water balance, energy audit, and strategy for

improving services with a focus on optimization of performance of existing assets and staff, and improving Consumer services.

7.2. General

- a) The Contractor shall establish contact with all relevant stakeholders, including consultants under the Bihar Urban Development Investment Program (BUDIP), and become familiar with the Bhagalpur water supply system, and the applicable standards and guidelines for water supply design, and with past and current on-going works in the Service Area.
- b) Satisfy themselves as to the nature and scope of work and the prevailing Site conditions.
- c) Liaise with Bhagalpur Municipal Corporation (BMC), the local traffic police and other government agencies regarding governing Laws and regulations in order to undertake studies and construction activities under the Contract such as:
 - i. Environmental and social impact assessments and prevention, mitigation and monitoring of impacts during construction;
 - ii. Compensation for damages to property;
 - iii. Occupational health and safety including workers compensation;
 - iv. Consultation of beneficiary populations; and
 - v. Signage for construction works.

7.3. Integration with On-going Activities

7.3.1. There are several other extraction, production and network improvement activities that are either on-going or have been recently completed by BMC and/or Bihar Rajya Jal Parishad (BRJP) and/or Bihar Urban Infrastructure Development Corporation (BUIDCo). The Contractor shall review all the reports and ensure that the SIP does not duplicate any measure already financed and implemented, or proposed to be implemented under BWSP2, but rather complements these other investments and highlights proven approaches/techniques/policies that could be utilized for the SIP to enhance project effectiveness and efficiency. The Contractor shall also ensure that investments proposed as part of the SIP are independent of the other interventions so that it can be adequately implemented, constructed, managed, supervised, monitored and finally be evaluated in terms of its impact. However, these investments shall be complimentary to the outcomes of the previous or other ongoing interventions.

7.4. Institutional Arrangements and General Compliance

7.4.1. The Contractor shall read, familiarize itself with and understand the relevant institutional arrangements and governing Laws to determine in detail which roles BMC, as the asset holding and operating entity, plays in the following: (i) sanction of water connections, (ii) installation of water connections, (iii) disconnections and reconnections, and (iv) services to urban poor areas as applicable, so that the SIP conforms with them.

- 7.4.2. The Contractor shall also review and validate the Detailed Project Report for the scheme and ensure that the SIP is in line: (i) with the Detailed Project Report (DPR) approved for funding, (ii) in compliance with the Draft Master Plan – Vision 2027 for Bhagalpur Town, (iii) in compliance to the terms and conditions of the Project and Loan Agreements among ADB, Government of India and Government of Bihar under BUDIP and (iv) coordinated with the on-going and programmed activities of other development programs like Rajiv Awas Yojana (RAY), Swarna Jayanti Sahakar Rojgar Yojana (SJSRY) and other programs being implemented by BMC and GoB as the case may be. Any deviations to the DPR shall be highlighted and approved as part of the SIP. Under no circumstance, should implementation of such interventions result in Variation of more than 25% of the agreed contract value under this Contract.
- 7.4.3. In case of any interventions proposed in the SIP which are not part of the DPR or those interventions which are part of the DPR but require improvement from conventional design practices, the Contractor shall provide sufficient explanation and justification as to how implementing such interventions would influence the achievement of the Performance Standards stipulated in Clause 14 in Section 6.1 Scope of Services.
- 7.4.4. In a situation where the Employer does not agree to such interventions, there shall be mutually agreed revision of the Performance Standards which are referred to and agreed upon by the Auditing Body (AB).

7.5. Preparatory Surveys

- 7.5.1. The Contractor shall undertake a detailed topographical survey³ covering the entire Service Area and existing infrastructure that is from the source to the customer. The survey data shall be sufficient to develop a comprehensive Geographical Information System (GIS) clearly depicting the locations of both over ground and underground existing assets up to 50mm diameter size as well as un-covered areas within the municipal boundary.
- 7.5.2. All key elevations with geo-reference and all physical features like roads, culverts, drains, nalas, electrical transformers and any other relevant features which would influence installation and maintenance of existing and/or new pipe lines, pumping stations, service reservoirs, etc., shall be captured in the survey and the service area maps are to be prepared in 1:2000 scale.

7.6. Consumer Survey

³ As part of the preparation of the Detailed Project Report the BUDIP consultants have undertaken a topographical survey of the city the details of which are made available through the electronic data room.

7.6.1. The Contractor shall undertake a door-to-door survey of all Consumers whether connected to the network or un-connected and obtain the details in regard to name, address, number of resident members, availability of water connection, estimated consumption levels, alternate water supply arrangements, method of disposal of wastewater, etc. The consumer survey shall capture the details of all consumers whether connected or un-connected in the categories of general residential households (independent housing, group housing connections and apartments), urban poor households, government housing, non-domestic, commercial, institutional, religious places, industrial and fire services and any other category of customers resident in the Service Area.

7.7. Water Quality Analysis

7.7.1. The Service Area is currently supplied with a combination of surface water from the River Ganga and ground water from about 61 tube wells in addition to hand pumps and other sources.

7.7.2. The Contractor shall organize to collect four samples each for the raw water and treated water from BWV and two samples from each of the tube wells currently in operation. The samples collected shall be analyzed for all the physical, chemical and bacteriological characteristics in any reputed lab as approved by the Employer. The results of the water quality analysis shall be evaluated for undertaking any emergency measures like closure of tube wells with Arsenic or any other harmful chemical constituents or ensuring robust disinfection in case of bacteriological contamination as the case may be. Any de-commissioning of the tube wells shall be undertaken by the Contractor upon obtaining necessary approvals from the Employer and BMC to that effect and the Works shall be undertaken with prior notice to local customers with information about the reasons for such decommissioning and the availability of an alternate source of water supply.

7.7.3. Water quality surveillance during the remaining period of the contract shall be governed by the Particular Specifications of this Contract.

7.8. Evaluation of Existing Treatment Works

7.8.1. The Contractor shall undertake a detailed study of the existing Barari Water Works which shall include a condition assessment of all civil, mechanical, electrical and instrumentation infrastructure, efficiency of treatment process, output capability of the plant and the treated water pumping system so as to deliver a minimum of 17 million liters per day of water conforming to the water quality standards stipulated in Clause 14 – Performance Standards in Section 6.1 Scope of Services. To this effect the construction scope includes certain lists of Works and the Contractor while implementing these Works may propose any other process improvement requirements on a quick fix basis for further evaluation by the Employer. The Employer reserves the right to either approve the proposed additional Works or reject the same in accordance

to the Variation provisions of this Contract provided such rejection does not result in a change in the water quality requirements stipulated in Clause 14 – Performance Standards in Section 6.1 Scope of Services.

7.9. Assessment of Distribution System

7.9.1. During this phase of the work the Contractor shall study the existing water transmission and distribution network within and outside the Service Area and carry out a water audit to establish the current water balance in terms of consumption, physical losses and apparent losses, determine the capacity of the existing system, and remodel the system into manageable District Metered Areas (DMAs) to improve network management and efficiency, or in exceptional circumstances install new network assets to meet the relevant Performance Standards in Clause 14 in Section 6.1 Scope of Services.

7.9.2. The Contractor shall prepare a baseline report describing the water transmission and distribution system including water sources, storage, and supply zones, and their condition. This will include pipe material, dimensions, age, and condition, extent of Consumer water connections, meters and their operating condition, and current estimate of illegal connections, etc.

7.10. Network Condition Assessment

7.10.1. The Contractor shall undertake the condition assessment of the networks through Flow and Pressure Measurement (FPM) and review of historical repairs data if available and through detailed interactions with the operating staff and assess the strength and capacity of the networks for provision of continuous pressurized water services to the customers in accordance to the Clause 14 - Performance Standards in Section 6.1 Scope of Services.

7.11. Hydraulic Network Model (HNM)

7.11.1. The Contractor shall develop a Hydraulic Network Model (HNM) which includes all pipelines down to 50mm diameter based on the available information and by undertaking Site investigations as required. The HNM shall be built on a Digital Elevation Model (DEM) of the city depicting 1m elevation contours. The data pertaining to reservoirs, pipes, valves and demand allocations shall be obtained through field study and captured on the network model. AutoCAD or equivalent shall be the drawing software and EPANET or equivalent shall be the modeling software for building the network model. The Contractor shall then use the data from flow and pressure testing to calibrate the network model to represent the field conditions.

7.11.2. Using the hydraulic model and simulating both present and future conditions, the Contractor shall review the present distribution zones and shall design DMAs as required from a continuous water service

perspective and propose network replacements for improving the network efficiency for ensuring continuous pressurized water supply to the Consumers.

7.11.3. The Contractor shall investigate and recommend options for improved network and pressure management considering the migration from intermittent supply to continuous water supply.

7.12. Updating Draft Initial Environmental Examination (IEE) and Resettlement Plan (RP)

7.12.1. Upon completion of SIP and all detailed design, the Contractor will update the draft IEE and EMP for the Project, contained in Annex C, to reflect the changes, submit the updated IEE and EMP to the Employer for review and submission to ADB, and shall not commence any works, until the final approval of both is obtained from ADB.

7.12.2. Upon completion of SIP and all detailed design, the Contractor will update the draft RP for the Project, contained in Annex D, to reflect the changes, submit to the Employer for review and submission to ADB, and shall not commence any Works, until the final approval of the RP is obtained from ADB.

8. Service Improvement Plan (SIP)

8.1. The SIP essentially comprises of the following three parts⁴:

8.1.1. Part I – Draft Baseline Report:

- a. The baseline report on the levels of service from the existing production, transmission and distribution system in the Service Area;
- b. The results of flow and pressure measurements, and the condition assessment of existing water supply infrastructure;
- c. consumer survey findings; and
- d. Working hydraulic network model(s) of the entire transmission and distribution mains responsible for servicing the Service Area.

8.1.2. Part II – Draft Service Improvement and Investment Plan:

- a. A robust water demand model duly considering the findings from the consumer survey;
- b. Detailed designs, drawings and cost estimates of Works and management improvements proposed in order to meet the Performance Standards in Clause 14 in Section 6.1 Scope of Services;
- c. Investments required for the Works and management improvements proposed;
- d. Asset Replacement Schedule;

⁴ The Contractor will submit fully completed reports or documents. These are only referred to as “drafts” before review and approval by the Employer

- e. Methodology and timelines for implementation;
- f. Contractor Personnel deployment plan;
- g. Construction Plant and equipment deployment plan;
- h. Cash-flow plan during each of the contract periods; and
- i. Detailed methodology for continuous monitoring of the performance of the Contractor in achieving and maintaining the Performance Standards for release of the eligible Operating Payments.

8.1.3. Part III – Draft Operating and Management Procedures and Policies:

- a. Annual Operating Plan (AOP) covering all operations, maintenance and management requirements in the Service Area;
- b. Emergency Response Plan (ERP);
- c. Customer Management and Public Relations Plan;
- d. Standard Operating Procedures (SOPs) for routine operations and emergency responses;
- e. Water Quality Surveillance Program;
- f. Energy optimization program;
- g. Connections policy for all types of connections including services to the urban poor and treatment of illegal connections;
- h. Network expansion policy;
- i. Detailing of an Integrated Management Information System (IMIS) including its architecture, data capture, management and reporting structures, protocols including all related hardware, software, installation, and operation and maintenance requirements; and
- j. Periodic reporting plan including the formats for different performance reports.

8.2. The Contractor shall submit the draft SIP within 300 days from the Commencement Date to allow the Employer to undertake a thorough review of the draft SIP and suggest amendments if any. The Employer and the Contractor shall sign off the agreed SIP within 335 days from the Commencement Date or by such date permitted by the Employer and under no circumstances should it be more than 365 days from the Commencement Date.

9. Development Period

9.1. The Scope of Services during the Development Period shall essentially comprise of implementing the approved SIP while providing management services for improving operations and maintenance services for the existing water supply facilities..

9.2. The implementation of the SIP shall be in accordance to international best practice and industry standards and sufficient care shall be taken by the Contractor in minimizing supply interruptions, traffic disruptions and ensuring good and timely communications with the Consumers in the Service Area. All the Works and interventions proposed as part of the SIP shall be in conformity with the Technical Specifications and Particular Specifications as set out in the Employer’s Requirements respectively. The SIP components

relating to this period essentially comprise of but are not limited to the following.

9.3. Mandatory Works

9.3.1. The Contractor shall construct or install the Mandatory Works as detailed hereunder, which is included as per the Bill of Quantities (BOQ) for the purpose of pricing in the Price Bid. The Works as per the BOQ essentially constitute the following:

- a. Rehabilitation of the water treatment works;
- b. Rehabilitation of the treated water pumping machinery;
- c. Installation of a 33 kV power line is not in the scope of contract, however, the Contractor will provide the 33kV/0.433kV step-down sub-station, switchboard/control panels and other associated electrical works;
- d. Rehabilitation of one existing overhead tank (OHT);
- e. Construction of about 16 new overhead tanks (OHTs);
- f. Supply, laying, jointing, hydraulic testing and commissioning the approximately 410 kms of water distribution system including the existing and new networks as per scope indicated in the BOQ;
- g. Installation, hydraulic testing and commissioning of new metered house service connections for all categories of consumers authorized by BMC; and
- h. All Works related to operations, maintenance and management improvements including setting up management information systems, customer service centers, billing and collection systems, contractor office, operational equipment, tools and Plant, etc.

9.3.2. The Works proposed in the BoQs as summarized above are indicative only and the Employer holds no liability on the guaranteed performance of the proposed Works. The Contractor shall investigate, survey, assess the existing infrastructure and shall design and propose the actual Works to be implemented as part of the SIP. Any deviations and cost implications due to changes in the proposed Works when compared to the Works included in the BoQs should be explicitly included in the SIP for approval with adequate justification.

9.4. Rehabilitation of Existing Production Works

9.4.1. The existing Barari Water Works (BWW) has a designed production capacity of about 17mld but is constrained by limitations in source availability at the extraction point, ageing of assets and lack of funds for timely maintenance.

9.4.2. At the Initial Takeover Date, the Contractor shall take over the BWW in an “as is” condition, provide operating services, and implement the Works agreed as part of the approved SIP. Based on a preliminary survey, certain lists of Works have been included as part of the

Mandatory Works and the Contractor shall implement these Works for ensuring sustained production of at least 17mld of safe treated water at any given point of time. Efforts shall be made to increase the supply up to the hydraulic capacity of the Works so that during the times of sufficient raw water availability the Contractor can produce increased volumes of treated water to meet the demand needs in the Service Area. The scope also includes improving and operating the raw water and treated water pumping machinery. The Contractor may recommend other suggested measures for its improvement in the SIP.

9.4.3. The Contractor shall take over the existing functioning tube wells fitted with power pumps and implement the Works agreed as part of the approved SIP, and ensure that the water is treated to ensure the required standard for residual chlorine. Implementation of such Works shall be carefully examined and evaluated as to whether the tube well would have the capacity to sustain the required quantity and quality of water up to the Contract Completion Date. If the evaluation is not positive, the Contractor shall, with the permission of Employer, discontinue implementation of rehabilitation works for the given tube well.

9.4.4. Rehabilitation of the BWW shall be completed within one year from the Initial Takeover Date. On completion of the Works, the Contractor shall continue to be responsible for operating and maintaining the BWW up to the Contract Completion Date.

9.4.5. The detailed Scope of Services for the rehabilitation of the existing water treatment works process components, and for electrical and mechanical and instrumentation are attached separately as Annex A and B.

9.5. Rehabilitation of One Existing OHT

9.5.1. The Contractor shall undertake the rehabilitation of the existing OHT located at Chatrapathi Talab as per the list of Mandatory Works to make it fit for service as well as to monitor the flow and pressure regimes. The Works include structural repairs if any, painting, cleaning and disinfecting the container, installation of water level indicators, reconditioning of all valves and piping for inlet, outlet, wash out, and overflow, cleaning the yard, installation of flow and pressure monitoring instrumentation, lighting, and appropriate signage.

9.6. Network Improvements

9.6.1. Based on the approved SIP, the Contractor shall undertake detailed engineering design of the network improvement works and implement the same at the Site in accordance to the technical specifications and prudent industry practices. The Contractor shall propose measures to optimize the performance of the existing assets duly assessing the extendable residual life of the assets. The primary objective of the

Network Improvements is to ensure rationalized, equitable, continuous and pressurized water services to the Consumer in the Service Area.

9.6.2. The improved network shall exhibit increased hydraulic carrying capacity to meet the demand needs for the year 2047 and shall deliver water at a minimum pressure of 12 meters at any of the Ferrule Points as measured at the Critical Measurement Points during peak hour flow conditions in accordance to the Clause 14 - Performance Standards in Section 6.1 Scope of Services. The network shall be fitted with isolation valves such that any intervention for maintenance like extensions, connections, and leak repair shall not affect more than 100 consumer connections.

9.6.3. Implementation of the network improvements shall be planned such that the current service area covered under the existing OHTs are taken up on the first priority followed by other areas to be commissioned in sequence to synchronize with the implementation and commissioning of new source and new water treatment works. In this way, the Contractor will make use of the existing customer base to introduce improved levels of service, and this will help generate demand in the new service areas to be taken up, as well as optimize use of existing assets to the extent possible.

9.7. Setting up DMAs

9.7.1. The Contractor shall, based on the results of the HNM, set up hydraulically isolated district metered areas (DMAs) within the Service Area with each DMA comprising of about 2,000 to 3,000 consumer connections. Each DMA shall preferably have one inflow point and be isolated by installing boundary isolation valves. The inflow shall be fitted with an electro-magnetic bulk flow meter of reputed make synchronized with a sufficient capacity data logger and the facility to record, store, monitor and analyze the consumption pattern in the respective DMA. The Contractor shall identify at least two Critical Measurement Points (CMPs) in each DMA for continuous logging of pressure, and the CMPs shall be such that they should be at the highest and farthest points from the command reservoir. The Contractor shall ensure the periodical calibration of the flow and pressure monitoring equipment and capture the data generated by the respective equipment, analyze and monitor the consumption and level of losses in the DMAs and take remedial actions as necessary to meet the Minimum Service Levels.

9.8. Consumer Connections

9.8.1. The Contractor shall undertake installation of consumer connections by replacing the existing connections with better and higher standard of pipe material, good network connecting practice, installation of right size ferrules/saddles, installation of a Class B multi-jet Consumer meter, accessories and meter chamber at the nearest point inside the Consumer property boundary.

9.8.2. **Services to the Urban Poor:** In the case of urban poor areas in the Service Area, the Contractor, in accordance to the approved connections policy, shall undertake provision of house service connections to individual households as well as provide shared connections to a maximum number of 5 (five) households where individual connections are either not feasible or not sought by the Consumers. With the installation of house service connections and ensuring improved services, the public stand posts existing in the respective areas shall be progressively removed unless expressly permitted by BMC. Any permitted public stand posts shall be rehabilitated with sturdy plumbing and good quality stopcocks and shall be provided with a Consumer meter for the purpose of accounting the consumption from the respective tap. The Contractor shall suggest the framework for assigning the responsibility for managing these public stand posts as part of the connections policy in the SIP.

9.8.3. **Bulk Water Supply Connections:** In the case of bulk water supply connections of sizes equivalent or higher than 25mm dia. to bulk customers such as apartments, housing societies or private layouts within the Service Area, the Contractor shall install a suitably sized, accurate consumption meter.

9.8.4. **Illegal Connections:** The Contractor based on the findings from the Consumer Survey, and in accordance to the approved connections policy, shall identify the illegal or un-authorized connections and inform BMC for regularization of the connections. On approval and after payment of prescribed charges by the Consumer, the Contractor shall then rehabilitate the connection with good plumbing material and a Consumer meter. Until approval of regularization by BMC, the Contractor shall prepare and send temporary bills at the prescribed tariffs for such illegal connections and receive payments and undertake disconnection of such Consumers who have not honored the payment obligations.

9.9. Consumer Service Centre

9.9.1. The Contractor shall design, develop and set up consumer service centers (CSC) of at least one center for every 10,000 connections including one central control center to facilitate receiving and resolving consumer requests in the areas of new connections, service deficiencies, resolution of billing disputes, etc. The Centers shall function between 8am to 8pm during all working days and between 8am to 1pm during public holidays including Sundays. The CSC shall have reasonable space and furniture for the Consumers to wait, interact and represent their requirements. During the other off peak times of 8pm to 8am, the Contractor shall have a facility to receive Consumer complaints through telephone, fax, text message, email and any other electronic means. The CSC shall be equipped with sufficient human resources, hardware and software to facilitate continuous record of consumer requests, monitoring the resolution, and reporting completion of necessary actions and tasks.

There shall be an exclusive desk for servicing the urban poor customers preferably serviced by an efficient lady customer representative.

9.10. **Integrated Management Information System**

9.10.1. Within 180 days from the date of approval of SIP, the Contractor, in accordance to the Technical Specifications and Particular Specifications, shall develop, establish, operate and manage during the remaining Contract Term a comprehensive integrated management information system (IMIS) in respect of all matters including but not limited to:

- a. The billings and collection systems;
- b. Consumer services, including data bases relating to complaints and questions, response times and resolution;
- c. Financial management, including accounting systems;
- d. Performance information systems; and
- e. Asset registers from the perspective of maintaining a prudent GIS based or computerized maintenance management system (CMMS) linked to financial and inventory systems.

9.10.2. **Billing and Collection Systems:** Currently BMC collects water revenue indirectly through property tax. It is proposed to introduce metered and volumetric pricing of water soon after implementation of the SIP. To this effect the Contractor shall:

- a. Prepare and monitor the profile of water service Consumers in the Service Area describing Consumer categories and for each category: number of Consumers, estimated average volume of water consumed per month, and estimated average revenue per month;
- b. Develop and implement basic procedures for (i) service connections, (ii) preparing, issuing, and collecting a bill for water service, (iii) how water consumption is estimated for un-metered Consumers, and (iv) dealing with under-payment or non-payment;
- c. Develop and implement: (i) meter reading procedures and arrangements, (ii) meter reader control, and (iii) efficient and accurate meter reading practices;
- d. Develop and implement a portable, battery powered, hand-held, electronic meter reading collection and data storage device, complete with the interface to the proposed billing software; and
- e. Set up and implement in detail the revenue collection procedures, and the facilities for achieving the prescribed level of revenue collection efficiency.

9.10.3. Deliverables: On the Scheduled Development Completion Date, all the works as per the approved SIP shall be completed, commissioned and all legal Consumers shall be provided with safe water supply through Consumer service connections at the Minimum Services Levels

prescribed in the Contract and the Contractor shall have achieved all of the required Performance Standards.

9.10.4. Development Period Milestones: The following milestones shall govern the Development Period commencing from the date of approval of the Service Improvement Plan.

Table 9.1 – Development Period Milestones

Construction Milestones		Period in days from the date of approval of SIP			
Component	Unit	365	730	1095	1278
		Cumulative Milestones			
Rehabilitation of Barari Water Works	Job	100%			
Setting up consumer service centres	Job	100%			
Setting up Operations office	Job	100%			
Distribution system including DMAs and respective OHTs	km	50	150	300	Balance
Consumer connections	Number	5000	15000	30000	Balance

10. Operating Obligations

10.1. From the Initial Takeover Date until the Contract Completion Date the Contractor shall provide the following outsourced activities in connection with the operation and maintenance of the potable water system:

- a. Abstracting raw water from the River Ganga at the existing dry and wet intake wells located at the BWW;
- b. Pumping and transmitting the abstracted raw water to the different treatment units located in BWW;
- c. Treating the raw water to the stipulated water quality standards at the BWW;
- d. Producing available ground water from the existing functional tube wells as per the list provided in the Project Information Memorandum (PIM) provided at Section 6.4 - Supplementary Information, available in the e-data room set up by BUIDCo;
- e. Transmitting the potable treated water from the BWW and the available ground water from the functional tube wells through the rising mains via the treated water pumping stations to the water towers and the distribution network up to the Consumer Water Connection Points;
- f. Carrying out all plumbing and other civil works necessary for providing consumer house connections on approval or sanction from BMC;
- g. Operating the river intakes, pumping stations, water treatment works and potable water transmission pipe system to existing and proposed

- water towers, and the distribution pipe system from the water towers to the consumer properties;
- h. Managing the district metered areas (DMAs) and distribution network for distributing water efficiently and minimizing non-revenue water (NRW) throughout the Operation Service Period;
 - i. Reading and calibrating the customer meters for verification of demand, supply and system losses, supply of consumption data to the Employer to meet their monthly billing requirements and tracking of meter readings against actual bills raised on behalf of BMC;
 - j. Managing the water abstraction points by maintaining required water levels and level instrumentation, de-weeding and de-silting the intake location and monitoring river flow levels;
 - k. Maintaining the infrastructure referred to in subparagraphs (a) to (j) above;
 - l. Sampling raw water at the point it enters the river intake to check whether it meets the limits of raw water quality characteristics detailed in the Raw Water Analysis Report (August 2011) provided at Section 6.4 - Supplementary Information;
 - m. Sampling treated water as it leaves the water treatment works to ensure that it meets the Potable Water Specification; and
 - n. Detecting and monitoring non-revenue connections and consumption.
- 10.2. The Contractor shall also ensure that the treated water leaving the BWW and the functioning tube wells shall meet the Potable Water Specification. During the Development Period the requirement is to treat the water to meet the water quality requirement for residual chlorine; and after the Schedule Development Completion Date the full Potable Water Specification will apply.
- 10.3. If the raw water required for the supply of potable water fails to meet the raw water quality characteristics detailed in the Raw Water Analysis Report (August 2011) provided at Section 6.4 - Supplementary Information, available at the e-date room, and this failure means the treatment processes available to the Contractor at the date of this Contract are not adequate to treat the raw water to meet the Potable Water Specification, then the Contractor shall take necessary remedial steps to meet the Potable Water Specification. In the event that this results in additional costs, then the Contractor shall notify in writing the Employer with the details of all such costs which shall be borne by the Employer, and the Employer shall indemnify the Contractor against any and all loss of revenue, cost, penalty, claim, damage, injury, charge, fine, levy or liability (to the extent permitted by law) suffered by the Contractor as a result of such failure.
- 10.4. From the Initial Takeover Date the Contractor shall supply potable water to the legal and authorized Consumers through the distribution network at the progressively increasing service levels as stipulated in Clause 14 – Performance Standards in Section 6.1 Scope of Services, and further determined and confirmed by the Parties during the Preparatory Period subject to Planned Maintenance. Subsequent to the completion of the Development Period, the Contractor shall supply potable water 24 hours per

day (subject to Planned Maintenance and availability of sufficient bulk potable water from the BWSP 2 Project) to those Consumers where the network rehabilitation works are completed and commissioned to the extent that the Parties consider it appropriate and feasible, as agreed in writing.

- 10.5. If the Contractor fails to achieve the services defined in this Clause, then the Contractor shall be levied with Non-Performance Adjustment as specified in Schedule 5 – Contractor Payments. The Contractor shall not be liable for Non-Performance Adjustment to the extent such failure is attributable to a Release Event in which event the Contractor shall take necessary steps to mitigate the effects of the event and operate the potable water system in accordance with the standards of a reasonable and prudent contractor.
- 10.6. The Contractor shall take necessary steps to prevent water from entering the potable water system that has not been treated to the Potable Water Specification at the existing BWW and from the tube wells.
- 10.7. The Contractor will manage the available water tankers that exist at the Initial Takeover Date, to supply additional water services during emergencies and for special functions in line with arrangements in place at the date of this Contract and as may be updated from time to time as agreed by the Parties.
- 10.8. The Contractor has developed the agreed Service Improvement Plan with the aim of achieving, on the basis of information supplied by the Employer before the date of this Contract, 24-hour supply of potable water to the majority of the network within the Contract Period (subject to availability of sufficient bulk potable water from the BWSP2 Project). After completion of the Development Period uninterrupted 24-Hour Supply will be provided to all parts of the Service Area with security of supply.

11. Electricity Consumption

- 11.1. The Contractor, during the preparation of the Service Improvement Plan, shall assess the baseline annual average consumption of electricity for unit production and unit distribution of water as per the BMC electricity bill records and appropriate flow measurements. During the term of Contract, the Contractor shall ensure that the annual average consumption of electricity for unit production and unit distribution of water shall not exceed the baseline consumption level established as part of the agreed SIP.
- 11.2. The Contractor shall further establish the improved unit levels of consumption of electricity in production of water on completion of the Development Period, i.e., after completing the rehabilitation works proposed to optimize the consumption of electricity. The Operating Payments for production from BWW shall be subject to adjustment towards excessive consumption or savings of electricity as detailed in Schedule 5 – Contractor Payments.

- 11.3. If at any time either Party has reasonable grounds to suspect that any electricity meter is not accurate in any respect, the discrepancy or suspected discrepancy shall be immediately reported to the electricity department in writing along with any evidence in support of such a claim and the electricity department shall arrange for the testing of the relevant meter.
- 11.4. The cost of testing electricity meters shall be borne by the Contractor except in the case of testing carried out at the instigation of the Employer which shall only be borne by the Contractor if such testing reveals the relevant meters to be inaccurate by more than [3]%, and otherwise by the Employer if within such accuracy standards.

12. Billing and Revenue Collection

- 12.1. Within 182 days from the Initial Takeover Date the Contractor will develop and operationalize the billing software, and meter reading and collection mechanisms required for comprehensive billing and revenue collection.
- 12.2. Within 365 days from the Initial Takeover Date BMC will introduce a water charging regime including a flat rate for unmetered connections and a volumetric rate for metered connections including commercial connections in accordance to Schedule 2 – Obligations of the Employer through BMC.
- 12.3. BMC will remain responsible for all water related revenue arrears due as part of the property tax dated prior to the Initial Takeover Date and up to 365 days thereafter inclusive.
- 12.4. Within 365 days from the Initial Takeover Date and upon introduction of a water charging regime in accordance to Sub-Clause 3.2 and up until the Contract Completion Date the Contractor shall progressively introduce services relating to BMC's billing and collection of revenues for water consumption. All bills will be processed, printed, collated, distributed and handled by the Contractor on behalf of and as an agent of BMC. All revenues shall be invoiced in the name of BMC and paid to BMC. All revenues will be collected by the Contractor on behalf of BMC and deposited into the designated revenue account set up by BMC before the Initial Takeover Date.
- 12.5. The Employer and BMC either individually or collectively shall have full and unrestricted access to the billing software, all current and historical billing data and the consumer service centers operated and managed by the Contractor upon request. All reasonable requests for data and analysis from the billing data system shall not be unreasonably refused by the Contractor.

13. Operation Service Period

- 13.1. Commencing from the Initial Takeover Date the Contractor shall be responsible to undertake all the operations, maintenance and management tasks, and activities as required in accordance with international best practice and prudent industrial standards. During this period, the Contractor shall

provide all necessary services relating to operations, maintenance and management of the entire existing and newly installed infrastructure and provide water supply services to the legal Consumers in the Service Area at the prescribed Minimum Service Levels. This shall include but not be limited to the following:

- a. Production of 17mld and above safe treated water from BWB;
- b. Operations and maintenance of the existing transmission system until completion of the new transmission system;
- c. Production of available water from the functional tube wells as may be necessary depending on the demand needs in the distribution;
- d. Distribution of water supply to all the Consumers in accordance to service levels specified in Clause 14 – Performance Standards in Section 6.1 Scope of Services;
- e. Management and commercial services including new connections, disconnections, reconnections, meter reading, billing, collection of revenue, and recording and redressal of customer complaints;
- f. Operation and management of the IMIS and reporting obligations;
- g. Supply of alternate water supplies in times of emergencies; and
- h. Implementation of all rehabilitation and service improvement works required in any extended area of the Service Area or as necessary due to change in law and as mutually agreed between the contracting Parties.

13.2. **Billing and Revenue Collection Systems**

13.2.1. The Contractor acknowledges that it will, from the Scheduled Project Development Completion Date have full responsibility for billing and collection in the Service Area for and on behalf of BMC, which will be on a monthly basis unless agreed otherwise with BMC.

13.2.2. The Contractor shall:

- a. Collect all amounts due to BMC as revenues related to the water services:
 - i. through BMC’s/Contractor’s billing offices,
 - ii. through banks, electronic transfer, and
 - iii. by other means as may be agreed to by BMC;
- b. Identify and record all outstanding accounts and take all necessary measures to collect outstanding accounts;
- c. Submit to BMC a summary and analysis of unpaid accounts once in every three months; and
- d. Manage all aspects of consumer services with the Consumers.

13.3. **Meter Reading:** The Contractor shall:

- a. Read all consumer water meters in accordance with the general instructions of BMC;
- b. Register all consumer water meter readings in the appropriate computer data base;

- c. Develop a monitoring program of random spot-checks to ensure the accuracy of the meters and the meter reading process and provide written reports to BMC on the results;
- d. Develop and implement a plan the intent of which is to ensure that:
 - i. all consumer meters are accurate,
 - ii. all consumer meters are read,
 - iii. all consumer meters are in suitable locations,
 - iv. problems related to unprotected and unsealed consumer revenue meters are resolved,
 - v. develop and implement a program to estimate consumption in circumstances where metering problems exist, and
 - vi. provide advice as to methods to improve the meter reading process to ensure greater accuracy;
- e. Convert all consumer revenue meter readings to billings to Consumers;
- f. Identify consumer revenue meters which have not been read; and
- g. Respond to reports of malfunctioning consumer revenue meters from Consumers.

13.4. **Meter Testing**

13.4.1. The Contractor shall test and calibrate all water meters as required.

13.4.2. If at any time either Party has reasonable grounds to suspect that any water meter is not accurate in any respect, the discrepancy or suspected discrepancy shall be immediately reported to the other Party in writing along with any evidence in support of such claim and the Contractor shall arrange for the testing of the relevant meter.

13.4.3. If any of the water meters fails to register or, upon testing, is found not to be within the accuracy standards established by the equipment supplier, or the latest revision of the Bureau of Indian Standards (BIS) or other relevant standard, then for the purposes of this Contract a reasonable adjustment in accordance with generally accepted engineering practices shall be made correcting all measurements, and reflecting, if determinable, the actual period during which any inaccurate measurements were made. If such period cannot be determined it shall be deemed to be equal to one-half of the time from the date of the last test of the meter or measuring equipment, provided that the period covered by the correction does not exceed six months.

13.4.4. The cost of all testing of the water meters other than the electricity meters shall be borne by the Contractor except in the case of testing carried out at the instigation of the Employer or Consumer which shall only be borne by the Contractor if such testing reveals the relevant meter to be inaccurate by more than [3]%, and otherwise by the Employer or Consumer if within such accuracy standards.

13.5. **Collection of Water Revenue and Deposit**

13.5.1. With respect to the collection of consumer payments under the sole responsibility of the Contractor, the Contractor shall directly deposit all of the collected consumer payments, whether in the form of cash, cheques or other form, into the designated revenue account owned by BMC by the next working day of each collection. The Contractor can propose as part of the SIP any other form or mode of bill payments such as partnering with banks or other utility bill payment like telephones, electricity companies, etc.

13.6. **Training**

13.6.1. The Contractor shall plan and develop the course content, and implement on-the-job and classroom based training, for BMC deputed staff for at least 30 person days per year commencing from the Initial Takeover Date. Within 365 days from the Contract Completion Date, the Contractor shall organize training for identified shadow managers from amongst the BMC deputed staff in technical, commercial and financial aspects of water services provision to enable BMC to build sufficient capacity and skills to manage the water services after the Contract Completion Date. Commencing from 90 days before the Contract Completion Date, the successor managers either from BMC or from a future Contractor will overlap and co-manage the operations to ensure continuity in service delivery.

13.7. **Draft Initial Environmental Examination (IEE) and Draft Environmental Management Plan (EMP)**

13.7.1. The Contractor will be responsible for (i) finalizing the draft IEE with EMP, attached in Annex C, based on detailed designs, (ii) submitting the same to the client for approval, and (iii) complying with the same throughout the Contract period. No works on the new water treatment plant will commence prior to obtaining the Construction for Establishment (CFE) from the State Pollution Control Board.

14. Performance Standards

The Contract Period is governed by two sets of Performance Standards (clauses 14.1 and 14.2 below) and the Contractor shall be responsible for maintaining the Performance Standards at any given period of time, failure of which will result in Non-Performance Adjustment of eligible Operating Payments in accordance to the procedures in Schedule 5 – Contractor Payments.

14.1 Performance Standards and Measurement Framework during the Development Period

14.1.1. The Performance Standards and measurement framework governing the Development Period of the Contract shall be as detailed below. During this period bulk water to be provided under BWSP 2 is not expected to be available.

Table 14.1 – Performance Standards during the Development Period

S.No.	Description	Details										
1.	Parameter	Minimum hours of water supply in a day in the service area where the network improvements are completed as per the Development Period Milestones										
	Minimum Service Level	<table border="1"> <thead> <tr> <th>Period of measurement from the date of approval of SIP</th> <th>90 percent compliance on minimum hours of water supply</th> </tr> </thead> <tbody> <tr> <td>Up to the 12th month</td> <td>6 hours</td> </tr> <tr> <td>13th to 24th month</td> <td>8 hours</td> </tr> <tr> <td>25th to 36th month</td> <td>12 hours</td> </tr> <tr> <td>37th to 42nd month</td> <td>16 hours</td> </tr> </tbody> </table>	Period of measurement from the date of approval of SIP	90 percent compliance on minimum hours of water supply	Up to the 12 th month	6 hours	13 th to 24 th month	8 hours	25 th to 36 th month	12 hours	37 th to 42 nd month	16 hours
Period of measurement from the date of approval of SIP	90 percent compliance on minimum hours of water supply											
Up to the 12 th month	6 hours											
13 th to 24 th month	8 hours											
25 th to 36 th month	12 hours											
37 th to 42 nd month	16 hours											
	Measured By	<p>Percentage of readings measuring to more than or equal to 2m (Two Meters) pressure at the Critical Measurement Points (CMPs) based on a continuous pressure logged at all CMPs during the month under review</p> <p>Compliance on continuity of service = 100* (Total number of readings of pressure equal to or more than 2m/ Total number of readings of pressure)</p>										
	Monitored By	<p>An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables pressure logs</p> <p>The pressure log database shall include:</p> <ul style="list-style-type: none"> ▪ Time and date ▪ CMP identification number ▪ Pressure in meters 										
	Allowable Exclusions	<ul style="list-style-type: none"> i. Planned maintenance periods ii. Low pressure in the command reservoir iii. Interruption due to mains bursts not exceeding 12 hours iv. Shortage of bulk water from the river or from the BWSP2 bulk supply contractor to be appointed under a separate contract v. Third Party causes like power failure and fire fighting 										
2.	Parameter	Response to Complaints										
	Minimum Service Level	60% of consumer requests are responded to within 48 hours to be achieved from the Initial Takeover Date and maintained throughout the Development Period										
	Measured By	Percentage of total number of customer requests responded to during the month under review over the total number of customer requests received and recorded during the month										

14.2 Performance Standards and Measurement Framework between the SDCD and the Contract Completion Date

14.2.1 The Performance Standards and measurement framework governing the period of the Contract between the Scheduled Development Completion Date and the Contract Completion Date shall be as detailed below. During this period bulk water to be provided under BWSP 2 is expected to be available.

Table 14.2 Performance Standards between the SDCD and the Contract Completion Date

S.No.	Description	Details
1.	Parameter	Continuity of Water Supply and Pressure (24x7 water supply)
	Minimum Service Level	90% of the pressure readings maintained at a minimum 12m (Twelve Meters Only) pressure at Critical Measurement Points to be achieved at the end of Scheduled Development Completion Date and maintained throughout the Contract term
	Measured By	Percentage of readings measuring to more than or equal to 12m pressure at the Critical Measurement Points (CMPs) based on a continuous pressure logged at all CMPs during the month under review Compliance on continuity of service = $100 * (\text{Total Number of readings of pressure equal to or more than 12m} / \text{Total number of readings of pressure})$
	Monitored By	An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables pressure logs The pressure log database shall include: <ul style="list-style-type: none"> ▪ Time and date ▪ CMP identification number ▪ Pressure in meters
	Allowable Exclusions	<ol style="list-style-type: none"> i. Planned maintenance periods not exceeding 12 hours each ii. Low pressure in the command reservoir iii. Interruption due to mains bursts not exceeding 12 hours iv. Shortage of bulk water supplied by bulk supply provider v. Third party causes like power failure and fire fighting <p>In the event of non-availability of bulk potable water from the BWSP2 bulk supply contractor to be appointed under a separate contract, the Contractor shall continue with the 6 (six) hours per day supply as applicable immediately before the Scheduled Development Completion Date</p>
2.	Parameter	Resolution of Complaints
	Minimum Service Level	90% of complaints resolved during the month under review
	Measured By	Percentage of total number of complaints responded to within 24 hours and resolved within 72 hours during the period under review

		<p>over the total number of complaints received during the month under review.</p> <p>Resolutions of complaints = 100* (Total number of complaints responded to within 24 hours and resolved in 72 hours during the month under review / Total number of complaints received during the month under review)</p>
	Monitored By	<p>An electronic registry maintained by the Contractor, the registry shall include detailed database and summary tables including:</p> <ul style="list-style-type: none"> ▪ Time and date ▪ Complaint number ▪ Consumer name ▪ Consumer identification number ▪ DMA number ▪ Nature of complaint ▪ Time and date at which Consumer is provided with response ▪ Action taken report ▪ Time and date of resolution of complaint
	Allowable Exclusions	Complaints pertaining to ‘no water’ at times of stoppage of bulk supply from bulk supply provider
	Monitored By	<p>An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables for customer complaints</p> <p>The customer complaints database shall include:</p> <ul style="list-style-type: none"> ▪ Time and date ▪ Complaint identification number ▪ Customer identification code ▪ Nature of complaint on water quality ▪ Action taken report ▪ Time and date of resumption of service level
3.	Parameter	Water Quality at Consumer Connection Points
	Minimum Service Level	100% samples shall conform to the standards prescribed in the Potable Water Specification to be achieved by the Scheduled Development Completion Date and maintained throughout the Operations and Maintenance Period
	Measured By	Percentage of number of samples at tap tested and conforming to water quality standards prescribed over the total number of samples at tap tested for residual chlorine as per the agreed sampling protocol during the month under review
	Monitored By	<p>An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables to be maintained as part of the water quality surveillance protocols agreed as part of the SIP</p> <p>The water quality testing database shall include:</p> <ul style="list-style-type: none"> ▪ Time and date ▪ Sample location ▪ Sample number

		<ul style="list-style-type: none"> ▪ Details of water quality tests conducted ▪ Details of remedial actions taken in case of water quality problem ▪ Time and date of resumption of service level
4.	Parameter	Authorised Consumption
	Minimum Service Level	80% of water produced
	Measured By	<p>Percentage of billed authorized consumption plus unbilled authorized consumption measured in kilo liters during the month under review over the total supply input volume in kilo liters continuously measured at the bulk water supply points fixed on the transmission mains originating from Barari Water Works and all functional tube wells.</p> <p>Authorised consumption = $100 * (\text{Total billed authorized consumption} + \text{Total unbilled authorized consumption in kilo liters}) / (\text{Total supply input volume in kilo liters})$</p>
	Monitored By	<p>An electronic registry maintained by the Contractor; the registry shall include detailed database and summary tables for supply input volume, billed volume and authorized free supplies volume</p> <p>The database shall include:</p> <ul style="list-style-type: none"> ▪ Month ▪ Cumulative supply input volume ▪ Cumulative DMA wise distribution input volume ▪ Total billed volume during the month ▪ Total measured volume of authorized free supplies

14.3 Methodology for Measurement

The Contractor shall develop a robust methodology and framework for measurement and monitoring of Performance Standards stipulated under this clause and proposed as part of the SIP. The Employer with the assistance of the Auditing Body shall verify the same and upon agreement between the Parties the agreed methodology shall form the basis for monitoring the performance of the Contractor and apply the Non Performance Adjustments on the eligible Operating Payments.

15. Periodic Reports

- 15.1. The Contractor shall prepare and submit periodic reports on different plans, progress of Works, performance standards etc., including exceptional reports on emergencies if any. The reporting requirements are provided in Table 15.1 below. The Contractor shall as part of the SIP develop the required formats for the periodic reports and also identify any critical reporting requirements in order to enable timely decision making by the Employer and BMC.

Table 15.1: Summary of Periodic Reporting Requirements

Deliverable	First Report	Follow-up Tasks
Service Improvement Plan (SIP)	Submit SIP not later than 300 days from the Commencement Date	Not applicable
Annual Operating Plan (AOP)	Submit Annual Operating Plan (AOP) not later than 300 days from the Commencement Date as part of SIP	Submit AOP for subsequent years not later than 90 days prior to end of previous year plan
Standard Operating Procedures (SOPs)	Submit report not later than 300 days after Commencement Date	Complete implementation and training within 547 days from the Commencement Date
Management Information Systems (MIS)	Submit report not later than 300 days after Commencement Date	Complete implementation and training within 547 days from the Commencement Date
Operating Performance Report (OPR); the OPR shall include: a detailed progress report on the implementation of the SIP; monthly water account with details of production, distribution and sales; revenue collection; Performance Standards achieved or maintained during the month; exceptional reports on emergencies; financial information on project cash flows, etc.	Submit OPR for any and every month before the 10 th day of subsequent month commencing from the Initial Takeover Date	Repeat every month
Quarterly Performance Report (QPR); the QPR shall include a brief summary of the relevant issues detailed in the Monthly Performance Reports including a summary analysis of unpaid bills	Submit Quarterly Performance Report for any and every quarter before 20 th day of subsequent quarter commencing from the Commencement Date	Repeat for every quarter including summary analysis of unpaid bills

Deliverable	First Report	Follow-up Tasks
Annual Performance Report (APR); the APR shall include the annual accounts, cash flow, and financial performance including summary analysis of unpaid bills	Submit Annual Performance Report for any and every year before 20 th day of subsequent year	Repeat for every year
Asset and Facilities Register	Submit Asset and Facilities Register within 300 days from the Commencement Date	Submit updated Asset and Facilities Register before 30 th day from the completion of an operating year

ANNEX A: Scope of Works for Rehabilitation of Barari Water Works – Process Components

1. Rehabilitation Scope of Works
 - 1.1. This Scope of Works pertains to refurbishment of exiting water treatment facilities which comprise of three separate conventional treatment plants, (1 gallon = 4.546 liters):
 - a. 1.2 mgd / 5.5 mld Paterson filter plant (WTP 1);
 - b. 0.6 mgd / 2.7 mld mechanical filter plant (WTP 2); and
 - c. 2 mgd / 9.1 mld Jewel filter plant (WTP 3).
 - 1.2. Certain rehabilitation works have been listed below as a minimum requirement with a basic aim to deliver a minimum 9 mld up to the design year 2032 based primarily on operation of WTP 3. However, if the operation of all three plants can be optimized then production can be expected to be 18.3 mld or more. The existing intake is expected to be utilized until 2017 to feed these three existing plants with raw water. After that, raw water will be conveyed from a new intake and raw water rising main.
 - 1.3. The following Scope of Works has been identified as minimum for rehabilitating the existing water treatment plants. Various details and sizing are presented in the Project Information Memorandum provided in Section 6.4 Supplementary Information available at the e-data room set up by BUIDCo; however, prospective bidders are encouraged to visit the plant premises and satisfy themselves before submission of their bids.
 - a. Introduction of open flash mixer separately in each of the three plants for chemical mixing with all necessary civil works, stirring arrangement, mechanical equipment, staging over ground if required, etc., with all interconnections with existing pipes and channels.
 - b. Alum dosing system with necessary arrangements, solution preparation stirrers for all tanks, stand by solution preparation tanks, dosing pumps, metering device, equipment, all piping works inside and outside, etc. Only existing civil structure for solution preparation tank can be used. Standby dosing tanks to be constructed and housed inside the respective filter plants. Three separate systems for three separate plants to be provided. (Each with 1 working and 1 standby).
 - c. Lime dosing system with necessary arrangements, solution preparation stirrers for all tanks, stand by solution preparation tanks, dosing pumps, metering device, equipment, all piping works inside and outside, etc. Only existing civil structure for solution preparation tank can be used. Standby dosing tanks to be constructed and housed inside the respective filter plants. Three separate systems for three separate plants to be provided. (Each with 1 working and 1 standby).
 - d. Vacuum type chlorine dosing system (for both pre-chlorination and post-chlorination at each of the three plants; with 1 working and 1 standby) with necessary arrangements, chlorine cylinders, chlorinators, chlorinator handling facilities, dosing pumps, metering device, equipment, alarm, all protection devices, all piping works inside and outside (to the dosing points), etc.
 - e. Construction of two separate chlorine blocks/houses (one for the Jewel plant and one for the Patterson and mechanical plants) to house the chlorine dosing systems and toners (for one month storage), handling
-

- facilities, and all other dosing and metering equipment and pipe works, with proper ventilation, access roads, lighting, and all other facilities.
- f. Actuator operated valve operational arrangement (replacement of entire valve assembly) for all valves related to Jewel plant.
 - g. Complete and exhaustive servicing of existing equipment (clariflocculator, gear box, blades, scraper assembly, and drives) of the Jewel plant, to make these good and adequate to run for the stipulated loading and capacity.
 - h. Painting of various parts and renovation to existing civil structure (as required).
 - i. Leakage control, pipe and valve replacement, reorganization of piping works (as required).
 - j. Connection pipelines from service water storage tanks to solution preparation tanks for dissolution of various chemicals with all fittings, valves, etc.
 - k. Providing necessary land-scaping and/ or gardening, wherever and as necessary to suit the aesthetic requirement.

1.4. The following table presents a summary of the process parameters to be considered in the final design while executing the refurbishment works.

1.5. Process Description

Pre-chlorination	Max. 3 mg/l concentration
Alum dosing	40 mg/l or specific demand as required
Lime dosing	20 mg/l or specific demand as required
Flash mixing	Flash mixer of 60 sec retention time
Flocculation	20 min. retention time
Sedimentation	Up to 1.5 m ³ /m ² /hr surface load
Filtration	Up to 6 m ³ /m ² /hr surface load
Post Chlorination	Average 2mg/l concentration

2. Installation, Testing, Trial Run and Commissioning

2.1. The Scope of work for rehabilitation of the existing water treatment plants also includes installation, testing, trial run, and commissioning of the equipment and facilities, followed by operation and maintenance of the plants. It broadly comprises the following Works:

- a. Process and hydraulic design, system design and layout of the proposed new units and facilities all as per Specifications; pre-commencement surveying and mapping of existing layout, general arrangement of existing components, and their hydraulics.
 - b. Detailed sub-soil investigations to assess the safe bearing capacity, and the physical and chemical characteristics of the soil.
 - c. Design of all components, including civil, mechanical, electrical and instrumentation works.
 - d. Construction of civil works for all components and services.
 - e. Supply and installation of all mechanical, electrical and instrumentation equipment.
 - f. Provision of essential water quality testing facilities/ equipment for routine testing of water quality, including arsenic and fluoride in bore wells.
 - g. Instituting a quality control system during construction.
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- h. Integration and tuning of the system.
 - i. Testing performance of the plant.
 - j. Trial running of the plant.
 - k. Re-commissioning of the plant, if necessary
 - l. Remedying any defects during the contract liabilities period.
 - m. Providing as-built drawings and operation and maintenance manuals for the completed facilities.
 - n. Providing spare parts and specialized tools in accordance with the schedules, and at the Employer’s option.
 - o. Any other allied works required for successful commissioning of the rehabilitated plants.
 - p. Training Employer’s Personnel in operation and maintenance.
 - q. Operating and maintaining the plant after commissioning, as required in the Contractor’s Scope of Works.
- 2.2. The work shall be carried out strictly in accordance with specifications and instructions of the Employer’s Representative issued from time to time. The work shall be completed within the time period mentioned in the Bidding Document.
- 2.3. The target levels for raw water treatment are shown below for reference.
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Figure A.1: Target Levels for Raw Water Treatment**BROAD DESIGN DATA**

INLET DATA	Treatment Plants		
	Jewel	Mechanical	Paterson
Expected Filtered water flow	9.092	2.728	5.455 mld
Design Hourly Input to Reservoir	378.8	113.7	227.3 m ³ /hr.
No. of hours of operation per day	24 hr.	[else as per requirement]	
Input to Filters	9.228	2.769	5.537 mld
considering a total of 1.5% losses			
Design Hourly Input to Filters	384.5	115.4	230.7 m ³ /hr.
Input to Plant/Clariflcculators,			
considering a total of 1.5% losses			
Design Hourly Inlet Flow	9.367	2.810	5.620 mld
	390.3	117.1	234.2 m ³ /hr.
Max. & Design Turbidity in raw water	1,000 NTU		
Factor: Suspensions vs. Turbidity	1.00 [assumed]		
Max. Design suspensions in raw water	1,000 mg/l		

CLARIFIED WATER QUALITY REQUIREMENT

For Non-Monsoon season when Raw Water Turbidity is not > 400 NTU:

TURBIDITY	≤	10 NTU
TOTAL Al	≤	0.3 mg/l as Al

For Monsoon season when Raw Water Turbidity could be > 400 NTU:

TURBIDITY	≤	20 NTU	any single value
TURBIDITY	≤	10 NTU	avg value over 24 hours
TOTAL Al	<	0.5 mg/l as Al	any time over 24 hours

FINAL TREATED WATER QUALITY REQUIREMENT

TURBIDITY	≤	1 NTU
SUSPENDED SOLIDS	≤	1 MG/L
COLOR	≤	5 HAZEN UNITS
TASTE & ODOUR		UNOBJECTIONABLE
TOTAL Al	≤	0.2 mg/l as Al
COLIFORM ORGANISMS IN MPN/100 ML		ABSENT
FREE CHLORINE AFTER 30 MIN		0.3 MG/L
OF CONTACT TIME		

Annex B: Scope of Works for Rehabilitation of Barari Water Works – Electrical, Mechanical and Instrumentation Works

1. Mechanical Works
 - 1.1. The general Scope of Works shall generally include as a minimum, but not be limited to, the following Works:
 - 1.2. Pumping Stations: Presently, there are 5 nos. pumping stations at the existing BWB, the details of which are given below:
 - a. Old intake pumping station: It houses 4 nos. horizontal centrifugal pumping units;
 - b. Dry intake pumping station: It houses 3 nos. vertical turbine pumping units;
 - c. Old clear water pumping station: It houses 5 nos. horizontal centrifugal pumping units;
 - d. New clear water pumping station: It houses 5 nos. horizontal centrifugal pumping units; and
 - e. Settled water pumping station for pumping to Jewel WTP: It houses 3 nos. horizontal centrifugal pumping units.
 - 1.3. Out of the 5 nos. horizontal centrifugal pumping units at the old clear water pumping station, 2 nos. are proposed to be replaced with units of 250 m³/hr discharge and 70 m head. These new pumping units will be of the same capacity as existing pumping units in the new clear water pumping station; hence the bidder is required to verify the actual details of these pumps. Also the existing piping and fittings in individual suction, individual delivery and common header inside the pump house are to be replaced with required DF piping, DF sluice valves, DF non return valves, DF bends, DF radial tees, DF dismantling joints etc.
 - 1.4. Water Treatment Plants : There are 3 nos. existing water treatment plants each having 2 nos. filter units:
 - a. Patterson Filter: 2.73 mld;
 - b. Mechanical Filter: 5.45 mld; and
 - c. Jewel Filter: 9.1 mld.
 - 1.5. Air Blowers: Presently there are 3 nos. air blowers of KAY make, one blower in each of the WTPs of the following capacities:
 - a. 1755 m³/hr; 0.35 Kg/cm² head;
 - b. 1850 m³/hr; 0.35 Kg/cm² head; and
 - c. 765 m³/hr; 0.35 Kg/cm² head.
 - 1.6. It is proposed that 1 standby unit is to be provided in each WTP complete with all required accessories, electric motor, DF piping, DF valves, flow-meter etc., along with acoustic enclosure for all existing and new air blowers. The bidder is required to verify the actual details of the existing air blowers and also the actual required capacity for each WTP. There is sufficient space in Patterson and Mechanical plants but in the case of Jewel plant a new room is required.
 - 1.7. Chemical Mixing
 - a. There are 2 nos. alum and lime mixing tanks in each of the 3 nos. WTPs. The existing mixing systems are to be replaced by new units, complete with all motors, piping, valves and accessories;

- b. Alum and lime dosing systems (metering pumps) 1 working + 1 standby are to be provided in each WTP, complete with all motors, piping, valves, fittings, accessories; and
 - c. The existing system is to be made functional by rehabilitating/providing water supply including connecting pipeline from service water storage tanks with all fittings, valves, etc., solution delivery system and other piping and valves etc.
 - 1.8. Flash Mixing System: No flash mixing system exists in any of the WTPs and 1 no. new system shall be provided in each WTP, complete in all respects, including required sluice gates and complete electrical system.
 - 1.9. Filter Units: Existing rate of flow controller arrangements in filter beds are to be replaced completely.
 - 1.10. Chlorinating System: Vacuum feed type chlorinators (1 working + 1 standby) of required capacity for pre-chlorination as well for post chlorination, shall be provided in each WTP along with all accessories, motive water pumps, motors, piping and valves, including connecting pipeline from service water storage tanks with all fittings, valves, etc., electrically operated 3 tons mono rail crane complete with all required accessories, chlorine cylinder weighing system, and safety equipment. The system shall be complete with electrical system and ventilation system for chlorinator’s room and chlorine cylinder room for each WTP.
 - 1.11. Miscellaneous Works: The scope also includes provision of fire extinguishers and first aid kits.
2. Electrical Works: The general Scope of Works under this heading shall include, but not limited to, the following Works:
 - 2.1. Electrical Sub-station: Presently, one 11 kV feeder is available in the WTP campus which is being stepped down to 0.433 kV by using 6 nos. of 11 kV/0.433 kV transformers of different capacities for different pumping stations. This existing system is to be replaced by installing a dedicated 33 kV feeder and one 33 kV/0.433 kV sub-station.
 - 2.2. A provisional sum is included in the Tranche 1 funds to provide a dedicated 33 kV feeder up to the BWW, with constructed through the state electricity department. The scope of electrical works starts from the termination point of 33 kV power feeder to be constructed by the state electricity department. The Contractor shall supply the required 33 kV outdoor substation equipment, HT switchboard/control panels, 33kV cable termination kits, step down 33 kV to 0.415 KV through transformer of 1500 kVA and distribute power to different electrical loads (motors, lighting, etc.) of the pumping stations and water treatment plants by providing a main LT switch gear panel board along with APFC panel and required LT switch gear panel boards at different pumping stations and water treatment plants.
 - 2.3. LT Switch Gear Panel Boards
 - 2.3.1. Main LT Switch Gear Panel Board: The main LT switch gear panel board will be provided and shall consist of one incoming and 10 nos. outgoing panels, out of which 5 nos. shall be for different pumping stations, 3 nos. for WTPs, 1 no. spare panel, and 1 no. panel for lighting load of entire campus.
 - 2.3.2. Other LT Switch Gear Panel Boards

- a. The 3 nos. LT switch gear panel boards existing in the Old Intake Pumping Station, old clear water pumping Station, and new clear water pumping station respectively are to be replaced with new LT switch gear panel boards of required capacities along with all automatic ATS starters etc.
 - b. The LT switch gear panel boards shall consist of one incoming and 7/8 nos. outgoing panels, out of which 4/5 nos. shall be for different pumping units, 1 no. spare panel and remaining panels required for light load for pumping station, battery charger, flow meter, level indicator, pressure indicating devices etc., and for miscellaneous works such as welding etc.
 - c. The scope also includes required switchgear panels at each WTP, along with motors and starters, cabling, etc., for feeding power to alum and lime mixing systems, flash mixers, metering pump systems, chlorinating systems, lighting etc., along with one spare panel.
- 2.4. Cabling and Earthing: The scope also includes required cabling, including replacement of existing cabling of the above 3 nos. pumping stations, replacement of complete earthing of all the pumping stations and WTPs, replacement of complete lighting system (outdoor as well as indoor), and lightning protection for the installation.
3. Instrumentation Works: The general Scope of Works under this heading shall generally include, but not be limited to, the following Works:
- 3.1. Pumping Stations:
- 3.1.1. Flow Measuring System: Direct on line electro- magnetic flow meter complete with converter, transmitting device and digital flow indicator and integrator etc., of required sizes, one each in the pumping mains of following pumping stations:
 - a. Old intake pumping station: 1 no. of 350 mm and 1 no. of 450 mm respectively
 - b. Dry intake pumping station: 1 no. of 450 mm.
 - c. Old clear water pumping station: 1 no. of 300 mm and 1 no. of 350 mm respectively
 - d. New clear water pumping station: 2 nos. of 400 mm.
 - 3.1.2. Water level measuring system: Ultrasonic, digital type water level measuring systems with indicator etc. for measuring water levels in intake wells and clear water reservoirs. The details are as follows:
 - a. Intake well of old intake pumping Station: 1 no.
 - b. Intake well of dry intake pumping Station: 1 no.
 - c. Underground reservoir of old clear water pumping station: 1 no.
 - d. Underground reservoir of new clear water pumping station: 1 no
 - 3.1.3. Pressure Measuring System
 - a. Digital electronic sensor type pressure measuring system suitable for pressure measurements of water flow in delivery pipes complete with signal transmitting device and digital pressure indicator in all the pumping stations;
 - b. Digital electronic sensor type pressure measuring system suitable for pressure measurements of water flow in suction pipes complete with signal transmitting device and digital pressure indicator in all the pumping stations;
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- c. Bourdon type pressure gauges suitable for pressure measurements of water flow in delivery pipes complete with piping and hardware in all the pumping stations; and
 - d. Bourdon type pressure gauges suitable for pressure measurements of water flow in suction pipes complete with piping and hardware in all the pumping stations.
- 3.2. Water Treatment Plants:
- 3.2.1. Filter units
 - a. Rate of flow indicators complete with 4-20 mA sensor, transmitter and digital display indicator arrangement with all necessary fittings and fixtures, 2 nos. in each WTP; and
 - b. Loss of head indicators complete with probe, differential type transmitter and digital display indicator arrangement with all necessary fittings and fixtures, 2 nos. in each WTP.
 - 3.2.2. Chlorinators
 - a. Chlorine gas leakage detection systems; and
 - b. Online residual chlorine monitoring system in each WTP.
 - 3.2.3. Other Units: Instruments required for other units of each WTP, such as Flash mixing units, alum mixing units, lime mixing units, as per specifications of the units.
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Annex C: Draft Initial Environmental Examination and Environmental Management Plan

[Updated in August 2013 based on the DPR]

Annex D: Draft Resettlement Plan

[Updated in August 2013 based on the DPR]

6.2 Specifications

1. The Contractor shall carry out the Works based on the Specifications included in this section. The section comprises the following three parts:
 - 6.2.1 Standard Specifications;
 - 6.2.2 Particular Specifications; and
 - 6.2.3 Operation, Maintenance and Management.
 2. The Standard Specifications for Works includes specification for all types of civil works. The Standard Specifications are included in **Part 2** of the Bidding Document.
 3. The Particular Specifications and the Operation, Maintenance and Management requirements contains specification for additional specialized items of civil works, and/or for mechanical and electrical works including the employer’s requirements for Operating Service. In the event of any discrepancy between the provisions of the Standard Specifications and the Particular Specifications, then the provisions of the Particular Specifications will prevail. The Particular Specifications and Operation, Maintenance and Management requirements are included in **Part 3** of the Bidding Document.
 4. If the specifications for a particular item are not given by the Employer, the Standard Specifications of Bihar Public Works Department (PWD) or Bihar Rajya Jal Parishad (BRJP) shall be followed.
 5. All the Materials incorporated in the Works shall be the most suitable for the duty concerned and shall be new and of first class commercial quality, free from imperfections and selected for long life and minimum maintenance. These may be tested according to relevant Indian Standards (IS) or International Standards Organization (ISO) standards in qualified labs and certificates produced to the satisfaction of the Employer’s Representative.
 6. The objectives of the specifications given are to specify the details pertaining to the designs, drawings, and selection of equipment or product. The equipment or product supplied shall be of high standard of quality and best engineering practices and shall comply with all currently applicable standards, regulations and codes.
 7. Except as otherwise specified in these technical specifications, the Indian/International Standards and codes of practice in their latest version shall be adhered to for the design, manufacturing, inspection, calibration, installation, field testing, packing, handling and transportation of products. Should any product be offered conforming to other standards, the equipment or products shall be equal to or superior to those specified and the documentary confirmation shall be submitted for the prior approval of the Employer.
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6.3 Drawings

1. **Employer’s Drawings.** The List of drawings are provided as a guideline of the specifications and work in **Part 4** of the Bidding Document. All data and information furnished in the drawings by the Employer is given in good faith, but the Employer does not guarantee their completeness and accuracy. The drawings shall be verified by the Contractor who should point out errors or discrepancies to the Employer’s Representative.

 2. **Contractor’s Drawings.** All drawings provided by the Contractor shall be on standard size sheets, prepared on computer with Auto CAD or equivalent and shall show particulars in a title block located in the lower right hand corner, in addition to the name of the Contractor and equipment manufacturer, date, scale, drawing, revision number (RO for drawings submitted initially, R1, R2 etc., for drawings submitted subsequently). A blank space shall be provided for the Employer’s Representative’s approval stamp and provision shall be made for details of revisions to be recorded. All drawings submitted by the supplier shall use the English language. All drawings shall be clearly and fully cross-referenced to the other drawings as relevant. The Contractor’s attention is drawn to the Special Specifications for more information on the drawing requirements.
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6.4 Supplementary Information

1. The following list is not exhaustive but shows some of the main reports that are available as part of the electronic data room (EDR) set up in BUIDCo. Bidders can obtain the information by seeking the necessary permission from the BWSP 1 Project Director (pd.bhagalpur@buidco.com).
 - a) The Subproject Appraisal Report (SAR, May 2011) for Bhagalpur Water Supply Project;
 - b) Town of Bhagalpur: Draft Master Plan Vision 2027 - Prepared by the Department of Urban Development and Housing (UDHD), Government of Bihar, May 2009;
 - c) Feasibility Project Report of Integrated Bhagalpur Water Supply Scheme under State Plan - Prepared by Bihar Rajya Jal Parisad (BRJP), Government of Bihar, 2006;
 - d) Bhagalpur Water Supply Improvements – Project Information Memorandum (PIM) and related drawings; and
 - e) Report on on-going works undertaken by BRJP for improving Bhagalpur Water Supply.

 2. The following studies/surveys are also available as separate reports:
 - a) Topographical Survey Report (August 2011);
 - b) Geotechnical Investigation for Bhagalpur Water Supply (Tranche 1) (August 2011);
 - c) Bathymetric Survey Report (August 2011);
 - d) Raw Water Analyses Report (August 2011).
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6.5 Personnel Requirements

Using Form PER-1 and PER-2 in Section 4 (Bidding Forms), the Bidder must demonstrate it has personnel that meet the following requirements:

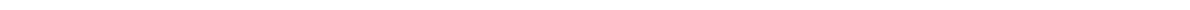
S No.	Position	Total Work Experience [years]	Experience In Similar Work [years]
1	Project Director - Graduate Engineer with specific experience in implementation of water supply improvements in urban areas in developing countries	15 years	10 years
2	Planning and Material Engineer -1; Graduate Engineer	10 years	5 years
3	Quality Engineer -1; Graduate Engineer	10 years	3 years
4	Construction Supervisors – 3; Graduate Engineers in civil/ electrical/ mechanical/ instrumentation engineering	7 years	3 years
5	Water supply network design Engineer -1; Graduate Engineer in civil/ mechanical/ hydraulic engineering	10 years	5 years
6	Structural Engineer -1; Post Graduate in civil or structural engineering	10 years	3 years
7	Operational Manager – Graduate Engineer with experience in water distribution management system with 5 years on continuous water supply	10 years	5 years
8	Utility Finance Manager – Graduate in finance or business management with experience in managing the utility finances	10 years	5 years
9	NRW Manager – Graduate Engineer with experience in water distribution management with specific experience in reduction of Non-Revenue Water in urban water supply networks	10 years	3 years
10	Customer Manager – Graduate in business management with experience in customer services of any utility services	7 years	3 years
11	Plant Superintendent – minimum Diploma Engineer with experience in operating a water treatment plant of minimum 5 MLD capacity	5 years	2 years

6.6 Equipment Requirements

Using Form EQU in Section 4 (Bidding Forms), the Bidder must demonstrate it has the key equipment listed below:

No.	Equipment Type and Characteristics	Min. Number Required
1	Excavator	4
2	Concrete batch mix plant	1
3	Transit mixers	4
4	Laboratory for testing fineness, consistency, setting time compressive & tensile strength of cement compressive & flexural strength of cement concrete and proof stress, elongation, tensile strength, bending & re-bending of reinforcement steel	1
5	Concrete mixer with hopper	4
6	Road roller (tandem/vibratory)	2
7	Needle/ plate vibrator	10
8	Tipper lorries	10
9	Total station survey equipment set	3
10	Bituminous hot mix plant	1
11	Road layer/ paver equipment	1
12	Hydraulic testing equipment for pipes- set	2
13	Water tanker (with sprinkling arrangements)	2
14	Crane	2

Section 7 – General Conditions of Contract



Section 7 - General Conditions of Contract

1. **Name of Employer:** State of Bihar, acting through its Urban Development and Housing Department, in turn acting through the Bihar Urban Infrastructure Development Corporation Ltd. (BUIDCo)
2. **Name of Contract:** Rehabilitation, Construction, Operations, Maintenance and Management of Bhagalpur Water Supply Project 1 (BWSP1)
3. The Conditions of Contract comprise two parts, this Section 7 - General Conditions of Contract (GCC) and the following Section 8 - Particular Conditions of Contract.
4. The GCC shall be the Conditions of Contract for Design, Build and Operate Projects (First Edition 2008), prepared by the Fédération Internationale des Ingénieurs-Conseils or FIDIC (FIDIC Gold Book) available at <http://fidic.org/bookshop>. The GCC is deemed to include the General Conditions of Dispute Adjudication Agreement and the Procedural Rules for Dispute Adjudication Board Members of the FIDIC Gold Book.
5. Interested bidders may view a copy of the FIDIC Gold Book through inspection of the Bid Document, pursuant to paragraph 5 of the Invitation for Bids. Please contact:

Chief General Manager, 3rd floor, Maurya Tower, Mauryalok Complex,
Budh Marg, Patna - 800001 Bihar, India.

Tel: 0612-2210101/02

email: cgmbuidco@gmail.com

(10:00 to 16:00 only)

6. A Bidder must, as part of its Bid proposal, submit an 'Undertaking' stating the following:
 - i. It has read and reviewed the General Conditions of Contract (GCC) referred to in Section 7 of the Bid Document, namely the Conditions of Contract for Design, Build and Operate Projects (First Edition 2008), prepared by the Fédération Internationale des Ingénieurs-Conseils or FIDIC; and
 - ii. In respect of the conditions of contract, its Bid is submitted on the basis of the aforementioned GCC, as supplemented by Section 8 of the Bidding Document.
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Section 8 – Particular Conditions of Contract



Section 8 - Particular Conditions of Contract

The following Particular Conditions of Contract (PCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

Part A – Contract Data

Sub-Clause	Data to be Given	Data
1.1.24	Cost Plus Profit	None
1.1.26	Cut Off Date	As per Sub-Clause 15.2(h)
1.1.32	Employer's Name and Address	State of Bihar, acting through its Urban Development and Housing Department, in turn acting through the Bihar Urban Infrastructure Development Corporation Ltd: Shri. Anupam Kumar Suman Managing Director, BUIDCO Address: 3rd floor, Maurya Tower, Mauryalok Complex, Budh Marg Patna ZIP Code: 800001 Bihar Country: India Tel: 0612-2210101/02
1.1.35	Employer's Representative	The Employer's Representative shall be the team leader from the Design and Supervision Consultant appointed by the Employer on a separate contract or as nominated by the Employer from time to time
1.1.70	Section	Section means the part of Works scheduled to be completed in accordance to the Development Period Milestones provided at Table 9.1 under Sub-Clause 9.10.4 of Section 6 – Employer's Requirements.
1.1.78	Time for Completion of Design Build	1278 days from the Development Commencement Date and up to the Scheduled Development Completion Date
1.3	Address of Employer's Representative for communication	The team leader from the Design and Supervision Consultant under a separate contract or as nominated by the Employer from time to time Address:-----
1.3	Address of Contractor for Communication	

1.3 (c)	Agreed Systems of Electronic Transmission	By facsimile or electronic mail only
1.4	Contract shall be governed by the law of	India and State of Bihar. In case of conflict, the Laws of India should prevail.
1.4	Ruling Language	English
1.4	Language for Communication	English
2.1	After receiving the Letter of Acceptance, the Contractor shall be given right of access to all or part of the Site within:	7 days
4.2	Performance Security (as percentages of Accepted Contract Amount in currencies)	The performance security shall be in the form of an unconditional bank guarantee in the amount(s) of Ten (10) percent of the Accepted Contract Amount, denominated in the types and proportions of the currencies in which the Contract Price is payable, or in a freely convertible currency acceptable to the Employer. If the Bank issuing the Performance Security is located outside India, it shall have a correspondent Bank located in the territory of India to make it enforceable.
4.2	Reduction in Performance Security at the end of Retention Period	50%
5.1	Period for notification of errors, faults and other defects	180 days from the Commencement Date
5.2	Contractor's documents requiring approval	The draft Service Improvement Plan as detailed in Section 6.1 Scope of Services and others as included in Section 6 Employer's Requirements
6.5	Normal working hours on the Site	8.00 hours to 18.00 hours
8.2	Period of the Operation Service	2738 days from the Initial Take Over Date, as defined in Clauses 1.2 and 2.1 of Section 6 – Employer's Requirements
9.2	Time for Completion of Design-Build	1278 days from the date of approval of the Service Improvement Plan, as defined in Clause 1.2 of Section 6 – Employer's Requirements
9.2	Time for Completion of each Section	Section is the part of those Permanent Works approved in SIP and scheduled to be completed in each of the time period in accordance with the Development Period Milestones in Table 9.1 under Sub-Clause 9.10.4 Section 6 Employer's Requirements
9.6	Delay damages	0.05 % of the Accepted Contract Amount pertaining to each Section
9.6	Maximum amount of delay damages	10% of Accepted Contract Amount for the Development Period, as defined in

		Clauses 1.2 and 3.1 of Section 6 – Employer’s Requirements
10.6a	Maximum compensation payable by the Contractor	10% of the Accepted Contract Amount for Operation Service
10.6b	Maximum compensation payable by the Employer	10% of the Accepted Contract Amount for Operation Service
10.7	Performance damages	Shall be in accordance to Schedule 5 – Contractor Payments
10.7	Minimum production output required	Shall be in accordance to the Performance Standards provided at Clause 14 in Section 6.1 Scope of Services under Section 6 Employer Requirements
10.7 (b)	Period of Failure	As per Sub-Clause 10.7 (b) only
13.5	Percentage rate to be applied to Provisional Sums	10%
14.2	Amount of Advance Payment (percent of Accepted Contract Amount)	10% of the Accepted Contract Amount payable in two installments in the currencies and proportions in which the Accepted Contract Amount is payable. The first installment of 5% will be released immediately after signing the Contract. The second installment of 5% will be released on the Development Commencement Date. Additional advance may be given equal to the amount to be paid to the Electricity Department of the State of Bihar for extension of a dedicated HT express feeder line based on proof of demand raised by the electricity department. This additional advance shall be adjusted on installation and commissioning of the dedicated HT feeder based on the utilization certificate issued by the electricity department.
14.2	Percentage deductions for repayment of Advance Payment	10% of Advance Payment to be recovered in 10 equal installments
14.3	Percentage of Retention	5%
14.3	Limit of Retention Money	5% of Accepted Contract Amount
14.6 (b) (i)	Plant and Materials	The relevant Plant and Materials are those approved as part of the Service Improvement Plan
14.6(c) (i)	Plant and Materials for payment when delivered to the Site	In accordance to the payment terms provided at Sub-Clause 3.1 Schedule 5 – Contractor Payments.
14.7(b)	Minimum Amount of Interim Payment Certificate	2% of Accepted Contract Amount
14.9	Financing charges for delayed	9%

	payment (percent points above discount rate):	
14.17	Currencies for payment of Contract Price	Indian Rupees and up to three foreign currencies of their choice
14.17	Proportion of Currencies	
14.17	Rate of Exchange	As per Sub-Clause 14.17 (e)
14.17	Currencies for Payment of Damages	
14.19	Amount of Maintenance Retention Fund	10% of the Accepted Contract Amount for Operation Services
17.1	Operation of forces of nature allocated to the Contractor	None
17.8	Total liability of the Contractor shall not exceed	10% of the Accepted Contract Amount
19.2 (a) (i)	Deductible Limits	None
19.2 (a) (ii)	Additional sum to be insured	Rupees 20 million
19.2 (a) 4	Additional sum to be insured	Rupees 10 million
19.2 (a) 5	Employer's Risks to be insured if different to Sub-Clause 17.1	Nil
19.2 (b)	Insurance for Contractor Equipment	Rupees 15 million
19.2 (c)	Insurance of Contractor's Equipment (amount required):	Rupees 10 million
19.2 (c)	Amount of professional liability insurance	Rupees 25 million
19.2 (d)	Period for which professional liability insurance required	Up to 365 days from Scheduled Development Completion Date
19.2 (f)	Amount of insurance required for injury to persons and damage to property	Shall be at least 2% of Accepted Contract Amount subject to a minimum of Rupees 5 (five) million for each occurrence with unlimited occurrences
19.3 (a)	Other insurances required from the Contractor	(i) Operations Office including the billing section (ii) All Customer Service Centers (iii) All pumping stations other than the pumps fitted to tube wells
19.3 (d)	Amount of fire extended cover insurance required	Rupees 10million
19.3 (e)	Other insurances required by law from the Contractor (give details):	None
19.3 (e)	Other optional insurances required from the Contractor	None
20.3	Date for appointment of DAB	28 days from the Commencement Date
20.4	The DAB shall comprise	Three (3) members
20.8	Appointing entity (official) for DAB members, if not agreed, shall be:	President, Institution of Engineers (India), Bihar State Chapter
20.8	Place of Arbitration	Patna, State of Bihar, India
20.8	Language of Arbitration	English
20.8(a)	International Arbitration to be administered by:	Singapore International Arbitration Center (SIAC)

Part B -Specific Provisions

Sub-Clause	Section	Specific Provision
1.1	Definitions	<p>Unless otherwise specifically stated, or unless the context requires otherwise, capitalized terms in this Part B and in the Schedules to the GCC are as defined under Sub-Clause 1.1 of the General Conditions of Contract and under Sub-Clause 1.2 of Section 6.1 Scope of Services under Section 6 - Employer's Requirements.</p> <p>The Particular Conditions of Contract (PCC) Part B - Specific Provisions, is to amend or for additions to the General Conditions of Contract (GCC - Section 7). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.</p> <p>'Bid' and 'Tender' will have the same meaning, as defined in Section 1- Instructions to Bidder.</p>
1.1.15	Contract Period	<p><i>Amend the Definition as:</i> Contract Period means the period commencing from Commencement Date and until the Contract Completion Date</p>
1.1.18	Commissioning Certificate	<p><i>Amend the Definition as:</i> "Commissioning Certificate" means the certificate issued by the Employer's Representative to the Contractor under Sub-Clause 11.7 [Commissioning Certificate] marking the end of the Development Period under Sub-Clause 3.1(b) under Section 6.1 Scope of Services</p>
1.1.30	Design-Build Period	<p><i>Amend the Definition as:</i> "Design-Build Period" means the period from the Commencement Date and up to the Scheduled Development Completion Date as defined in Sub-Clause 1.2 of Section 6 Employer's Requirements.</p>
1.1.48	Letter of Acceptance	<p><i>Add to the Definition:</i> "Letter of Acceptance' and 'Notification of Award' will have the same meaning unless otherwise specifically stated."</p>
1.1.58	Operation Service Period	<p><i>Amend the Definition as:</i> "Operation Service Period" is the period of the Contract commencing from the Initial Takeover Date, which is on completion of 182 days from the Commencement Date, and for a period of 2738 days up to the Contract Completion Date or extended by the Employer on mutual agreement</p>

		In case of Works installed or constructed and commissioned by the Contractor, the Operation Service shall not commence until the Design-Build of the Works or any Sections has been completed in accordance with Sub-Clause 9.12 [Completion of Design-Build] and the Commissioning Certificate issued under Sub-Clause 11.7 [Commissioning Certificate].
1.1.66	Retention Period	<i>Amend the Definition as:</i> “Retention Period” means the period of 365 days after issue of Final Design-Build Completion Certificate by the Employer.
1.1.78	Time for Completion of Design-Build	<i>Amend the Definition as:</i> “Time for Completion of Design-Build” means the time for completing the Design-Build or a Section thereof (as the case may be) under Sub-Clause 9.2 [Time for Completion of Design-Build] as stated in the Contract Data (with any extension under Sub-Clause 9.3 [Extension of Time for Completion of Design-Build]).
1.1.83	Year and Month	<i>Amend the Definition as:</i> “Year means three hundred and sixty five [365] days and “month” means thirty [30] days
1.2	Interpretation	<i>Add the following:</i> “(g)” References to Operation Service after the completion of Design-Build Period (such as in GCC Sub-Clauses 1.1.8 and 9.12[d]) shall mean the Operation Service covering Works installed or constructed and commissioned by the Contractor, following the PCC, Part B, ref. GCC 10.2, and the operation of remaining existing facilities.
1.5	Priority of Documents	Item “(c) the Letter of Tender” shall be amended to read “(c) the Letter of Tender, which includes the Letter of Price Bid”. Item “(h)” shall be renumbered as item “(i)”, and a new item “Bills of Quantities” shall be inserted as item “(h)”.
1.6	Contract Agreement	<i>Replace the phrase</i> “The Contract Agreement shall be based upon the form annexed to the Particular Conditions” <i>by the following:</i> “The Contract Agreement shall be based upon the form as given in Section 9, Contract Forms”.
1.7	Operating License	<i>Replace the second paragraph as:</i> The Operating License shall automatically come into full force and effect from the Commencement Date under Sub-Clause 8.1 [Commencement Date] and shall remain in force until the issue of the Contract Completion Certificate under Sub-Clause 8.6 [Contract Completion Certificate]
1.16	Inspections and Audit by the Asian	<i>Add Sub Clause 1.16 as under:</i> The Contractor shall permit the Asian

	Development Bank	Development Bank and/or persons appointed by the Bank to inspect the Site and/or the Contractor's accounts and records relating to the performance of the Contract and to have such accounts and records audited by auditors appointed by the Bank if required by the Bank.
2.3	Employer's Personnel	<i>Add the following at the end of Sub-Clause as under:</i> The day-to-day management control, work requirements, responsibilities and related terms and conditions pertaining to the Employer's Personnel deputed to the Contractor shall be in accordance to the Schedule 4 – BMC Personnel
3.6	Management Meetings	<i>Insert this Sub-Clause after Sub-Clause 3.5:</i> The Employer's Representative or the Contractor's Representative may require the other to attend a management meeting in order to review the progress with reference to the agreed program and arrangements for future work. The Employer's Representative shall record the business of management meetings and supply copies of the record to those attending the meeting and to the Employer. In the record, responsibilities for any actions to be taken shall be in accordance with the Contract.
4.2	Performance Security	<i>Amend the last paragraph as:</i> The Employer shall return 50% of the Performance Security on expiry of 365 days after the completion of the Development Period. The remaining 50% shall be refunded in three equal tranches with the first tranche released on completion of 2190 days, the second tranche released on completion of 2555 days, and the final tranche released on issue of the Contract Completion Certificate.
4.12	Unforeseeable Physical Conditions	<i>Add the following at end of the Sub-Clause:</i> In addition to notice of any unforeseeable physical conditions, the Contractor shall provide the Employer's Representative with a written notice of any unanticipated environmental or resettlement risks or impacts that arise during construction, implementation or operation of the Plant or Permanent Works, which were not considered in the updated and approved Initial Environmental Examination (IEE), the Environmental Management Plan (EMP), or the updated and approved Resettlement Plan (RP) attached in Section 6.1 Annex C and Annex D
4.16	Transport of Goods	<i>Add the following at end of the Sub-Clause:</i> The Contractor shall adequately record the

		condition of roads, agricultural land and other infrastructure prior to the start of transporting Materials, Goods and equipment, and construction.
4.18	Protection of Environment	<p><i>Insert the following at the end of Sub-Clause:</i> The Contractor shall comply with all applicable national, provincial and local environmental Laws and regulations. The Contractor shall:</p> <ul style="list-style-type: none"> (a) establish all operational systems for managing environmental impacts; (b) carry out all of the monitoring and mitigation measures set forth in the updated and approved IEE and EMP attached in Section 6.1 Annex C; and (c) allocate the budget required to ensure that such measures are carried out. <p>The Contractor shall submit monthly reports on the implementation and monitoring of such measures to the Employer. More particularly, the Contractor shall comply with (i) the measures and requirements set forth in the updated and approved EMP attached in Section 6.1 Annex C; and (ii) any corrective or preventative actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor implementation of the IEE and the EMP.</p> <p>The Contractor shall allocate a budget for compliance with these measures, requirements and actions.</p>
4.21	Progress Reports	<p><i>Insert following after Sub-Clause (h):</i> (i) Monitoring of the obligations in Sub-Clauses 4.18, 6.4, 6.7, 6.12, and 6.13.</p>
5.6	Operation and Maintenance Manuals	<p><i>Amend the Sub-Clause as:</i> 28 days prior to the commencement of the Commissioning Period for any Section of Works, the Contractor shall supply to the Employer's Representative two copies of all operation and maintenance manuals and commissioning plans in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair the Plant and the Works. The Contractor shall supply the balance of the required operation and maintenance manuals prior to the issue of the Commissioning Certificate. The Works or any Section shall not be considered to be completed for the purposes of issuing the Commissioning Certificate under Sub-Clause 11.7</p>

		[Commissioning Certificate] until the Employer's Representative has received these documents.
6.4	Labour Laws	<i>Insert the following at the end of the Sub-Clause:</i> The Contractor shall not make employment decisions based upon personal characteristics unrelated to job requirements. The Contractor shall base the employment relationship upon equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment or retirement, and discipline. The Contractor shall provide equal wage and benefits to men and women for work of equal value or type. The Contractor shall not employ forced labour, which consists of any work or services, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labour, such as indentured labour, bonded labour, or similar labour-contracting arrangements.
6.7	Health and Safety	<i>Insert the following at the end of the Sub-Clause:</i> The Contractor shall conduct health and safety programs for workers employed under the project, and shall include information on the risk of sexually transmitted diseases, including HIV/AIDS in such a program.
6.12	Child Labour	<i>Add Sub-Clause 6.12 as under:</i> The Contractor shall not employ any child to perform any work, including work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. "Child" means a child below the statutory minimum age specified under applicable national Laws.
6.13	Resettlement	<i>Add Sub-Clause 6.13 as under:</i> The Contractor shall comply with (i) the measures and requirements set forth in the updated and approved Resettlement Plan (RP) attached in Section 6.1 Annex D, to the extent it concerns impacts on affected people during construction; and (ii) any corrective or preventive actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor implementation of the Resettlement Plan. The Contractor shall allocate a budget for

		compliance with these measures, requirements and actions.
8.1	Commencement Date	The Commencement Date shall be within 90 days after the Contractor receives the Letter of Acceptance
9.14	Bonus for early completion of Development Period	<i>Add a new Sub-Clause 9.14 as under:</i> The Contractor shall be eligible for an incentive bonus for early completion of the whole of the Design-Build works under the Development Period at 0.05% (zero point zero five percent) of the Accepted Contract Amount for Design-Build works for each day (less any days of which the Contractor is paid for acceleration) that the completion is earlier than the intended completion date of the Development Period. The Employer's Representative shall certify that the Design-Build works are complete. The maximum amount of bonus for the whole of the Design-Build works shall be limited to 10% (ten percent) of the Accepted Contract Amount for Design-Build works. The bonus shall be a one-time payment applicable to the whole of the Design-Build works but not on Sections.
10.2	Commencement of Operation Service	<i>Amend the first two paragraphs as under:</i> Unless otherwise stated in the Employer's Requirements, the commencement of the Operation Service shall be from the Initial Take Over Date. In case of Works installed or constructed and commissioned by the Contractor, the Operation Service shall not commence until the Design-Build of the Works or any Sections has been completed in accordance with Sub-Clause 9.12 [Completion of Design-Build] and the Commissioning Certificate issued under Sub-Clause 11.7 [Commissioning Certificate].
10.3	Independent Compliance Audit	<i>Replace with:</i> The Project Management Consultants (PMC), appointed by the Employer under ADB supported Loan 2861-IND Bihar urban Development Investment program – Project 1, will act as the Auditing Body in accordance with its terms of reference in Schedule 6, Section 8 - Particular Conditions of Contract.
12.1(a) iii	Completion of outstanding work and Remedying the Defects	<i>Add a new Sub-Clause as under:</i> (iii) on the completion of construction, the Contractor shall fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition as recorded by the

		Contractor in consonance with its obligation in Sub-Clause 4.16.
14.1(a)	Contract Price	<i>Add a Sub-Clause (a) as under:</i> (a) “Employer will issue essentiality certificate (EC) under GOI notification No. 108/95 and 84/97 which will assist the Contractor to obtain any lawful exemptions from payment of Excise Duty or Import Duty on Plant and Materials, which are to be incorporated as a part of the Permanent Works. The Certificate will be issued in the format indicated in Section 9, which certifies the estimated quantities of Materials that are to be incorporated into the Permanent Works. The responsibility for obtaining any such exemptions from a Competent Authority will remain with the supplier/ Contractor and the Employer shall not in any way be responsible for admissibility of the claims or eligibility of the supplier/ Contractor.
14.10	Payment of Retention Money	<i>Add the following at the end of the Clause</i> The proportion of payments retained from each payment under the Development Period shall be 10% (ten percent) of the eligible payments. No interest will be paid on the Retention Money. Upon completion of the Defect Liability Period, half the Retention Money shall be repaid to the Contractor and the remaining half shall be repaid in three equal tranches to be released along with the proportion of the Performance Security in accordance with Sub-Clause 4.2 [<i>Performance Security</i>].
14.18	Asset Replacement Fund	<i>Sub-Clause 14.18 Replace the first para by following two paras:</i> “The Asset Replacement Fund is to provide the necessary funding for the replacement of items of Plant identified in the Asset Replacement Schedule as required for the continued efficient operation of the Works for the duration after completion of Development Period and up to the Contract Completion Date. Two separate streams of Asset Replacement Fund are to be established by the Contractor for replacement of Existing Assets and New Assets respectively”.
15.8	Corrupt or Fraudulent Practices	<i>Add Sub-Clause 15.8 as provided hereunder:</i> If the Employer determines, based on reasonable evidence, that the Contractor has engaged in Corrupt or Fraudulent Practices in the award or

		<p>implementation of the Contract, then the Employer may, after giving 14 days notice to the Contractor, terminate the Contract and expel the Contractor from the Site, and the provisions of Clause 15 shall apply as if such termination had been made under Sub-Clause 15.2 [Termination by Employer].</p> <p>Should any employee of the Contractor be determined, based on reasonable evidence, to have engaged in corrupt, fraudulent or coercive practice during the execution of the work then that employee shall be removed in accordance with Sub-Clause 6.9 [Contractor's Personnel].</p> <p>For the purposes of this Sub-Clause:</p> <ul style="list-style-type: none">(a) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;(b) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;(c) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party; and(d) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.
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Schedules to General Conditions of Contract

- Schedule 1: Obligations of the Employer through BUIDCo - supplement to GCC Clause 2
- Schedule 2: Obligations of the Employer through BMC - supplement to GCC Clause 2
- Schedule 3: Obligations of the Contractor - supplement to GCC Clause 4
- Schedule 4: BMC Personnel - supplement to GCC Sub-Clause 2.3
- Schedule 5: Contractor Payments - supplement to GCC Clause 14
- Schedule 6: Terms of Reference (ToR) of Auditing Body – supplement to GCC Sub-Clause 10.3

Schedule 1: Obligations of the Employer through BUIDCo

- 1.1. During the term of this Contract, the Employer shall have the following obligations:
- 1.2. Overall Project Management including review, finalization, maintenance and supervision of the agreed Service Improvement Plan, disbursement of the capital expenditures in accordance with the procedure specified in the construction contract, disbursement of Contractor Payments set out in Schedule 5, taking decisions regarding the completion of the Mandatory Works and the achievement of the respective obligations by each party, and the issue of the certificate of commencement of Development and Operating Periods.
- 1.3. Preparing applications on behalf of BMC, in accordance to standard procedures for obtaining all statutory clearances and approvals required from Government of Bihar and/or Government of India, concerning project implementation including all environmental clearances, permission from highway and railway authorities, inland waterway authorities, National Ganga River Basin Authority (NGRBA), and any other such authorities as may be required.
- 1.4. The approval of investments as per the agreed Service Improvement Plan.
- 1.5. On receipt of a request from the Contractor, the obligation to direct BMC to depute a specified number of employees to the Contractor to report on the Initial Takeover Date.
- 1.6. On receipt of a request from the Contractor to release sufficient funds for either (a) replacing any assets approved under the Asset Replacement Schedule out of the Asset Replacement Fund, or (b) undertaking Major Maintenance like replacement of existing pumps or electrical infrastructure or provision of new tube wells or any such new works etc., but not including those assets procured and installed by the Contractor as part of the approved Service Improvement Plan, and expressly permitting the Contractor to implement such works on appropriate Variation orders or organizing implementation of such works by third party contractors under separate contracts in such a manner that it will not affect the smooth conduct of the Contractor Obligations under this Contract.
- 1.7. Be responsible for the overall project management including decisions regarding achievement/non-achievement of performance obligations by the Contractor and release of eligible payments to the Contractor.
- 1.8. Supervise payments to the Contractor, all consultants and sub-contractors on request of the main Contractor.
- 1.9. Manage the project roles and responsibilities, interfaces and resolution of problems arising out of them using appropriate level(s) of interface.
- 1.10. Manage and disburse the investment component of the Project.
- 1.11. Timely disbursement of all the eligible Contractor Payments on successful fulfillment of Contractor Obligations under this Contract.
- 1.12. Establish a dedicated project account with funds secured from ADB and Government of Bihar sufficient to ensure at least 90 days cumulative Contractor Payments at any given period of the Contract.

- 1.13. Be responsible for all communications with regard to organizing project funding, reporting to the funding agency, and obtaining necessary statutory approvals from the Government of Bihar.

Schedule 2: Obligations of Employer through BMC

1. Access to Project Facilities
 - 1.1. BMC shall provide to the Contractor, at no cost to the Contractor, free, continuous and exclusive access to, possession and right to use of, and rights over, the land, installations, and Project Facilities, sufficient to enable the Contractor to carry out its obligations under this Contract on or before the Commencement Date until the Contract Completion Date. For the avoidance of doubt, the term "Contractor" as used herein shall include duly authorized officers, employees, Contractor's representatives and sub-contractors.
 - 1.2. Ownership of the Project Facilities shall remain with BMC.
 - 1.3. BMC shall on or before the Commencement Date, grant, or procure for the benefit of the Contractor the rights and powers to repair or replace the facilities, to lay pipes, construct civil structures, install equipment and machinery on its behalf (and carry out necessary excavations to achieve this), undertake necessary remedial works at the Barari Water Works and pumping stations and new works, where appropriate, and to install connections and any other rights and powers required by the Contractor to carry out its obligations under this Contract. The Contractor shall give the public or BMC reasonable notice of any necessary work which is likely to cause a disruption to the public or BMC, and the Parties shall use their best endeavors to agree a mutually acceptable program for such work.
 - 1.4. To the extent that BMC requires access to the Project Facilities, for example to carry out statutory duties, it shall request such access from the Contractor (such consent not to be unreasonably withheld or delayed). BMC, its sub-contractors, employees and consultants (other than the Contractor), in exercising their rights of access to the Project Facilities within the Service Area, shall comply at all times with:
 - a) All governing Laws, relevant permits set forth in GCC Sub-Clause 1.13 and other permits for the services and all relevant health and safety requirements;
 - b) Instructions and directions issued by the Contractor which are necessary to ensure compliance by the Contractor with any governing Laws and any relevant health and safety requirements applicable to their respective activities in the Service Area; and
 - c) Such health and safety regulations and Site regulations as the Contractor has in effect at the facilities from time to time, such regulations having been provided to BMC.
 - 1.5. The Contractor shall be relieved from performance of its obligations under this Contract to the extent that BMC or its sub-contractors impede or prevent the performance by the Contractor of its obligations under this Contract but shall use reasonable endeavors to perform the services and mitigate any loss or damage.

- 1.5.1. BMC shall be entitled to monitor on a regular basis the Contractor's performance of the services and may request any technical documents and reports necessary to do so provided that such requests would not hinder the Contractor in performing its obligations under the Contract. The Employer shall have access to the Project Facilities to inspect the facilities during business hours upon reasonable advance notice to the Contractor. BMC shall be entitled to delegate such inspection rights to a third party provided that the same conditions shall apply.
- 1.6. Where BMC/the Employer or its sub-contractors, employees, consultants or agents cause damage to the Project Facilities in the exercise of its rights under this Sub-Clause 1.6, BMC/the Employer shall be liable to the Contractor for the reasonable cost of repairing the damage to the facilities so caused. Such damage shall be treated as a Release Event.
2. BMC shall provide free of charge sufficient space to construct an office, storage, Consumer Service Centers, and parking space to enable the Contractor to perform its obligations under this Contract.
3. Land Rent, and Property Taxes if any
 - 3.1. BMC shall be responsible for and pay the land rent and the property taxes if any and the Contractor shall not be responsible for these charges. BMC will also bear the cost of any increase in such charges from time to time.
 - 3.2. BMC will remain responsible for all water related revenue arrears (property tax) dated prior to the Initial Takeover Date and up to 365 days thereafter inclusive.
4. Tariff Setting and Timely Revisions
 - 4.1. Within 365 days from the Initial Takeover Date BMC shall be responsible for establishing a water charging regime by setting a volumetric tariff to be charged for water consumed through a metered connection and monthly minimum fixed charges for consumers who have no meters.
 - 4.2. Cost recovery will be phased in to avoid tariff shock to the consumers, and so that the tariff is commensurate with improved levels of service as set out in Clause 14 – Performance Standards in Section 6.1 Scope of Services.
 - 4.3. It is required that the tariff for potable water:
 - i. Shall by the end of Year 2 from the Initial Takeover Date be able to recover at least [20%] of the Contractor Payments;
 - ii. Shall by the end of the Development Period be able to recover [50%] of the Contractor payments;
 - iii. Shall by the end of 2 (two) years from the Scheduled Development Completion Date be able to recover [100%] of the Contractor payments; and

- iv. Thereafter shall be increased annually in line with inflation, and to meet revised cost recovery objectives as established by BMC/GoB.
5. Grant of Connections
 - 5.1. Upon receiving a request and recommendation from the Contractor and confirmation of proof of payment of any statutory charges from a potential new Consumer, BMC shall grant the approval for providing service connections to such Consumers.
 6. Non-revenue Connections and Consumption
 - 6.1. The Contractor shall monitor the System in order to detect non-revenue connections and consumption. BMC shall assist the Contractor in identifying non-revenue connections and consumption and preparing invoices for non-revenue consumption. For the avoidance of doubt, the Contractor shall not be responsible for the quality of water taken at non-revenue connections unless and until a formal connection has been installed and a continuous 24 Hour Supply is provided to that connection. BMC shall indemnify the Contractor for any cost, penalty, claim, damage, injury, charge, fine, levy or liability arising out of or in connection with any non-revenue connections or water abstracted therefrom to the extent that the connections are made into pipes carrying raw or clarified water, unless and until such non-revenue connections are connected to the potable water system or local treatment processes are put in place.
 7. Licenses and Consents
 - 7.1. BMC shall procure, obtain and maintain all BMC consents to enable the Contractor to perform its duties and its obligations under the Contract for the duration of the Contract. BMC shall deal directly with the departments of the government or statutory authorities on behalf of the Contractor on all matters that require consultation and discussion with such department and shall ensure that the Contractor is able reasonably to perform its duties under the Contract. The Contractor will provide at BMC's request all reasonable assistance and support to BMC in procuring BMC's Consents.
 8. Electricity
 - 8.1. BMC shall provide the Contractor with continuous and unimpeded access to electricity supply facilities. BMC shall pay to the electricity supply company all the charges for demand, consumption, etc., as levied other than the penalties if levied due to operating negligence of the Contractor or power factor surcharges.
 9. Third Party Contractors
 - 9.1. BMC shall make an inventory of any Works in relation to the facilities which are in progress (and funded by BMC or Government of Bihar) at the Commencement Date, deliver to the Contractor two copies of any associated

contracts as required by the Contractor, and agree with the Contractor on the conditions of hand over of these Works to the Contractor for operation, maintenance and management (as applicable) by the Contractor upon the commissioning of such Works, including any additional cost to be incurred or any increase in the Contractor Payments required by the Contractor.

Schedule 3: Obligations of Contractor

1. Contractor Obligations

1.1. General Obligations of the Contractor

1.1.1. The Contractor shall have the right and obligation to provide the Services in the Service Area on an exclusive basis during the Contract period. Should the Employer desire to expand the Service Area, the Employer and the Contractor shall meet and negotiate in good faith with a view to agreeing on the provision of Services by the Contractor to such expanded Service Area and the payment to the Contractor therefor.

1.1.2. The Contractor shall perform the Services in accordance with governing Laws (including all environmental legislations), Asian Development Bank policies, guidelines and agreements with Government of India and Government of Bihar on BUDIP, approved SIP, prudent industry practice, the Performance Standards, the urban poor services policies, and the locally applicable regulatory social policies if any.

1.1.3. The Contractor shall have care and custody of Project Facilities during the term of this Contract.

1.1.4. Subject to Section 1.1.2 above, the Contractor shall have discretion in determining the means and methods to be used to perform the Services.

1.2. Reporting and Review: The Contractor shall be responsible for submitting periodic reports to the Employer, as set forth below.

1.3. Accounting, Audit

1.3.1. The Contractor shall maintain accurate and systematic accounts and records in respect of the Services in such form and detail enabling clear identification of all relevant charges and cost incurred by the Contractor and the basis thereof as well as proper and timely technical and financial audits. Such accounts may be audited by external auditors as appointed by BUIDCo or ADB.

1.3.2. Financial accounts shall be in accordance with the accepted Indian accounting principles.

1.3.3. The Contractor shall permit the Employer or its designated representative to semi-annually inspect such accounts and records and shall permit AB to carry out technical and financial audits on an annual basis.

1.4. Conflict of Interests

1.4.1. The Contractor agrees that, during the term of this Contract and after two (2) years of its termination, the Contractor and its affiliates, as well

as any sub-contractor and any of its affiliates, shall be disqualified from providing Goods, Works or services (other than the Services and any continuation thereof) for any project resulting from or directly related to the Services.

1.4.2. Neither the Contractor nor its sub-contractors nor the Contractor personnel shall engage during the term of this Contract, either directly or indirectly in any business or professional activities in the Service Area which would conflict with the activities assigned to them under this Contract.

1.4.3. Notwithstanding Sections 1.4.1 to 1.4.2, the Contractor will be eligible to bid for subsequent contracts related to the Services, but shall not have any right of first refusal.

2. Standard of Service Provided by the Contractor

2.1. The Contractor shall perform all the Services from the Commencement Date until the Contract Completion Date in accordance with Section 6 Employer Requirements as well as:

- a) The standards of a reasonable and prudent Contractor;
- b) All relevant permits set forth in GCC Sub-Clause 1.13 and other permits for services in force from time to time;
- c) All governing Laws, in force from time to time; and

2.2. If the Contractor becomes aware of a conflict between the requirements set out in sub-section 2.1, it shall inform the Employer accordingly and the Parties shall discuss and agree upon the manner in which the Contractor should perform its obligations. Failing agreement the Employer shall direct the manner in which such conflict shall be resolved provided that the manner as directed by the Employer will not cause the Contractor, its employees, agents or sub-contractors to breach any mandatory or criminal Laws or to run any risk of criminal, penal or other non-monetary penalties or prosecution and that the Employer shall (save to the extent arising by virtue of any negligent act or Omission of the Contractor or a breach of this Contract by the Contractor) indemnify the Contractor against all costs, claims, damages, expenses, fines, losses, liabilities and penalties incurred or sustained by the Contractor as a result of the performance of the Services by the Contractor in accordance with such direction.

3. Inventory and spares: Five (5) days before the Initial Takeover Date, the Contractor and BMC shall undertake joint inspection, prepare an inventory of the spares, tools, consumables etc., available in operational sites and BMC stores and sign off such inventory. BMC shall transfer to the Contractor at no cost the spares, supplies and consumables which exist in the operational sites and BMC's stores at BWW on the Initial Takeover Date, and are the property of BMC, such that they are used for the operating obligations of the Contractor under this Contract. Any of these spares which remain with the Contractor before the Contract Completion

Date or on early termination shall be returned to BMC, unless the Contract is renewed or extended.

Schedule 4: BMC Personnel

1. Issues concerning BMC Personnel

1.1. Posting of BMC Personnel to the Contractor: On the Initial Takeover Date, or as soon as practicable thereafter, BMC shall, subject to applicable procedures, depute such number of existing employees to the Contractor for duties in the Service Area as stated in the agreed SIP. BMC shall provide the Contractor with details [name, age, qualifications, terms of employment] of each employee and shall specify the date on which the relevant employee shall report to the Contractor for duty.

1.2. Notification to BMC Personnel: The tentative list of BMC Personnel which would be available to the Contractor for deployment on O&M works is provided in Annex A of Schedule 4. The staff would be available to the Contractor from the Initial Takeover Date. BMC shall issue a letter to each existing Employee advising him/her of the proposed deputation of the BMC Personnel to the Contractor under the Deputation Rules for the purposes of the Contract, and that no changes shall be made to their existing terms of employment by the Corporation due to the deputation.

1.3. Management of BMC Personnel

- a. The Contractor shall have day to day line management responsibility for all BMC Personnel from the date the BMC Personnel are deputed to it.
- b. BMC shall ensure that the deputed employees directly report to and receive instructions from the Contractor and that the Contractor shall have full powers and responsibility for the management of the employees.

1.4. Wages of BMC Personnel

- a. BMC shall be liable to pay the deputed employees' rates of wages as are current at the date the employees are deputed to the Contractor. During the term of the deputation, the employees shall be entitled to wages, increments, bonus, leave with wages, compensation and all other employee benefits and entitlements in the same manner as such employees would have been entitled to in the employment of the BMC in absence of such deputation.
- b. BMC shall maintain any further remuneration and benefits in kind received by the deputed employees at the date the employees are deputed to the Contractor including pension benefits, medical and welfare arrangements, insurances and social security contributions. BMC shall continue to observe conditions of labor in accordance with the governing Laws.
- c. The Contractor shall be responsible for day to today maintenance of attendance, reporting absenteeism if any, work allocation, performance

monitoring and disbursement of monthly eligible emoluments of BMC Personnel and to this effect BMC shall make available sufficient funds at the disposal of Contractor who shall maintain a dedicated separate account for this purpose.

- d. It is expressly clarified that the responsibility and obligation of the Contractor in managing the disbursement of monthly eligible emoluments of BMC Personnel shall be limited to those relating to its service obligations, and to this effect BMC shall indemnify the Contractor from any claims of additional payment of emoluments, compensation if any, delay in release of funds from BMC and delay in administrative actions in BMC and additional tax obligations if any in undertaking such services on behalf of BMC.
- e. Nothing contained herein shall oblige BMC, in any manner whatsoever, to pay any wages, increment, bonus, compensation or any other employee benefit or entitlement to the persons directly employed by the Contractor.

1.5. Labor Laws: The Contractor shall comply with all the relevant labor Laws that apply to BMC Personnel, and shall duly afford to them all their legal rights. The Contractor shall keep BMC informed and, where necessary, consult with BMC in respect of any discussions between the deputed BMC Personnel and the relevant trade unions and any actual or threatened industrial disputes which could prevent or interfere with the proper fulfillment of the Contractor's obligations under this Contract.

1.6. Staff Re-allocation: The Contractor shall provide notice reasonably in advance and consult with BMC regarding any organizational changes the Contractor plans to introduce, which may affect the re-allocation of deputed BMC Personnel and the Contractor shall have to take into consideration any submissions made by BMC or the deputed BMC Personnel (individually or collectively).

1.7. Occupational Health and Safety: Precautions, no less onerous than that already in existence and being maintained by BMC at the Initial Takeover Date, but in accordance with applicable Indian Laws and standards, shall be taken by the Contractor to ensure the occupational health and safety of the BMC Personnel whilst performing duties required by the Contractor under this Contract. The Contractor shall, ensure that suitable arrangements are made for all necessary hygiene requirements and for the prevention of epidemics. The Contractor shall maintain such records and make such reports (if any) concerning health, safety and welfare of persons, and damage to property as are required under the governing Laws.

1.8. Repatriation of BMC Personnel : The Contractor may, by written notice to the Employer, request after providing adequate reasoning, to repatriate or remove (or cause to be removed) any deputed BMC employee employed in the Service Area in order for the Contractor to properly fulfill its obligations

under the Contract. If appropriate, BMC shall then depute (or cause to be deputed) a suitable replacement or reserves full right to deny such deputation.

1.9. Personnel Policies

- a. The Contractor shall establish policies in relation to the deputed BMC Personnel that will allow the Services to be performed safely, reliably in accordance with the provisions of this Contract and consistent with the standards of a reasonable and prudent Contractor and shall get the said policies approved by BMC before implementing the same. In no event will the Contractor establish any policy that is contrary to any existing policy of BMC and in the event there is a conflict between BMC's policy and the Contractor's policy, BMC's policy will prevail.
- b. The compliance with the above policies shall be subject to any waivers which may be requested by the Contractor from time to time and which may be granted by BMC under governing Laws to ensure the efficient and effective operation and maintenance of the facilities, provision of the Services by the Contractor, and proper fulfillment of the Contractor's obligations under the Contract.

1.10. Disorderly Conduct: The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the deputed BMC Personnel, and to preserve peace and protection of persons and property in the neighborhood of the Service Area against such conduct.

1.11. Safety Precautions: The Contractor shall comply with all applicable safety regulations in its access arrangements and operations in the Service Area.

2. Contractor's Personnel: It is expressly understood between the Parties that the employees, other than the deputed BMC Personnel, who are directly employed by the Contractor shall not have any employment relationship with BMC and BUIDCo as the case may be and Contractor's performance under this Contract does not entitle such employees to claim employment or continuation of employment with BMC on expiry or at any time before or after expiry of this Contract. The Contractor should at all times assume full legal and social responsibility towards such employees as employer and shall not by its acts or Omission provide any direct or indirect indication to the employees regarding their employment or chances of employment directly with BMC.
3. BMC's Employees: It is expressly understood between the Parties that the deputed BMC Personnel shall not have any employment relationship with the Contractor and the Contractor's performance under this Contract does not entitle the Contractor to claim an employer-employee relationship with any of the BMC Personnel on the expiry or at any time before or after expiry of this Contract. The Contractor shall not by its acts or Omission, provide any direct or indirect indication to the BMC Personnel regarding their employment or chances of employment directly with the Contractor.

4. Indemnity

- a. BMC and BUIDCo shall not be liable for, and the Contractor shall indemnify, defend and hold harmless, BMC and BUIDCo's sub-contractors, agents and employees (excluding the deputed BMC Personnel), from any and all claims for loss, damage and expense of whatever kind and nature, including all related costs and expenses, in respect of termination of a BMC employee whilst on duty in the Service Area (except in relation to the repatriation of BMC Personnel under paragraph 1.8 of this Schedule) and in respect of loss of, or damage to, any third party property to the extent that the same arises out of any negligent act, omission, breach of this Contract, breach of the Contractor's statutory obligations and duties, breach of a duty of care imposed by law on BMC or anyone directly or indirectly employed by BMC, its Contractors and sub-contractors or their respective officers, agents or employees.
- b. BMC and BUIDCo shall not be liable for, and the Contractor shall indemnify, defend and hold harmless BMC and BUIDCo from any and all claims of whatever kind or nature from the employees of the Contractor, including all related legal costs and expenses, in respect of employment, termination or change in terms of employment of such employees and any other accrued benefits including pension benefits, personal injury to, or death of, Contractor's employees whilst on duty on behalf of the Contractor.

Annex A to Schedule 4

S No	Name	Qualifications	Position	Employment status (Permanent/ contractual/ Daily wages)	Date of birth	Date of Retirement from service	Fitness to work (Yes/No)
1	Sri Hareram Singh	B. Sc. (Engineering)	SDO	Permanent	31.12.1958	Dec. 2018	Yes
2	Krishana Prasad	--	Junior Eng.	Contractual	--	--	Yes
3	Sri Prabhunath Jha	B. Sc.	Clerk	Permanent	20.11.1957	Nov. 2017	Yes
4	Umesh Shah	BA	Time Keeper	Permanent	25.03.1964	Mar-24	Yes
5	Md. Husain	Matric	Supervisor	Permanent	08.07.1953	Jul-13	Yes
6	Jawar Tanti	Matric	Pipeline Inspector	Permanent	02.05.1959	May-19	Yes
7	Om Prakash Yadav	Matric	Pipeline Inspector	Permanent	07.02.1960	Feb-20	Yes
8	Virendra Prasad Yadav	Matric	Pipeline Inspector	Permanent	21.02.1960	Feb-20	Yes
9	Shekh Ansar	Fifth	Pipeline Mistri	Permanent	01.01.1955	Dec-14	Yes
10	Adhik Lal Yadav	Non-Matric	Pipeline Mistri	Permanent	15.03.1960	Mar-20	Yes
11	Yamuna Prasad Yadav	Non-Matric	Pipeline Mistri	Permanent	07.07.1956	Jul-16	Yes
12	Anun Mandal	Seventh	Charge Man	Permanent	11.01.1960	Jan-20	Yes
13	Asha Devi	Fifth	Peon	Permanent	04.03.1962	Mar-22	Yes
14	Sushil Yadav	Seventh	Charge Man	permanent	10.04.1956	Apr-16	Yes
15	Jawahar Vishkarma	Eight	Fitter	Permanent	15.06.1959	Jun-19	Yes
16	Yogendra Shah	Non-Matric	Molder	Permanent	03.04.1954	Apr-14	Yes

17	Ravindra Prasad Mandal	Seventh	Blacksmith	Permanent	22.12.1962	Dec-22	Yes
18	Dinesh Prasad Yadav	Seventh	Shift Charge Man	Permanent	30.01.1957	Jan-17	Yes
19	Md. Shaiyad	seventh	Shift Charge Man	Permanent	31.12.1959	Dec-19	Yes
20	Anirudha Yadav	Ninth	Pump Attended	Permanent	25.12.1954	Dec-14	Yes
21	Ramkishor Paswan	Seventh	Shift Charge Man	Permanent	30.05.1960	May-20	Yes
22	Rajkumar Das	Matric	Gardener(Mali)	Permanent	15.01.1964	Jan-24	Yes
23	Kanchan Ghose	Matric	Pump Attended	Permanent	02.09.1960	Sep-20	Yes
24	Pradeep Kishor Jha	Seventh	Asst. Shift Charge	Permanent	05.02.1961	Feb-21	Yes
25	Samsool Haq	Seventh	Pipeline Mistri	Permanent	15.06.1962	Jun-22	Yes
26	Sachit Prasad shah	Seventh	Valve Man	Permanent	20.02.1960	Feb-20	Yes
27	Vijay Kumar Jha	Matric	Pump Attended	Permanent	01.11.1961	Oct-21	Yes
28	Kamal Prasad Tanti	Seventh	Pipeline Mistri	Permanent	11.01.1957	Jan-17	Yes
29	Md. Sikandar	Seventh	Pipeline Mistri	Permanent	05.08.1964	Aug-24	Yes
30	Omprakash Tanti	Non-metric	Pump Helper	Permanent	06.01.1968	Jan-28	Yes
31	Sampat Shah	Eight	Pump Helper	Permanent	01.03.1974	Feb-34	Yes
32	Md. Muslim	Seventh	Pump Helper	Permanent	12.04.1972	Apr-32	Yes
33	Indradev Yadav	Eight	Peon	Permanent	31.12.1978	Dec-38	Yes
34	Manesh Prasad Yadav	Matric	Charge Time Keeper	Permanent	07.01.1956	Jan-16	Yes
35	Devendra Kumar Mishra	Non-matric	Assistant Operator	Permanent	31.07.1957	Jul-17	Yes
36	Shanti Poddar	Matric	Assistant	Permanent	01.08.1958	Jul-18	Yes

			Operator				
37	Nandan Kumar Singh	Matric	Assistant Operator	Permanent	27.10.1959	Oct-19	Yes
38	Saiyad Amin	Matric	Filter Operator	Permanent	15.01.1961	Jan-21	Yes
39	Shyam Charan Gop	Matric	Filter Operator	Permanent	05.08.1961	Aug-21	Yes
40	Gajadhar shah	Matric	Assistant Operator	Permanent	27.01.1963	Jan-23	Yes
41	Hikmat Ali	Matric	Pipeline Helper	Permanent	07.07.1965	Jul-25	Yes
42	Hari Shankar Tiwari	Matric	Pipeline Helper	Permanent	08.07.1966	Jul-26	Yes
43	Shambhu Sharan Jha	Eight	Pump Operator	Permanent	15.10.1962	Oct-22	Yes
44	Makichand Shah	Seventh	Valve man	Permanent	05.01.1957	Jan-17	Yes
45	Imtiazul Haq	Ninth	Valve man	Permanent	15.08.1957	Aug-17	yes
46	Saikul Ansari	Non-metric	Valve man	Permanent	16.06.1958	Jun-18	Yes
47	Shivnandan Tanti	Seventh	Valve man	Permanent	01.08.1959	Aug-19	Yes
48	Nathu Pandit	Seventh	Valve man	Permanent	01.01.1960	Dec-19	Yes
49	Sachitanand Mishra	Ninth	Pump Helper	Permanent	15.06.1960	Jun-20	Yes
50	Dinbandhu Gupta	Seventh	Pump Helper	Permanent	03.09.1960	Sep-20	Yes
51	Ganga Yadav	Non-metric	Pump Helper	Permanent	04.01.1961	Jan-21	Yes
52	Md. Mustafa	Seventh	Filter Helper	Permanent	06.09.1961	Sep-21	Yes
53	Md. Bholu	Seventh	Filter Helper	Permanent	10.08.1962	Aug-22	Yes
54	Yogendra Yadav	Eight	Filter Helper	Permanent	05.10.1962	Oct-22	Yes
55	Md. Ibrar	Seventh	Filter Helper	Permanent	20.11.1962	Nov-22	Yes

56	Rajkumar Yadav	Seventh	Filter Helper	Permanent	08.01.1963	Jan-23	Yes
57	Suresh Prasad Yadav	Non-metric	Filter Helper	Permanent	02.03.1963	Mar-23	Yes
58	Gopi Prasad Yadav	Seventh	Pump Helper	Permanent	05.07.1963	Jul-23	Yes
59	Madan Mohan Sharma	Non-metric	Pump Operator	Permanent	01.01.1964	Dec-23	Yes
60	Vijay Yadav	Eight	Pump Operator	Permanent	19.01.1965	Jan-25	Yes
61	Md. Sagir	Seventh	Pump Operator	Permanent	05.01.1965	Jan-25	Yes
62	Ram Kumar Nandan Jha	Eight	Pump Operator	Permanent	21.01.1965	Jan-25	Yes
63	Md. Matin Khan	Seventh	Pump Helper	Permanent	02.05.1965	May-25	Yes
64	Ganesh Yadav	Fifth	Pump Helper	Permanent	09.06.1965	Jun-25	Yes
65	Bhanu Ray	Fifth	Pipeline Helper	Permanent	11.08.1965	Aug-25	Yes
66	Mani Prasad Singh	Fifth	Pipeline Helper	Permanent	23.05.1964	May-24	Yes
67	Rajkumar Tanti	Seventh	Pipeline helper	Permanent	15.11.1967	Nov-27	Yes
68	Ramcharan Gop	Eight	Guard	Permanent	09.10.1968	Oct-28	Yes
69	Manoj Kumar Ray	Eight	Valve man	Permanent	15.02.1969	Feb-29	Yes
70	Subodh Yadav	Fourth	Pipeline helper	Permanent	26.04.1970	Apr-30	Yes
71	Md. Farid	Eight	Sweeper	Permanent	04.02.1971	Feb-31	Yes
72	Sanjay Kumar Pandey	Eight	Pump helper	Permanent	03.01.1971	Jan-31	Yes
73	Ramvilash Shah	Ninth	Pump helper	Permanent	13.08.1968	Aug-28	Yes
74	Sunil Das	Seventh	Pump helper	Permanent	06.02.1969	Feb-29	Yes
75	Chunchun Yadav	Educated	Pump helper	Permanent	16.03.1957	Mar-17	Yes

76	Shamsher khan	Fifth	Pump Helper	Permanent	15.03.1963	Mar-23	Yes
77	Khurshid Allam	Eight	Pump helper	Permanent	05.02.1964	Feb-24	Yes
78	Singeshwar Shah	Seventh	Sweeper	Permanent	02.01.1969	Jan-29	Yes
79	Lalbahadur Singh	Educated	Pump helper	Permanent	09.05.1972	May-32	Yes

Some Employee these are Nagar Nigam Wings But all are salary found by Water Supply Dept.

List 02 Temporary and Other Department Staff.

80	Devendra Yadav		Clerk	Contractual		Retired	
81	Srinandan Mandal		Charge Man	Contractual		Retired	
82	Vijay Yadav		Guard	Permanent	08.01.1968	Jan-28	Yes
83	Sunil Kumar		Guard	Permanent	05.02.1968	Feb-28	yes
84	Raj Kishor Mandal		Peon	Permanent	02.01.1970	Jan-30	Yes
85	Ashok Yadav		Peon	Permanent	06.04.1960	Apr-20	Yes
86	Surendra Prasad Singh		Peon	Permanent	03.06.1961	Jun-21	Yes
87	Ajit Gupta		Gardener (Mali)	Permanent	02.01.1966	Jan-26	Yes
88	Rameshwar Prasad Yadav		Peon	Permanent	15.05.1973	May-33	Yes
89	Bachchu Ray		Road kooli	Permanent	25.05.1970	May-30	Yes
90	Narayan Mandal		Road kooli	Permanent	05.06.1968	Jun-28	Yes
91	Vikram Hari			Temporary			
92	Keshwav Narayan Choudhary			Contractual			

List 03 Temporary Staff Working on Maintenance

S No	Name	Qualifications	Position	Employment status (Permanent/ contractual/ Daily wages)	Date of birth	Date of Retirement from service	Fitness to work (Yes/No)
1	Raman Kumar Yadav			Temporary			
2	Sunil Kumar			Temporary			
3	Raj Kumar Shah			Temporary			
4	Ranjit Kumar			Temporary			
5	Prashant Kumar			Temporary			
6	Durgesh Kumar			Temporary			
7	Vijay Kumar Pandey			Temporary			
8	Nand Kishor Tanti			Temporary			
9	Gautam Kumar			Temporary			
10	Niranjan Kumar Yadav			Temporary			
11	Ranjan Kumar Shah			Temporary			
12	Manoj Kumar Yadav			Temporary			

List 04 Temporary Staff Working as Tube Well Operators

S No	Name	Qualifications	Position	Employment status (Permanent/ contractual/ Daily wages)	Date of birth	Date of Retirement from service	Fitness to work (Yes/No)
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1	Rajmani Ranjan		Operator	Temporary			
2	Pintu Kumar Yadav		Operator	Temporary			
3	Arun Mandal		Operator	Temporary			
4	Pankaj Kumar		Operator	Temporary			
5	Rintu Rishidev		Operator	Temporary			
6	Mukesh Kumar		Operator	Temporary			
7	Phulchand Shah		Operator	Temporary			
8	Md. Nisad		Operator	Temporary			
9	Sintu Kumar		Operator	Temporary			
10	Md. Hasnen		Operator	Temporary			
11	Ranjan Kumar		Operator	Temporary			
12	Md. Kasim		Operator	Temporary			
13	Anil Chaudhary		Operator	Temporary			
14	Kameshwar Yadav		Operator	Temporary			
15	Navin Kumar Yadav		Operator	Temporary			
16	Anup Anand		Operator	Temporary			
17	Arvind Kumar 01		Operator	Temporary			
18	Atma Ram		Operator	Temporary			
19	Manoj Paswan		Operator	Temporary			
20	Madhusudan Shah		Operator	Temporary			
21	Dipak Kumar 01		Operator	Temporary			

22	Kaushal Kumar		Operator	Temporary			
23	Karan Raj		Operator	Temporary			
24	Sanjay Yadav		Operator	Temporary			
25	Santosh Kumar		Operator	Temporary			
26	Niranjan Yadav		Operator	Temporary			
27	Kapil Kumar Tanti		Operator	Temporary			
28	Sanjay Kumar		Operator	Temporary			
29	Pankaj Kumar 02		Operator	Temporary			
30	Kanhai Yadav		Operator	Temporary			
31	Ajit Kumar		Operator	Temporary			
32	Rajesh Kumar Ray		Operator	Temporary			
33	Ankit Kumar		Operator	Temporary			
34	Dipak Kumar 02		Operator	Temporary			
35	Sinod Kumar		Operator	Temporary			
36	Tusaar Kumar		Operator	Temporary			
37	Md. Imran		Operator	Temporary			
38	Naval Kishor Nakul		Operator	Temporary			
39	Anand Ajad		Operator	Temporary			
40	Arvind Kuumar 02		Operator	Temporary			
41	Rohit Kumar 01		Operator	Temporary			
42	Samesh Kumar		Operator	Temporary			

43	Rajesh Kumar Yadav		Operator	Temporary			
44	Tapan Kumar		Operator	Temporary			
45	Munna Kumar		Operator	Temporary			
46	Nirmal Kumar		Operator	Temporary			
47	Piyush Kumar		Operator	Temporary			
48	Bibhuti Kumar		Operator	Temporary			
49	Suraj Kumar		Operator	Temporary			
50	Rohit Kumar 02		Operator	Temporary			
51	Raj Kumar Thakur		Operator	Temporary			
52	Naresh Yadav		Operator	Temporary			
53	Pawan Kumar		Operator	Temporary			
54	Abhikesh Kumar		Operator	Temporary			
55	Kulchand Kumar		Operator	Temporary			
56	Vipin Kumar		Operator	Temporary			
57	Subhod Kumar		Operator	Temporary			
58	Kumar Rudesh		Operator	Temporary			
59	Ravikant Bhagat		Operator	Temporary			
60	Yogesh Jha		Operator	Temporary			
61	Pritam Kumar Suman		Operator	Temporary			
62	Ashok Yadav		Operator	Temporary			
63	Amresh Kumar		Operator	Temporary			

64	Fantush Shah		Operator	Temporary			
65	Vikash Kumar		Operator	Temporary			
66	Vinod Paswan		Operator	Temporary			
67	Durgesh Ray		Operator	Temporary			
68	Samarjeet Yadav		Operator	Temporary			
69	Dilip Yadav		Operator	Temporary			
70	Dev Kumar		Operator	Temporary			
71	Pravin Kumar		Operator	Temporary			
72	Manoj Kumar Gupta		Operator	Temporary			
73	Sukesh Kumar		Operator	Temporary			
74	Kanahaiya Kumar		Operator	Temporary			
75	Avdesh Yadav		Operator	Temporary			
76	Sanjeev Kumar Yadav		Operator	Temporary			
77	Kanahaikant		Operator	Temporary			
78	Shatrudhan Mishra		Operator	Temporary			
79	Vikash Kumar		Operator	Temporary			
80	Manoj Yadav		Operator	Temporary			
81	Ranjan Jha		Operator	Temporary			
82	Rohit Tanti		Operator	Temporary			
83	Rajesh Kumar		Operator	Temporary			
84	Vikash Kumar		Operator	Temporary			

	Garv						
85	Raj Kumar Tanti		Operator	Temporary			
86	Amit Kumar		Operator	Temporary			
87	Raghunandan Kumar		Operator	Temporary			
88	Pankaj Kumar 03		Operator	Temporary			
89	Bajrangi Yadav		Operator	Temporary			
90	Sanjay Kumar		Operator	Temporary			
91	Shivkumar Jha		Operator	Temporary			
92	Abdul Rahman		Operator	Temporary			
93	Md. Mastaphak Kamal		Operator	Temporary			
94	Vijay Kumar Singh		Operator	Temporary			
95	Alok Kumar		Operator	Temporary			
96	Subhash Yadav		Operator	Temporary			
97	Ravi Kumar		Operator	Temporary			
98	Md. Aslam		Operator	Temporary			
99	Rajkishor Yadav		Operator	Temporary			
100	Rajiv Prasad Yadav		Operator	Temporary			
101	Balkaran Kumar Singh		Operator	Temporary			
102	Suman Kumar		Operator	Temporary			
103	Bambam Yadav		Operator	Temporary			

104	Abhishek Kumar		Operator	Temporary			
105	Subhash Kumar		Operator	Temporary			
106	Vinod Mandal		Operator	Temporary			
107	Sunil Kumar Chaudhary		Operator	Temporary			
108	Manish Kumar		Operator	Temporary			
109	Md. Nasim		Operator	Temporary			
110	Md. Shako		Operator	Temporary			
111	Md. Bachchu		Operator	Temporary			

Schedule 5: Contractor Payments

1. The total Contractor Payments comprises of two components:
 - a. Payment for Design-Build works; and
 - b. Payments for Operation Service.
2. Price Adjustment for Payment for Design-Build works: All Contractor Payments for Design-Build works under this Contract shall be governed in accordance to the adjustments for change in costs as provided in GCC Sub-Clause 13.8

- 2.1. The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae for each of the currencies in which the Contract Price is payable. No adjustment is to be applied to work valued on the basis of cost or current prices. The formulae shall be of the following general type:

$$P_n = a + b (L_n/L_o) + c (C_n/C_o) + d (S_n/S_o) + e(O_n/O_o)$$

where

“**P_n**” is the adjustment multiplier to be applied to the estimated contract value in the currency of payment of the work carried out in period “n”, this period shall be in month;

“**a**” is a fixed coefficient stated in the table of adjustment data, representing a non-adjustable contractual payments;

“**b**”, “**c**”, “**d**”, and “**e**” are the fixed coefficients, stated in the table of adjustment data, representing the estimated proportion of various components;

“**L_n**”, “**C_n**”, “**S_n**”, and “**O_n**” are the current cost indices or reference price for period “n” expressed in the currency of payment, each of which is applicable to the tabulated cost element on 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and

“**L_o**”, “**C_o**”, “**S_o**”, and “**O_o**” are the base cost indices or reference price, expressed in the currency of payment, each of which is applicable to the tabulated cost element on the Base Date.

- 2.2. The cost indices or reference prices stated in Table A.1, table of adjustment data, provided in Section 4, shall be used. If their source is in doubt, it shall be determined by the Employer’s Representative. For this purpose, reference shall be made to the values of the indices at stated dates for the purposes of clarification of the source; although these dates (and thus these values) may not correspond to the base cost indices.

- 2.3. In cases where the “currency of index” is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the central bank of the country, of this relevant currency on the above date for which the index is required to be applicable.
 - 2.4. Until such time as each current cost index is available, the Employer’s Representative shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.
 - 2.5. If the Contractor fails to complete the Design-Build works within the Time for Completion, adjustment of prices thereafter shall be made using either (i) each index or price applicable on the date 49 days prior to the expiry of the Time for Completion of the Design-Build works, or (ii) the current index or price, whichever is more favorable to the Employer.
 - 2.6. The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or inapplicable, as a result of Variations.
3. Interim Payments for Design-Build works implemented during the Development Period.
 - 3.1. The eligibility of payment shall be as follows:

(A) For Pipe laying works including all accessories

- i. 65% of the quoted price, against supply and storage at Site;
- ii. 15% after laying and jointing of pipes;
- iii. 10% after sectional testing is completed successfully; and
- iv. 10% on setting up the DMA and commissioning the pipeline.

The Contractor needs to start laying, jointing and testing of pipes simultaneously. At any time, payment against supply of pipes will not be more than 30 Kms of un-laid length, and payment against laying and jointing will not be more than 30 Kms of untested pipeline in the field.

(B) For Mechanical/ Electrical items

- i. 65% of the quoted price, against supply and storage at Site;
- ii. 15% after installation of the equipment/item;
- iii. 10% after testing and trial run completed successfully; and
- iv. 10% on commissioning of the equipment.

(C) Civil work Construction and others

Civil work payment shall be made on the basis of actual progress of civil works.

All certified payments as per above payment schedule shall be subjected to deductions of retention money and other statutory deductions as applicable.

(D) For Service Reservoirs

The milestones, cost and cumulative cost shown in the table below apply:

Milestone	% of Cost	Cumulative %
After foundation including staging up to ground level	20%	20%
After casting complete Staging	20%	40%
After casting Ring Beam, cone wall and Bottom Slab or Bottom Dome	10%	50%
After Casting Container Vertical wall	15%	65%
After Casting Stair-Case, Top Dome etc.	10%	75%
Installation of all fittings, piping arrangements, valves etc.	15%	90%
Completion of all civil works and electrification etc.	5%	95%
Hydraulic testing of the Reservoir	5%	100%

4. While making running payment for the Design-Build works carried out by the Contractor, the cost of Works will be calculated based on BOQ unit rates or the new rates as approved by the Employer. The adjustment in cost of Works will be calculated separately. The difference in adjusted cost and cost of Works already paid shall be paid once the adjustment in cost is calculated.
 5. Payment for Operation Service: The Contractor shall be eligible for payment for Operation Service from the Initial Take Over Date. The payment for Operation Service shall comprise the following but are not limited to:
 - a. Wages for Contractor personnel;
 - b. Cost of chemicals utilized in the treatment of water at BWW;
 - c. Consumables for preventive and corrective maintenance of all existing and new infrastructure assets being operated and maintained by the Contractor;
 - d. All cost of repairs undertaken as part of preventive and corrective maintenance;
 - e. All cost related to administration, management, monitoring, reporting, accounts, regulatory compliance and incidental charges if any; and
 - f. It is expressly clarified that all charges related to electricity payments, raw water extraction cost if any, and disposal of effluents from BWW, shall be paid directly by BMC or BUIDCo.
- 5.1. The payments for Operation Service provided under this Clause shall comprise the following three distinct components:
- a. Barari Production Charge: The Barari Production Charge (**BP_C**) is for operating, maintaining and producing the stipulated quality of safe potable drinking water from the Barari Water Works;
 - b. Tube Well Production Charge: The Tube Well Production Charge (**TP_C**) is for operating, maintaining and producing available ground water from the functional tube wells listed in the PIM provided at Section 6.4 Supplementary Information; and

- c. Distribution Charge: The Distribution Charge (D_C) is for operating and maintaining the existing, rehabilitated and new distribution system and providing water supply services to the customers in accordance to Clause 14 - Performance Standards in Section 6.1 Scope of Services.

5.2. Methodology for assessing the eligible payments for Operation Service.

5.2.1. The payments for Operation Service are paid on a calendar monthly basis and are governed by the following formulae:

- a. Barari Production Charges in a month $BP_n = BV_n \times BP_C$

where

- i. BV_n is the actual cumulative production volume measured in cubic meters in the given month of measurement; during the Development Period this shall be the actual production volume or 9000 cum per month whichever is higher, and
- ii. BP_C is the Barari Production Charge, the rate expressed in Indian Rupees per cubic meter (Rs/Cum) of water produced from BWW offered by the Contractor in its Bid and adjusted by the Price Adjustment as provided further in this Schedule;

- b. Tube Well Production Charges in a month $TP_n = TV_n \times TP_C$

where

- i. TV_n is the actual cumulative production volume from the functional tube wells measured in cubic meters in the given month of measurement; during the Development Period, this shall be the actual volume or 10000 cum per month whichever is higher, and
- ii. TP_C is the Tube Well Production Charge, the rate expressed in Indian Rupees per cubic meter (Rs/Cum) of water produced from functional tube wells offered by the Contractor in its Bid and adjusted by the Price Adjustment as provided further in this Schedule;

- c. Distribution Charges in a month $DC_n = DV_n \times D_c \times R_c/R_b$

where

- i. DV_n is the actual metered and billed volume of water supplied to consumers measured in cubic meters in the given month of measurement; during the Development Period, this shall be the actual distributed volume or 16000cum whichever is higher,
- ii. D_c is the Distribution Charge, the rate expressed in Indian Rupees per cubic meter (Rs/Cum) of water distributed to customers from out of the production from BWW and all the functional tube wells and the proposed new water works and the rate shall be based on the agreed rate offered by the

Contractor in its Bid and adjusted by the Price Adjustment as provided further in this Schedule,

- iii. **Rc** is the amount of revenue collected for the month of measurement excluding the historical arrears of BMC at the Commencement Date, and
- iv. **Rb** is the amount of revenue billed for the month of measurement excluding the historical arrears of BMC at the Commencement Date.

5.3. Adjustment of Operating Payments towards maintenance of Performance Standards during the Development Period

The eligible payments for Operation Service during the Development Period shall be adjusted towards the maintenance of Performance Standards provided in Table 14.1 in Clause 14, Section 6.1 Scope of Services. The procedure for Non-Performance Adjustment shall be as per the formula given below:

Estimated payment during n^{th} month =

$$\mathbf{OPn} = \mathbf{BPn} + \mathbf{TPn} + \mathbf{DCn}$$

Eligible payment for Operation Service during the n^{th} month

$$\mathbf{OPE}_n = [\mathbf{OPn} \times (\mathbf{0.9} + \mathbf{0.05x} (\mathbf{CWn/90\%}) + \mathbf{0.05x} (\mathbf{CSn/60\%}))]$$

where

- i. **CWn** is the percentage of compliance of supply hours maintained in the Service Area in the n^{th} month of measurement in accordance to Table 14.1, Clause 14 Performance Standards in Section 6.1 Scope of Services; and
- ii. **CSn** is the percentage of consumer complaints responded to in the Service Area in the in the n^{th} month of measurement in accordance to Table 14.1, Clause 14 - Performance Standards in Section 6.1 Scope of Services.

5.4. Payment for Operation Service during the remaining Contract term after completion of the Development Period and up to the Contract Completion Date

5.4.1. Commencing from the end of the Development Period of the Contract the payments for Operation Service are subjected to performance adjustment for maintaining the Performance Standards stipulated in Table 14.2 in Clause 14, Section 6.1 Scope of Services, in accordance to the following procedure.

5.4.2. Barari Production Charges: Barari Production Charges payable in any given calendar month shall be adjusted as per the following formula.

$$\text{Eligible Barari Production Charges} = \mathbf{BPn} = \mathbf{BVn} \times \mathbf{BPc}$$

Barari Production Charges Payable =

$$\mathbf{BPn} \times [0.8 + 0.08x(WQn/100\%) + 0.12x(ECb/ECc)]$$

where

- i. **WQn** is the percentage of water quality samples in the n^{th} month of measurement conforming to the Potable Water Specification to be maintained at the outlet of the Barari Water Works;
- ii. **ECn** is the average energy consumption per kilo liter of water produced in the n^{th} month of measurement from Barari Water Works; and
- iii. **ECb** is the average energy consumption per kilo liter of water produced from Barari Water Works measured and benchmarked and agreed as part of the Baseline Report in the Service Improvement Plan.

5.4.3. Tubewell Production Charges:

$$\text{Eligible Tubewell Production Charges} = \mathbf{TPn} = \mathbf{TVn} \times \mathbf{TPc}$$

There shall not be any performance adjustment on the Tubewell Production Charge.

5.4.4. Distribution Charges: Distribution Charges payable in any given calendar month shall be adjusted as per the following formula.

$$\text{Eligible Distribution Charges} = \mathbf{DCn} = \mathbf{DVn} \times \mathbf{Dc} \times \mathbf{Rc/Rb}$$

Distribution Charges Payable =

$$\mathbf{DCn} \times [0.8 + 0.08x(CWn/90\%) + 0.08x(ACn/80\%) + 0.04 \times (CSn/90\%)]$$

where

- i. **DCn** is the Distribution Charge applicable during the n^{th} month under review including the Price Adjustment on the Approved Distribution Charge;
- ii. **CWn** is the percentage of compliance of continuity of water supply maintained in the Service Area in the n^{th} month of measurement in accordance to Clause 14 - Performance Standards in Section 6.1 Scope of Services;

- iii. **AC_n** is the percentage of authorised consumption maintained in the Service Area in the in the n^{th} month of measurement in accordance to Clause 14-Performance Standards in Section 6.1 Scope of Services; and
- iv. **CS_n** is the percentage of consumer complaints redressed in the Service Area in the in the n^{th} month of measurement in accordance to Clause 14 - Performance Standards in Section 6.1 Scope of Services.

6. Price Adjustment of payments for Operation Service:

- 6.1. All payments for Operation Service made during Contract shall be adjusted in accordance to the procedure detailed at Sub-Clause 2.1 in this Schedule and as per the Table A.2, table of adjustments data, provided in Section 4.

Schedule 6: Terms of Reference (ToR) of PMC as Auditing Body

1. Appointment: BUIDCo will appoint an Auditing Body (AB) for the purpose of monitoring and evaluation of the performance of the Contract during the Contract Period. The AB shall play a positive and independent role in discharging its functions, thereby facilitating smooth implementation of the Contract.
2. Obligations: The key obligations of the AB shall be:
 - a) Review the Service Improvement Plan (SIP) furnished by the Contractor and suggest modifications if any required especially with reference to the baseline service levels and investments proposed by the Contractor to achieve the Performance Standards stipulated in Clause 14, Section 6.1 - Scope of Services;
 - b) Monitor the performance of the Contractor and verify the periodical reports furnished by the Contractor in terms of achievement or maintenance of Performance Standards set forth in Section 6.1 – Scope of Services;
 - c) Review the procedures and policies and suggest any modifications or changes required to protect the interest of Consumers, Employers, BUIDCo and BMC;
 - d) Review matters related to safety and environmental management measures adopted by Contractor;
 - e) Provide independent advise to both Parties under this Contract in times of requirement of revision or rebasing of the Performance Standards required due to the following events:
 - i. Substantial change in baseline parameters;
 - ii. Discovery of unknown assets and additional infrastructure which can be put to use resulting in revision of Mandatory Works;
 - iii. Failure of the performance of any of the existing assets other than the new or replaced assets implemented by the Contractor necessitating Major Maintenance by way of replacement;
 - iv. Substantial change in Raw Water Quality in the River Ganga and the tube wells requiring additional processing and treatment requirements; and
 - v. Default of the Employer, BUIDCo or BMC on the Contractor's Notice to Correct.
 - f) Attend project review meetings and provide recommendations on mid-course corrections if any, required for successful implementation of the Project;
 - g) Check, verify and advise the Parties on any Variations proposed by the Contractor from time to time;
 - h) Undertake periodical, at least once in a month, on-site verification of the Services and provide recommendations on any issues which require immediate attention and action from any of the Parties;
 - i) Set out a mechanism and monitor smooth handover of Project Facilities by BMC to the Contractor and hand back of the Project Facilities by the Contractor to BMC.
3. Reports: The AB shall prepare and submit to BUIDCo, monthly reports including the following:

- a) Monthly report on validation of performance of Contractor with reference to the achievement or maintenance of the Performance Standards set forth in Section 6.1 Scope of Services;
 - b) Report on Variations, Force Majeure Events and Disputes if any;
 - c) Report on Notice to Correct issued and compliance of Parties to correct;
 - d) Issues, if any, with regard to operation, maintenance and management along with the details of the action taken for the resolution of the same;
 - e) Photographic records of on-site periodical verification;
 - f) Report on AB's compliance with this Terms of Reference; and
 - g) Any other report as may be reasonably required by BUIDCo or as may be necessary to give effect to the provisions of this Contract.
4. Duration: The appointment of AB shall be initially for 1278 days commencing from the Initial Takeover Date and up to the Schedule Development Completion Date. BUDICo reserves the right to extend the services of the AB for a further period or up to the Contract Completion Date.

Section 9 – Contract Forms

Section 9 - Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

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Performance Security	5
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Draft format for Excise/Custom duty exemption	9

Letter of Acceptance
[on letterhead paper of the Employer]

..... *date*

To: *name and address of the Contractor*

Subject: *Notification of Award Contract No.*

This is to notify you that your Bid dated *date* consisting of the Technical Bid and the Price Bid for execution of the *name of the contract and identification number, as given in the Bid Data Sheet* for the Accepted Contract Amount of the equivalent of *amount in numbers and words and name of currency*, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the Performance Security Form included in Section 9 (Contract Forms) of the Bidding Document.

Authorized Signature:
Name and Title of Signatory:
Name of Agency:

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made theday of,, between *name of the Employer*. (hereinafter “the Employer”), of the one part, and *name of the Contractor*.(hereinafter “the Contractor”), of the other part:

WHEREAS the *Employer* desires that the Works known as *name of the Contract*.should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein, the Employer and the Contractor agree as follows:

1. In this Contract Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Contract Agreement. This Contract Agreement shall prevail over all other Contract documents.

- A. - the Letter of Acceptance;
- B. - the Letter of Price Bid and priced Bill of Quantities;
- C. - the Technical Bid;
- D. - the Addenda Nos *insert addenda numbers if any*.;
- E. - the Particular Conditions of Contract Part B -Specific Provisions;
- F. - the Particular Conditions of Contract Part A – Contract Data;
- G. - the General Conditions;
- H. - the Specifications;
- I. - the Drawings; and
- J. - the Schedules and any other documents forming part of the Contract.

3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of *name of the borrowing country*.on the day, month and year indicated above.

Signed by
for and on behalf of the Employer
in the presence of

Signed by
for and on behalf the Contractor
in the presence of

Witness, Name, Signature,
Address, Date

Witness, Name, Signature,
Address, Date

Performance Security

Bank's Name, and Address of Issuing Branch or Office

Beneficiary: Name and Address of Employer

Date:

Performance Guarantee No.:

We have been informed that **name of the Contractor**. (hereinafter called "the Contractor") has entered into Contract No. **reference number of the Contract**. dated with you, for the execution of **name of contract and brief description of Works**. (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we **name of the Bank**. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of **name of the currency and amount in figures¹**. (**amount in words**.) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the Day of , ², and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458, except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.

.....
Seal of Bank and Signature(s)

- Note -

All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.

¹ The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract and denominated either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Employer.

² Insert the date twenty-eight days after the expected completion date. The Employer should note that in the event of an extension of the Time for Completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: “The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer’s written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.”

Advance Payment Security

Bank's Name, and Address of Issuing Branch or Office

Beneficiary: Name and Address of Employer

Date:

Advance Payment Guarantee No.:

We have been informed that **name of the Contractor**. (hereinafter called "the Contractor") has entered into Contract No. **reference number of the Contract**. dated with you, for the execution of **name of contract and brief description of Works**. (hereinafter called "the Contract"). Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum **name of the currency and amount in figures**¹. (. **amount in words**.) is to be made against an advance payment guarantee.

At the request of the Contractor, we **name of the Bank**. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of **name of the currency and amount in figures**¹. (. **amount in words**.) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on its account number **Contractor's account number**. at **name and address of the Bank**.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Contract Price has been certified for payment, or on the . . day of, . . .², whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date..

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

.....
Seal of Bank and Signature(s)

- Note –

All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.

¹ The Guarantor shall insert an amount representing the amount of the advance payment denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Employer.

² Insert the expected expiration date of the Time for Completion. The Employer should note that in the event of an extension of the Time for Completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: “The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer’s written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

Draft format for Excise/Custom duty exemption

TO WHOMSOEVER IT MAY CONCERN

ESSENTIALITY CERTIFICATE

This is to certify that the work for _____ (Package No. & Name of work) _____ has been awarded to M/s _____ (Name of Contractor) _____ amounting to Rs. _____ (Amount of Contract Agreement) _____ only by the Bihar Urban Infrastructure Development Corporation (BUIDCo) and that this project has duly been approved by Government of India. The Project is funded by Asian Development Bank under loan agreement No.2861-IND between Government of India and Asian Development and being executed by the Urban Development and Housing Department, Government of Bihar.

It is certified that M/S _____ (Name of Contractor) _____ for the above project requires to purchase _____ (Quantity of material and name of material) _____ under work _____ (Package No. & Name of work) _____.

It is further certified that the aforesaid material is required for the execution of the said project.

Chief General manager, BUIDCo

Managing Director, BUIDCo

Countersigned

Secretary, Finance
Government of Bihar