

**Fairway Maintenance on
performance-based dredging in
Farakka – Tribeni (351 km) Stretch
of National Waterway -1 (River Ganga)**



Contract Package no: IN-IWAI-281709 -CW-RFB

May, 2022

Project Management Unit

Capacity Augmentation of the National Waterway – 1 Project (Jal Marg Vikas)

INLAND WATERWAYS AUTHORITY OF INDIA

(Ministry of Ports, Shipping and Waterways, Government of India)

Head Office: A-13, Sector – 1, Noida - 201301

Phone: 0120-2544004, Fax: 0120-2543976; website: www.iwai.nic.in ; email: vc.iwai@nic.in

INLAND WATERWAYS AUTHORITY OF INDIA
(Ministry of Ports, Shipping and Waterways, Government of India)
PROJECT: Capacity Augmentation of National Waterway – 1

NATIONAL COMPETITIVE BIDDING
(Two-Envelope Bidding Process with e-Procurement)

File No: IWAI /WB / NW-1 /14 /2 /2022

Bid no: - IN – IWAI -281709– CW - RFB

NAME OF WORK: ***Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga)***

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| PERIOD OF SALE OF BIDDING DOCUMENT | FROM 11.5.2022 onward |
| TIME AND DATE OF PRE-BID MEETING | DATE 20.5.2022; TIME 15:00 HOURS |
| LAST DATE AND TIME FOR RECEIPT OF BIDS | DATE 10.6.2022; TIME 15:00 HOURS |
| * TIME AND DATE OF OPENING | DATE 10.6.2022; TIME 15:30 HOURS BIDS – Technical Part |
| . The firms that qualify technically shall be notified subsequently for opening of the financial part of their bids. | |
| PLACE OF OPENING OF BIDS | IWAI , A-13 Sector-1, Noida |
| OFFICER INVITING BIDS: - Vice Chairman & Project Director (JMVP) Inland Waterways Authority of India, A – 13, Sector – 1, Noida – 201301, Uttar Pradesh – INDIA Telephone No.: (91) 0120-2424544 Email.: vc.iwai@nic.in ; | |



INVITATIONS FOR BIDS (IFB)
E-Procurement Notice
(Two Envelope Bidding Process with e-Procurement)

NATIONAL COMPETITIVE BIDDING

**Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km)
 Stretch of National Waterway -1 (River Ganga)**

Loan No: 8752 – IN

Bid No.: IN -IWAI-281709/CW-RFB

Date: 10.5.2022

File no :- IWAI/WB / NW-1 /14 /2/ 2022

1. The Government of India has received a loan from the World Bank towards the cost of the Capacity Augmentation of National Waterway – 1, Project and intends to apply a part of the funds to cover eligible payments under the contract¹ for construction of works as detailed below.

**Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km)
 Stretch of National Waterway -1 (River Ganga)**

2. Bidding will be conducted through National Competitive Bidding procedures agreed with the World Bank. Bidding is open to all eligible bidders as defined in the World Bank's Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, January 2011_Revised July 2014.
3. Interested eligible bidders may obtain further information from Inland Waterways Authority of India, Ministry of Shipping, Government of India; Project Director, e-mail vc.iwai@nic.in Bidder may Check other Qualifications Criteria in Section-III Qualification requirements are provided in the bidding document. Additional details are provided in the Bidding Documents.
 1. *Average annual financial turnover during last five years ending 31st March of the previous financial year, should be i.e., INR 43.93 crores (INR Forty three crores & ninety three lacs)*
 2. *Similar Work, Experience of having successfully completed similar works i.e., dredging on rivers or ports or contract management of vessels, manning of vessels or vessel related marine works or similar nature of works during last 7 years ending last day of month previous to the one in which this tender is invited should be either of following*
Three similar works each costing not less than INR 58.70 crores or
Two similar works each costing not less than INR 73.38 crores or
One similar work costing not less than INR 117.41 crores.
 3. *Cash Flow for minimum of (6) six months of operation INR 24.46 crores*
4. complete set of Bidding Documents is freely available on the NIC Portal in English may be downloaded by the interested bidders from NIC- e-procurement portal, free cost. However, to

¹Substitute "contracts" where Bids are invited concurrently for multiple contracts. Add a new para. 5as follows:
 "Bidders may bid for one or several contracts, as further defined in the bidding document. Bidders wishing to offer discounts in case they are awarded more than one contract will be allowed to do so, provided those discounts are included in the Letter of Bid." and renumber paras 5–12.



- participate in the tender, bidder has to pay a non-refundable fee of Rs. 6000/-. The method of payment will be Demand Draft, to be submitted along with the bid.
5. The Inland Waterways Authority of India, Ministry of Shipping, Government of India (Implementing Agency) invites online bids for the construction of works detailed below in the table. The bidders may submit bids for any or all of the works indicated therein. Interested bidders may obtain further information and inspect the bidding documents at the address given below during office hours.
 6. For submission of the bid, the bidder is required to have Digital Signature Certificate (DSC) from one of the Certifying Authorities authorised by Government of India for issuing DSC. Aspiring bidders who have not obtained the user ID and password for participating in e-procurement in this Project, may obtain the same from the website: <https://eprocure.gov.in/cppp/download/disp> A non-refundable fee of Rs. 6000/- (inclusive of tax), is required to be paid. The method of payment will be Demand Draft. Payment documents are to be submitted along with other documents listed in paragraph 9 below before the bid submission deadline.
 7. All Bids must be accompanied by a bid security of the amount specified for the work in the table below, drawn in favour of Inland Waterways Authority of India, Ministry of Shipping, Government of India. Bid security will have to be in any one of the forms as specified in the bidding document and shall have to be valid for 45 days beyond the validity of the bid. Procedure for submission of bid security is described in Para 9.
 8. Bids comprise two Parts, namely the Technical Part and the Financial Part, and both parts must be submitted simultaneously online CPPP Portal online <https://eprocure.gov.in/eprocure/app> (website) **on or before 15.00 hours on 10.06.2022 and the 'Technical Part' of the bids will be publicly opened online on the same day at 15.30 hours**, in the presence of the bidders designated representatives who wish to attend. The "Financial Part" shall remain unopened in the e-procurement system until the second public Bid opening for the financial part. Any bid or modifications to bid (including discount) received outside e-procurement system will not be considered. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened on the next working day at the same time and venue. The electronic bidding system would not allow any late submission of bids.
 9. The bidders are required to submit (a) original payment documents towards the cost of bid document; and registration on e-procurement website (if applicable); (b) original bid security in approved form; and (c) original affidavit regarding correctness of information furnished with bid document with Project Director (JMVP), A-13, Sector-1, NOIDA, Gautam Buddha Nagar – 201301, UP before the bid submission deadline, either by registered post/speed post/courier or by hand, failing which the bids will be declared non-responsive and will not be opened.
 10. **A pre-bid meeting will be held on 20.05.2022** at the office of Inland Waterways Authority of India, NOIDA to clarify the issues and to answer questions on any matter that may be raised at that stage as stated in ITB Clause 7.4 of 'Instructions to Bidders' of the bidding document. Bidders are advised to download the bidding document prior to the pre-bid meeting in order for bidders to have a good understanding of the scope of work under this contract for discussion and clarification at the pre-bid meeting.
 11. Other details can be seen in the bidding documents. The Employer shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt to notify the bidders of any bid updates, the Employer shall not be liable for any information not received by



the bidder. It is the bidders' responsibility to verify the website for the latest information related to this bid.

12. The address for communication is as under:

Vice Chairman & Project Director, Jal Marg Vikas Project

Inland Waterways Authority of India

A-13, Sector-1, Noida, Gautam Buddha Nagar, UP - 201301

+91 120 2424544

Email: vc.iwai@nic.in ; rkant.iwai@nic.in ;

| Package No | Name of Work | Bid Security * Rs. (or equivalent amount in a freely convertible currency) | Cost of Document Rs. (or equivalent amount in a freely convertible currency) | Period of Completion |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------|
| 1 | 2 | 3 | 4 | 5 |
| IN -IWAI- 281709- CW-RFB | Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga) | INR 2,93,53,170.00 | INR 6000/- | 3 years |

Seal of office

Part I – Bidding Procedures

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Part I – Bidding Procedures

Section I. Instructions to Bidders

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Instructions to Bidders

A. General

- | | |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Scope of Bid | 1.1 The Employer, as defined in the Bidding Data Sheet (BDS) , invites bids for the Services, as described in the Appendix A to the Contract. The name and identification number of the Contract is provided in the BDS . |
| | 1.2 The successful Bidder will be expected to complete the performance of the Services by the Intended Completion Date provided in the BDS . |
| 2. Source of Funds | 2.1 The Borrower, as defined in the BDS , intends to apply part of the funds of a loan from the World Bank, as defined in the BDS , towards the cost of the Project, as defined in the BDS , to cover eligible payments under the Contract for the Services. Payments by the World Bank will be made only at the request of the Borrower and upon approval by the World Bank in accordance with the Loan Agreement, and will be subject in all respects to the terms and conditions of that Agreement. Except as the World Bank may specifically otherwise agree, no party other than the Borrower shall derive any rights from the Loan Agreement or have any rights to the loan proceeds. |
| 3. Corrupt or Fraudulent Practices | <p>3.1 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), as well as Bidders, suppliers, and contractors and their sub-contractors under Bank-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. ² In pursuance of this policy, the Bank:</p> <ul style="list-style-type: none"> • defines, for the purposes of this provision, the terms set forth below as follows: <ul style="list-style-type: none"> (i) “corrupt practice”³ is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party; (ii) “fraudulent practice”⁴ is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to |

² In this context, any action taken by a bidder, supplier, contractor, or a sub-contractor to influence the procurement process or contract execution for undue advantage is improper.

³ For the purpose of these SBDs, “another party” refers to a public official acting in relation to the procurement process or contract execution]. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

⁴ For the purpose of these SBDs, “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

obtain a financial or other benefit or to avoid an obligation;

- (iii) “collusive practice”⁵ is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- (iv) “coercive practice”⁶ is 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;
- (v) “obstructive practice” is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or
 - (bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under para. 1.14 (e) of the Bank’s Procurement Guidelines.
- (b) will reject a proposal for award if it determines that the bidder recommended for award, or any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- (c) will declare mis procurement and cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such

⁵ For the purpose of these SBDs, “parties” refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non-competitive levels.

⁶ For the purpose of these SBDs, “party” refers to a participant in the procurement process or contract execution.

practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

- (d) will sanction a firm or individual, at any time, in accordance with the prevailing Bank's sanctions procedures,⁷ including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated⁸;
- (e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and contractors, and their sub-contractors, agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank.

3.2 Furthermore, bidders shall be aware of the provision stated in Sub-Clauses 1.7 (Inspection & audit by the Bank) and 2.6.1 (Termination by the Employer) of the General Conditions of Contract.

4. Eligible Bidders

4.1 A bidder may be a firm that is a private entity, a state-owned enterprises or institutions in the Employer's Country —subject to ITB 4.5—or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority of the Firm/JV to conduct all business for and on behalf of any and all the members of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution. Unless specified in the BDS, there is no limit on the number of members in a JV.

⁷ A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

⁸ A nominated sub-contractor, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

- 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this Bidding process, if the Bidder:
- (a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or
 - (b) receives or has received any direct or indirect subsidy from another Bidder; or
 - (c) has the same legal representative as another Bidder; or
 - (d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the Bid of another Bidder, or influence the decisions of the Employer regarding this Bidding process; or
 - (e) or any of its affiliates participated as a consultant in the preparation of the Employer's Requirements (including Activities Schedules, Performance Specifications and Drawings) for the Non-Consulting Services that are the subject of the Bid; or
 - (f) or any of its affiliates has been hired (or is proposed to be hired) by the Employer or Borrower for the Contract implementation; or
 - (g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS ITB 1.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or
 - (h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the contract, and/or the Bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the procurement process and execution of the Contract.
- 4.3 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.6. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or

association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub-consultants for any part of the Contract including related Services.

- 4.4 A Bidder that has been sanctioned by the Bank in accordance with the above ITB 3.1, including in accordance with the Bank's Guidelines on Preventing and Combating Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants ("Anti-Corruption Guidelines"), shall be ineligible to be prequalified for, bid for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address specified in the BDS.
- 4.5 Bidders that are state-owned enterprises or institutions in the Employer's Country may be eligible to compete and be awarded a Contract(s) only if they can establish, in a manner acceptable to the Bank, that they: (i) are legally and financially autonomous; (ii) operate under commercial law; and (iii) are not under supervision of the Employer
- 4.6 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or (b) 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 any country, person, or entity in that country.
- 4.7 An Bidder shall not be under suspension from bidding by the Employer as the result of the execution of a Bid-Securing Declaration.

5. Qualification of the Bidder

- 5.1 All bidders shall provide in Section IV, Bidding Forms, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
- 5.2 Deleted.

5.2.1 Bidder shall furnish the following along with his bid:

(a) *Dredging Management Plan – Methodology*

*Detailed methodology to indicate how various activities will be carried out to achieve the performance parameters laid down in Appendix A to the contract – **Description of the Services.***

- *Detailed Dredger deployment plan with respect to (a) above Dredging Management Plan – Methodology (including disposal of dredged material)*

alongwith No. of dredgers to be deployed at various point of time alongwith dredging capacities and manpower.

and frequency of bathymetric survey alongwith details of equipment and manpower to be deployed by him to meet the LAD requirements in the concerned stretch.

- (c) *List of major items of equipment proposed to carry out the contracted services using the format provided in Section IV - Bidding Forms*

- (d) *To establish its qualifications to perform the contract(s) in accordance with Section III, Qualification Criteria and Requirements, the Bidder shall provide the information requested in the corresponding Information Sheets included in Section IV, Bidding Forms.*

- (e) *Bidder to indicate whether they are presenting*

Single Entity Bid or

Joint Venture Bid

In the event of Joint Venture Bid or sub-contracting details of the Joint Venture Partner or the sub-contractor likely to be engaged to be identified & proposed in the Bid along with their credentials like (Experience, Financials & Profile) – Such

Joint Venture Partner or the Subcontractor can be engaged only upon meeting the prescribed Qualifying requirements and or after approval & Permission of the Owner

- (f) *Wherever a Bidding Form requires the Bidder to state a monetary amount, Bidders should indicate the USD equivalent using the rate of exchange determined as follows:*

For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.

Value of single contract - Exchange rate prevailing on the date of the contract.

Exchange rates shall be taken from the publicly available source as. Source of exchange rate: BC Selling exchange rates of RBI (Reserve Bank of India) or State Bank of India, Main Branch, New Delhi

Date: as prevailing on the last date of bid submission
Any error in determining the exchange rates in the Bidding may be corrected by the Employer.

Currency chosen for the purpose of conversion to a common currency:
INR

5.3 If the Employer has not undertaken prequalification of potential bidders, all bidders shall include the following information and documents with their bids in Section IV, unless otherwise **stated in the BDS**:

- (a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the Bid to commit the bidder;
- (b) total monetary value of Services performed for each of the last five years;
- (c) experience in Services of a similar nature and size for each of the last five years, and details of Services under way or contractually committed; and names and address of clients who may be contacted for further information on those contracts;
- (d) list of major items of equipment proposed to carry out the Contract;
- (e) qualifications and experience of key site management and technical personnel proposed for the Contract;
- (f) reports on the financial standing of the bidder, such as profit and loss statements and auditor's reports for the past five years;
- (g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);
- (h) authority to the Employer to seek references from the bidder's bankers;
- (i) information regarding any litigation, current or during the last five years, in which the bidder is involved, the parties concerned, and disputed amount; and

- (j) proposals for subcontracting components of the Services amounting to more than 10 percent of the Contract Price.
- 5.4 Bids submitted by a joint venture of two or more firms as partners shall comply with the following requirements, unless otherwise stated in the **BDS**:
- (a) the Bid shall include all the information listed in ITB Sub-Clause 5.3 above for each joint venture partner;
 - (b) the Bid shall be signed so as to be legally binding on all partners;
 - (c) the Bid shall include a copy of the agreement entered into by the joint venture partners defining the division of assignments to each partner and establishing that all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms; 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;
 - (d) one of the partners shall be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all partners of the joint venture; and
 - (e) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.
- 5.5 To qualify for award of the Contract, bidder shall meet the following minimum qualifying criteria:
- (a) annual volume of Services of at least the amount **specified in the BDS**;
 - (b) experience as prime Contractor in the provision of at least two service contracts of a nature and complexity equivalent to the Services over the last 5 years (to comply with this requirement, Services contracts cited should be at least 70 percent complete) **as specified in the BDS**;
 - (c) proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment **listed in the BDS**;
 - (d) a Project Manager with a bachelor's degree in civil engineering and an experience of minimum 10 years, out of which at least 7 years shall be in managing projects of similar nature. Personnel must have experience in executing dredging projects. The age of the personnel as

on the date of bid submission shall not be more than 50 years; and

- (e) liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than the amount specified in the **BDS**.

A consistent history of litigation or arbitration awards against the Bidder or any partner of a Joint Venture shall result in disqualification.

- 5.6 The figures for each of the partners of a joint venture shall be added together to determine the bidder's compliance with the minimum qualifying criteria of ITB Sub-Clause 5.5(a), (b) and (e); however, for a joint venture to qualify the partner in charge must meet at least 40 percent of those minimum criteria for an individual bidder and other partners at least 25% of the criteria. Failure to comply with this requirement will result in rejection of the joint venture's Bid. Sub-Contractors' experience and resources will not be taken into account in determining the bidder's compliance with the qualifying criteria, unless otherwise **stated in the BDS**.

- 5.6.1 Unless otherwise stated in the BDS, the Employer does not intend to execute any specific elements of the Works by sub-contractors selected in advance by the Employer.

- 5.6.2 The Employer may decide to permit subcontracting for certain specialized works as indicated in Section III 4.2, Experience. The Employer may do so at its own initiative or at the request of the Bidders during the prequalification process (if justified). When subcontracting is permitted by the Employer, the specialized sub-contractors experience shall be considered for evaluation. Section III describes the qualification criteria for sub-contractors.

- 5.6.3 Bidders may propose subcontracting to the percentage of the total value of the contract or the volume of works mentioned in the BDS.

6. One Bid per Bidder

- 6.1 Each Bidder shall submit only one Bid, either individually or as a partner in a joint venture. A Bidder who submits or participates in more than one Bid (other than as a sub-contractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

7. Cost of Bidding

- 7.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible or liable for those costs.



8. Site Visit

- 8.1 The Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site of required Services and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for the Services. The costs of visiting the Site shall be at the Bidder's own expense.

B. Bidding Documents

9. Content of Bidding Documents

- 9.1 The set of bidding documents comprises the documents listed in the table below and addenda issued in accordance with ITB Clause 11:

| | |
|--------------|---------------------------------------------------------|
| Section I | Instructions to Bidders |
| Section II | Bidding Data Sheet |
| Section III | Qualification Criteria and Requirements |
| Section IV | Bidding Forms |
| Section V | Eligible Countries |
| Section VI | Activity Schedule |
| Section VII | General Conditions of Contract |
| Section VIII | Special Conditions of Contract |
| Section IX | Performance Specifications and Drawings (if Applicable) |
| Section X | Contract Forms |

- 9.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or to submit a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in the rejection of its bid. Sections IV, VI, and X should be completed and returned with the Bid in the number of copies specified in the **BDS**.

10. Clarification of Bidding Documents & Pre-Bid Meeting

- 10.1 A Bidder requiring any clarification of the bidding documents shall notify the Employer through the e-procurement portal specified in the BDS or raise its enquiries during the pre-bid meeting if provided for in accordance with ITB 10.2.

The Employer's response to the clarification, including a description of the inquiry but without identifying its source will be made available through the e-procurement portal provided that such request is uploaded no later than fourteen (14) days prior to the deadline for submission of bids. Should the clarification result in changes to the essential elements of the Bidding Documents, the Employer shall amend the Bidding Documents in the e-procurement portal following the procedure under ITB 11.

- 10.2 If so **specified in the BDS**, the Bidder's designated representative is invited to attend a pre-bid meeting. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage. The Bidder is requested to submit any queries / Clarifications questions in one LOT through e-mail or maximum on the date of Pre-Bid Meeting, e-procurement portal, not later than one week before the meeting.

Subsequent to Pre-bid meeting, no further Queries shall be entertained.

- 10.3 Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by Bidders, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be posted in the e-procurement portal. Any modification to the Bidding Documents 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 in the e-procurement portal pursuant to ITB 11 and not through the minutes of the pre-bid meeting. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

It is the bidder's responsibility to check the e-procurement portal from time to time for any addendum or corrigendum to the bidding documents. The Employer will not issue any notifications separately to the bidders.

11. Amendment of Bidding Documents

- 11.1 At any time prior to the deadline for submission of bids, the Employer may amend the bidding documents by issuing addenda, which will be uploaded on the e-Procurement Portal.
- 11.2 Any addendum thus issued shall be part of the bidding documents and it will be binding on all Bidders. It is the Bidder's responsibility to check the e-procurement portal for any update.
- 11.3 To give bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer shall extend, as necessary, the deadline for submission of bids, in accordance with ITB Sub-Clause 21.2 below. For this purpose, addendum/notification of extension of deadline for bid submission will be uploaded on the e-Procurement Portal and shall be available online.

C. Preparation of Bids

12. Language of Bid

- 12.1 The bid prepared by the Bidder, 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 furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages

in the language specified in the Bidding Data Sheet, in which case, for purposes of interpretation of the Bid, the translation shall govern.

13. Documents Comprising the Bid

13.1 The Bid submitted by the Bidder shall comprise the following:

(a) Bidder's Bid Form (in the format provided in Section IV);

A. Scanned copy of Bid Security, in accordance with ITB 17;

B. Priced Activity Schedule ;(Section – VI – Part-II)

(d) Affidavit affirming correctness of information, documents and certificates submitted with the bid as per Format in Section IV – Bidding Forms;

(e) Alternative offers where invited;

And any other materials required to be completed and submitted by Bidder, as **specified in the BDS**.

(f) Update of the qualification information submitted with the said Bidding ”

(g): JV documents listed in ITB 5.4”

13.2 Bidders bidding for this contract together with other contracts stated in the ITB to form a package will so indicate in the bid together with any discounts offered for the award of more than one contract.

14. Bid Prices

14.1 The Contract shall be for the Services, as described in

1. Appendix A to the contract and in the Specifications,
2. Section IX, based on the priced Activity Schedule,
3. Section VI, submitted by the Bidder.

14.2 The Bidder shall fill in rates and prices for all items of the Services described in the Specifications in Section IX and listed in the Activity Schedule, Section VI. Items for 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 other rates and prices in the Activity Schedule.

14.3 All duties, taxes, and other levies payable by the Service Provider 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 total Bid price submitted by the Bidder.

14.4 If **provided for in the BDS**, the rates and prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract in accordance with and the provisions of Clause 6.6 of the General Conditions of Contract and/or Special Conditions of Contract. The Bidder shall submit with the Bid all the

information required under the Special Conditions of Contract and of the General Conditions of Contract.

- 14.5 For the purpose of determining the remuneration due for additional Services, a breakdown of the lump-sum price shall be provided by the Bidder in the form of Appendices D and E to the Contract

15. Currencies of Bid and Payment

- 15.1 The lump sum price shall be quoted by the Bidder separately in the following currencies:
- (a) for those inputs to the Services which the Bidder expects to provide from within the Employer's country, the prices shall be quoted in the currency of the Employer's country, unless otherwise **specified in the BDS**; and
 - (b) for those inputs to the Services which the Bidder expects to provide from outside the Employer's country, the prices shall be quoted in up to any three currencies of any member country of the Bank.
- 15.2 Bidder shall indicate details of their expected foreign currency requirements in the Bid.
- 15.3 Bidder may be required by the Employer to justify their foreign currency requirements and to substantiate that the amounts included in the Lump Sum are reasonable and responsive to ITB Sub-Clause 15.1.

16. Bid Validity

- 16.1 Bids shall remain valid for the period **specified in the BDS**.
- 16.2 In exceptional circumstances, the Employer may request that the Bidder extend the period of validity for a specified additional period. The request and the Bidder's responses shall be made in writing or by cable. A Bidder may refuse the request without forfeiting the Bid Security. A Service Provider agreeing to the request will not be required or permitted to otherwise modify the Bid, but will be required to extend the validity of Bid Security for the period of the extension, and in compliance with ITB Clause 17 in all respects.
- 16.3 In the case of contracts in which the Contract Price is fixed (not subject to price adjustment), if the period of bid validity is extended by more than 60 days, the amounts payable in local and foreign currency to the Bidder selected for award, shall be increased by applying to both the local and the foreign currency component of the payments, respectively, the factors specified in the request for extension, for the period of delay beyond 60 days after the expiry of the initial bid validity, up to the notification of award. In the case of adjustable price contracts, no adjustment shall be made. In any case, bid evaluation will be

based on the Bid prices without taking the above correction into consideration.

17. Bid Security

- 17.1 The Bidder shall furnish, as part of the Bid, a scanned copy of the Bid Security or a Bid-Securing Declaration, if required, as **specified in the BDS**. The original Bid Security shall be submitted along with other specified originals in accordance with the procedure specified in **ITB 20.3 and BDS 20.3**.
- 17.2 The Bid Security shall be in the amount **specified in the BDS** and denominated in the currency of the Employer's Country or a freely convertible currency, and shall:
- (a) at the bidder's option, be in the form of either a letter of credit, or a bank guarantee from a banking institution, or a bond issued by a surety;
 - (b) be issued by a reputable institution selected by the bidder and located in any eligible country. If the institution issuing the bond is located outside the Employer's Country, it shall have a correspondent financial institution located in the Employer's Country to make it enforceable.
 - (c) be substantially in accordance with the form of Bid Security included in Section IV - Bidding Forms, or other form approved by the Employer prior to bid submission;
 - (d) be payable promptly upon written demand by the Employer in case the conditions listed in ITB Sub-Clause 17.5 are invoked;
 - (e) be submitted in its original form; copies will not be accepted;
 - (f) remain valid for a period of 45 days beyond the validity period of the bids, or beyond any period of extension if requested under ITB Sub-Clause 16.2;
- 17.3 If a Bid Security or a Bid- Securing Declaration is required in accordance with ITB Sub-Clause 17.1, any bid not accompanied by a substantially responsive Bid Security or Bid Securing Declaration in accordance with ITB Sub-Clause 17.1, shall be rejected by the Employer as non-responsive.
- 17.4 The Bid Security of unsuccessful Bidder shall be returned as promptly as possible upon the successful Bidder's furnishing of the Performance Security pursuant to ITB Clause 35.
- 17.5 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 Bid Submission Form, except as provided in ITB Sub-Clause 16.2; or
- (b) if the successful Bidder fails to:

1. **sign the Contract in accordance with ITB Clause 34;**
2. **furnish a Performance Security in accordance with ITB Clause 35.**

17.6 The Bid Security or Bid- Securing Declaration of a JV must 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 to constitute the JV.

18. Alternative Proposals by Bidders

18.1 Unless otherwise indicated in the BDS, **alternative bids shall not be considered.**

18.2 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.

18.3 Except as provided under ITB Sub-Clause 18.4 below, bidder wishing to offer technical alternatives to the requirements of the bidding documents must first submit a Bid that complies with the requirements of the bidding documents, including the scope, basic technical data, graphical documents and specifications. In addition to submitting the basic Bid, the Bidder shall provide all information necessary for a complete evaluation of the alternative by the Employer, including calculations, technical specifications, breakdown of prices, proposed work methods 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. Alternatives to the specified performance levels shall not be accepted.

18.4 When Service Provider are **permitted in the BDS** to submit alternative technical solutions for specified parts of the Services, such parts shall be described in the Specifications (or Terms of Reference) and Drawings, Section IX. In such case, the method for evaluating such alternatives will be as **indicated in the BDS**.

19. Format and Signing of Bid & Power of Attorney

19.1 The Bidder shall prepare the documents comprising the bid as described in ITB 13 and upload them in the e-procurement portal as specified in ITB 20.

Alternative bids, if permitted in accordance with ITB 18, shall be clearly marked “ALTERNATIVE.”

In addition, the Bidder shall produce originals of the Bid Security, Power of Attorney and Affidavit referred to in ITB 13.1 (d), in the manner specified in ITB 20.3. In the event of any

discrepancy between the original and the uploaded documents, the original shall prevail.

19.2 The bid shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation and shall be uploaded along with the bid. The name and position held by each person signing the authorization must be typed or printed below the signature.

19.3 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

D. Electronic Submission of Bids

20. Electronic Submission of Bids

20.1 The Bidder shall submit their bid electronically, including alternative bids, if permitted in accordance with ITB 18, through the e-procurement portal following the system described in the BDS.

20.1.1 Bids are invited on Single Stage Two Envelope basis

e-bid Technical Envelope-I

1. Bid Security, POA, Affidavit, etc
2. Qualification Requirements
3. Technical Proposal, viz,
 - i. Dredging Management Plan
 - ii. Dredger Deployment Plan
 - iii. List of Other Equipments , & other details sought

e-bid Financial Envelope-II Price Proposal

20.1.2 All the documents are required to be signed digitally by the bidder. Any document submitted through any other means will not be considered as part of the Bid except for the Originals specified in ITB 20.3. However bids shall be submitted along with documents listed at ITB13.viz,

- (a) *Bidder's Bid Form (in the format provided in Section IV);*
- C. *Scanned copy of Bid Security, in accordance with ITB 17;*
- D. *Priced Activity Schedule; Section VI. Part-II*
- (d) *Affidavit affirming correctness of information, documents and certificates submitted with the bid as per Format in Section IV – Bidding Forms;*
- (e) *Alternative offers { if invited };*
and any other materials required to be completed and submitted by Bidder, as specified in the BDS.

20.2 The bid submitted by the bidder online at e-Procurement Portal shall comprise the following:

1. ***Scanned copy of filled in and signed Bid Form***

2. ***Priced Activity Schedules***

- to be filled in online and digitally signed

Bidder shall also upload scanned copies of following documents along with the above mentioned two documents.

3. Detailed Methodology of Dredging Management Plan in accordance with ITB 5.2.1 (a), read with BDS 5.2
4. Detailed Dredger Deployment plan with respect to the Methodology of Dredging Management Plan in accordance with ITB 5.2.1 (b), read with BDS 5.2
5. List of major items of equipment proposed to carry out contracted services in accordance with ITB 5.2.1 (c') read with BDS 5.2
6. Summary Sheet towards establish of Qualification Criteria and the requirements in accordance with ITB 5.2.1 (d) read with BDS 5.2
7. Confirmation to the type of Bid Submitted "Single or JV" along with Sub-contracting in accordance with ITB 5.2.1 (e) read with BDS 5.2
8. Bid Security in the acceptable form for the specified amount and validity in accordance with ITB 17.2.
9. Power of Attorney of signatory of the Bid/documents submitted with the Bid in accordance with ITB 19.2 & 19.3.
10. An Affidavit, as per ITB 13.1 (d) affirming that information, documents and certificates furnished with the bid are correct to the best of knowledge and belief of the bidder;
11. Break-down of the lump-sum prices quoted in the Priced Activity Schedule, in the form of Appendices D and E to the Contract in accordance with ITB 14.5;
12. Authorized address and contact details of the bidder having the following information:
 13. Name of Firm
 14. Address for communication
 15. Telephone Number: Office
 16. Mobile Number
 17. Facsimile (FAX) No.
 18. Electronic Mail Identification (E-mail ID)
19. Any other information/documents required to be completed and submitted by the bidder, as specified in ITB section.

20.3 Submission of Original Documents

Bidders are also required to ensure that following documents in original are submitted in the manner specified here under:

- **Original Bid Security** for the amount specified in ITB 17.2 / BDS 17.2 in the specified format,
- **Original Power of Attorney of the signatory of the Bid** and documents submitted with the bid and also the Power of Attorney in favour of the partner-in-charge in case of a JV in accordance with ITB 19.2 & 19.3 (as applicable)
- **Original Affidavit** in accordance with ITB 13.1(d)
- **Affirming correctness of the information**, documents and certificates furnished with the bid are received in the Employer's Office as specified in the **Bid Data Sheet**, on or before the date and time of opening of Bids, either by registered post or by hand, failing which the bids shall be declared non-responsive. In this regard, bidders shall comply with the following:

1. The above documents should be submitted in one envelope & addressed to the employer in accordance with BDS 20.3

20.4 Employer (or the IT Service Provider entrusted with the responsibilities in respect of e-Procurement Portal) is not responsible for any failure such as a bad internet connection or power failure outside of their control. The bidder is responsible to ensure that it has sufficient time to submit an electronic bid prior to the deadline for bid submission. In case of any fault/failure in the e-Procurement Portal system occurring around the closing time for bid submission that may affect the bidding process, the Employer may at its sole discretion extend the deadline for bid submission for at least 24 hours from the time system is restored fully to allow bidders sufficient time to submit their bids.

21. Deadline for Submission of Bids

- 21.1 Bids shall be submitted in the e-procurement system no later than the time and date **specified in the BDS**.
- 21.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with ITB Clause 11, in which case all rights and obligations of the Employer and the bidder previously subject to the original deadline will then be subject to the new deadline.

22. Late Bids

- 22.1 The e-Procurement system would not allow any late submission of bids after due date & time as per server system.



23. Modification and Withdrawal of Bids

23.1 A Bidder may modify its bid submitted online, before the deadline for submission of bids. For bid modification and consequent re-submission, the Bidder is not required to withdraw its bid submitted earlier. Modification and consequent re-submission of bids is allowed any number of times. The last modified bid submitted by the Bidder within the bid submission time shall be considered as the bid. For this purpose, modification/withdrawal by other means will not be accepted. The Bidder may withdraw its bid by uploading its request before the deadline for submission of bids.

However, if the bid is withdrawn, re-submission of the bid is not allowed.

23.2 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 Bid Form or any extension thereof.

E. Bid Opening and Evaluation

24. Bid Opening

24.1 The Employer shall open the bids online that were submitted prior to the Submission Deadline at the date, time and place **specified in the BDS**, in the presence of Bidders' designated representatives and anyone who choose to attend the opening. Bidders, who do not attend the bid opening, can view the bid opening by logging on to the e-procurement system.

i. Technical Proposals - Envelope-I,

e-Bids are invited on Single Stage Two Envelope System.

Therefore on the scheduled date of Bid opening, only Technical Proposals, Bid Security & QR documents contained in Envelope-I shall be opened.

1. Bid Security, POA, Affidavit, etc
2. Qualification Requirements
3. Technical Proposal, viz,
- iv. Dredging Management Plan
- v. Dredger Deployment Plan
- vi. List of Other Equipments ,
- vii. & other details sought

B. Price Proposal - Envelope-II

shall be opened on later date for only those Bidders, who has fulfilled the requirements the Technical requirements for the assignment and are meeting the Qualifying Requirements.

24.2 The withdrawn bid will not be available in the system therefore will not be read. Only the last modified bid shall be available in the system which shall be opened and read along with other bids. Only bids that are opened and read out at bid opening shall be considered further.

- 24.3 All other bids shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Price, per lot (contract) if applicable, including any discounts and alternative bids; the presence or absence of a bid security, if required; and any other details as the Employer may consider appropriate. Only discounts and alternative bids read out at bid opening shall be considered for evaluation. The Employer shall neither discuss the merits of any bid nor reject any bid.
- 24.4 The Employer shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot (contract) if applicable, including any discounts and alternative bids; and the presence or absence of a bid security, its amount and validity. The Bidders' representatives who are present in the office of the Employer to witness the bid opening 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. Employer shall upload minutes of Bid opening on the e-procurement Portal immediately after the Bid opening has been completed.
- 25. Process to Be Confidential**
- 25.1 Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder is notified. Any effort by a Bidder to influence the Employer's processing of bids or award decisions may result in the rejection of his Bid.
- 25.2 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation or contract award decisions may result in the rejection of the Bidder's bid.
- 26. Clarification of Bids**
- 26.1 To assist in the examination, evaluation, and comparison of bids, the Employer may, at the Employer's discretion, ask any Bidder for clarification of the Bidder's Bid, including breakdowns of the prices in the Activity Schedule, and other information that the Employer may require. The request for clarification and the response shall be in writing or by cable, telex, or facsimile, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with ITB Clause 28.
- 26.2 Subject to ITB Sub-Clause 26.1, no Bidder shall contact the Employer on any matter relating to its bid from the time of the bid opening to the time the contract is awarded. If the Bidder

wishes to bring additional information to the notice of the Employer, he should do so in writing.

- 26.3 If a Service Provider 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.
- 27. Examination of Bids and Determination of Responsiveness**
- 27.1 Prior to the detailed evaluation of bids, the Employer will determine whether each Bid (a) meets the eligibility criteria defined in ITB Clause 4; (b) has been properly signed; (c) is accompanied by the required securities; and (d) is substantially responsive to the requirements of the bidding documents.
- 27.2 A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one
- (a) which affects in any substantial way the scope, quality, or performance of the Services;
 - (b) which limits in any substantial way, inconsistent with the bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or
 - (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive bids.
 - (d) *Bid has to be Technically responsive and should meet the Qualifying Requirement & Eligibility Criteria.*
- 27.3 If a Bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.
- 28. Correction of Errors**
- 28.1 The electronic system of online bid submission automatically calculates the total amount from the unit rates and the quantities and the system also automatically inserts the amount in words from the amount in figures.
- The Exchange Rate for the purpose of Conversion by the system shall be automatically the Date of Closing of Bid (and to be entered by Bid Opening Committee)***
- Hence it is expected that there will be no room for discrepancy. However, if there is a
- i. 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,

- ii. 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.
- iii. Further, if there is an error in a total corresponding to the addition of subtotals, the subtotals shall prevail and the total shall be corrected.
- 28.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder.
If the Bidder does not accept the corrected amount, the Bid will be rejected and the EMD forfeited.
- 29. Currency for Bid Evaluation**
- 29.1 The Employer will convert the amounts in various currencies in which the Bid Price, corrected pursuant to ITB Clause 28, is payable (excluding Provisional Sums but including Day work where priced competitively) to either:
- (a) the currency of the Employer's country at the selling rates established for similar transactions by the authority specified in the BDS on the date stipulated in the BDS;
- Rate of Conversion shall be the Last Date of Closing of the Bid.** or
- (b) a currency widely used in international trade, such as the U.S. dollar, stipulated in the BDS, at the selling rate of exchange published in the international press as stipulated in the BDS.
- 30. Evaluation and Comparison of Bids**
- 30.1 The Employer will evaluate and compare only the bids determined to be substantially responsive in accordance with ITB Clause 27.
- 30.2 The Employer shall use the factors, methods, criteria, and requirements defined in Section III, Qualification Criteria and Requirements, to evaluate the qualifications of the Bidders, and no other methods, criteria, or requirements shall be used.
- 30.3 ***SUB CONTRACTING***
Bidders planning to subcontract more than **25% (Twenty Five)** of total volume of work shall specify, in the Bid Submission Form, the activity (ies) or parts of the works to be subcontracted along with complete details of the sub-contractors and their qualification and experience.
- The sub-contractors proposed shall be fully qualified for their work proposed, and meet the specified criteria in Section III, failing which such sub-contractors will not be permitted to participate.

The qualification and experience of sub-contractors proposed by the Bidder will not be considered for overall evaluation of the Bidder, but shall fulfil the individual criteria. However the deployment of Subcontractor shall be with the written permission of the employer.

The Bidder on its own (without taking into account the qualification and experience of the sub-contractor) should meet the prequalification criteria.

30.4. In case a contractor while working on an IWAI contract, applies for another similar contract to be executed by IWAI, then to check whether the contractor meets the qualification criteria for the new contract, IWAI will calculate the bid capacity of the bidder as per the formula mentioned below:

Bid Capacity: $[(2 \times A \times N) - B]$

Where

A= Maximum value of the works executed in any one year during the last five years

B= Value at current price level of the existing commitments and ongoing works to be completed concurrently with the works specified up to the period 'N' below

N=3 (No. of years prescribed for completion of works for which the tender is invited.

The bid capacity thus arrived at must be greater than the contract value of tender(s) under consideration.

30.5 Only the qualifications of the Bidder shall be considered. In particular, the qualifications of a parent or other affiliated company that is not party to the Bidder under a JV in accordance with ITB 4.1 (or participating as a sub-contractor as per ITB 5.6) shall not be considered.

30.6 In evaluating the bids, the Employer will determine for each Bid the evaluated Bid price by adjusting the Bid price as follows:

- (a) making any correction for errors pursuant to ITB Clause 28;
- (b) excluding provisional sums and the provision, if any, for contingencies in the Activity Schedule, Section VI, but including Day work, when requested in the Performance Specifications Section IX; and (Terms of Reference / Description of Services at Appendix A)
- (c) making an appropriate adjustment for any other acceptable variations, deviations, or alternative offers submitted in accordance with ITB Clause 18; and

- (d) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with ITB Clause 23
- (e) determining aggregate of the Net Present Value (NPV) of five years' prices for Services quoted in the Priced Activity Schedule, by discounting these prices to the Date of Commencement of Services, *assuming only for purpose of the evaluation* that the prices are payable at the end of the respective years. For the purpose of determining NPV, discount factor of 10 % per annum shall be applied.

30.7 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors, which are in excess of the requirements of the bidding documents or otherwise result in unsolicited benefits for the Employer will not be taken into account in Bid evaluation.

30.8 The estimated effect of any price adjustment conditions under Sub-Clause 6.6 of the General Conditions of Contract, during the period of implementation of the Contract, will not be taken into account in Bid evaluation.

31. Preference for Domestic Service Provider

31.1 Domestic bidder shall not be eligible for any margin of preference in Bid evaluation.

F. Award of Contract

32. Award Criteria

32.1 Subject to ITB Clause 33, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid price, provided that such Bidder has been determined to be (a) eligible in accordance with the provisions of ITB Clause 4, and (b) qualified in accordance with the provisions of ITB Clause 5.

32.2 If, pursuant to ITB Sub-Clause 13.2 this contract is being let on a "slice and package" basis, the lowest evaluated Bid Price will be determined when evaluating this contract in conjunction with other contracts to be awarded concurrently. Taking into account any discounts offered by the Bidder for the award of more than one contract.

33. Employer's Right to Accept any Bid and to Reject any or all Bids

33.1 Notwithstanding ITB Clause 32, the Employer reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Employer's action.



34. Notification of Award and Signing of Agreement

- 34.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex, or facsimile confirmed by registered letter from the Employer. This letter (hereinafter and in the Conditions of Contract called the “Letter of Acceptance”) will state the sum that the Employer will pay the Service provider in consideration of the execution, completion, and maintenance of the Services by the Service provider as prescribed by the Contract (hereinafter and in the Contract called the “Contract Price”).
- 34.2 The notification of award will constitute the formation of the Contract.
- 34.3 The Contract, in the form provided in the bidding documents, will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and sent to the successful Bidder with the Letter of Acceptance. Within 21 days of receipt of the Contract, the successful Bidder shall sign the Contract and return it to the Employer, together with the required performance security pursuant to Clause 35.
- 34.4 Upon fulfilment of ITB Sub-Clause 34.3, the Employer will promptly notify the unsuccessful Bidders of the results of the bidding on the Employer’s website and on e-procurement Portal and shall publish in the UNDB *online* the results identifying the bid package and the following information:
- (i) name of each Bidder who submitted the 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 successful Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded.
- 34.5 If, after notification of award, a Bidder wishes to ascertain the grounds on which its bid was not selected, it should address its request to the Employer. The Employer will promptly respond in writing to the unsuccessful Bidder. Any request for explanation from one Bidder should relate only to its own bid; information about the bid of competitors will not be addressed.

35. Performance Security

- 35.1 Within 21 days after receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in the amount and in the form (Bank Guarantee and/or Performance Bond) **stipulated in the BDS**, denominated in the type and proportions of currencies in the Letter of Acceptance and in accordance with the General Conditions of Contract.

- 35.2 If the Performance Security is provided by the successful Bidder in the form of a Bank Guarantee, it shall be issued either
- (a) At the Bidder's option, by a bank located in the country of the Employer or a foreign bank through a correspondent bank located in the country of the Employer, or
 - (b) With the agreement of the Employer directly by a foreign bank acceptable to the Employer.
- 35.3 If the Performance Security is to be provided by the successful Bidder in the form of a Bond, it shall be issued by a surety which the Bidder has determined to be acceptable to the Employer.
- 35.4 Failure of the successful Bidder to comply with the requirements of ITB Sub-Clause 35.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.
- In that Event the Employer may re-tender the contract.
- 36. Advance Payment and Security**
- 36.1 The Employer will provide an Advance Payment on the Contract Price as stipulated in the Conditions of Contract, subject to the amount **stated in the BDS**.
- 37. Adjudicator**
- 37.1 The Employer proposes the person **named in the BDS** to be appointed as Adjudicator under the Contract, at daily basis fee **specified in the BDS**, plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should so state in the Bid. If, in the Letter of Acceptance, the Employer has not agreed on the appointment of the Adjudicator, the Adjudicator shall be appointed by the Appointing Authority designated in the Special Conditions of Contract at the request of either party.
- 38. Extension of Contract**
- 38.1 The employer reserves the right to extend the period of the Contract on the terms of the Original Contract for further two years based on the performance of the service provider and subject to the approval of the World Bank.

Section II. Bidding Data Sheet

| A. General | |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ITB Clause | Bidding Data Sheet provision |
| 1.1 | <p>The Employer is</p> <p><i>Vice Chairman & Project Director, Inland Waterways Authority of India, Ministry of Shipping, Government of India</i></p> <p>The name and identification number of the Contract is</p> <p>Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga)</p> |
| | <p>The identification number of the Contract is <i>IN-IWAI -281709-CW-RFB</i></p> <p>The number and identification of lots comprising this bidding process is:</p> <p>The Service is not divided into lots.</p> |
| 1.2 | The Intended Completion Date is 3 years from the Date of Commencement of Service. and extendable by another 2 years. |
| 2.1 | <p>The Borrower is <i>Government of India</i></p> <p>The Project is <i>Capacity Augmentation of National Waterways – 1</i></p> <p>The loan/credit No: - 8752-IN</p> |
| ITB 4.1 | JV Partners are allowed to maximum number of three (3) |
| ITB 4.4 | A list of debarred firms and individuals is available on the Bank's external website: http://www.worldbank.org/debarr . |
| 5.6.3 | <p>Maximum percentage of subcontracting permitted is 25% of the total value of the contract.</p> <p>Bidders planning to subcontract more than 25% of total volume of works shall specify, in the Bid Submission Form, the activity (ies) or parts of the works to be subcontracted along with complete details of the sub-contractors and their qualification and experience.</p> <p>The qualification and experience of the sub-contractors must meet the minimum criteria for the relevant works to be sub-contracted failing which such sub-contractors will not be permitted to participate.</p> <p>Sub-contractors' qualification and experience will not be considered for evaluation of the Bidder.</p> <p>The Bidder on its own (without taking into account the qualification and experience of the sub-contractor) should meet the prequalification criteria.</p> |

| B. Bidding Documents | |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1 | The e-procurement portal for this bid is: https://eprocure.gov.in/eprocure/app The prospective Bidder can seek clarifications only through the e-procurement portal mentioned above. Clarifications sought through any other mode shall not be entertained. |
| 10.2 | A Pre-Bid meeting will take place at the following date, time and place: Date: 20.05.2022 Time: 15.00 hours Place: Inland Waterways Authority of India, A-13, Sector-1, Noida - 201301, Uttar Pradesh, India. |
| C. Preparation of Bids | |
| 12.1 | Language of the bid: <i>English</i> All correspondence exchange shall be in English language. Language for translation of supporting documents and printed literature is English . |
| 14.3 | All duties, taxes and other levies payable by the Service Provider shall be included in the bid prices excluding GST. |
| 14.4 | The Contract <i>is</i> subject to price adjustment in accordance with SCC Clause 6.6.1 |
| 16.1 | The period of Bid validity shall be 120 days after the deadline for Bid submission specified in the BDS. |
| 17.1 | The Bidder shall provide Bid Security using the form included in Section IV, Bidding Forms. |
| 17.2 | The amount of Bid Security shall be INR 2,93,53,170/- |
| 18.1 | Alternative bids <i>are not</i> permitted. |
| 18.2 | Alternative times for completion <i>are not</i> permitted. |
| 18.4 | Alternative technical solutions shall be permitted for the following parts of the Services: <i>N/A</i> . |
| D. Submission of Bids | |
| ITB 21.1 | Class of DSC required is: CLASS – II or above |
| ITB 22.1 | Both Technical and Financial Bids shall be uploaded on-line in separate electronic envelopes, The deadline for uploading the bids for- Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga) Date: Time: 1500 hrs IST |

The Bidder shall submit the following additional documents in its Bid. The list of additional documents should include the following:]

(i) Contractor Registration certificate on e-procurement system as per IFB, if applicable

(a) Dredging Management Plan – Methodology

Detailed methodology to indicate how various activities will be carried out to achieve the performance parameters laid down in Appendix A to the contract – **Description of the Services.**

(b) Detailed Dredger deployment plan with respect to:

- i. Dredging Management Plan – Methodology (including disposal of dredged material)
- ii. No. of dredgers to be deployed at various points of time along with dredging capacities and manpower.
- iii. Frequency of surveys along with details of equipment and manpower to be deployed by them to meet the requirements in the concerned stretch.

(c) List of major items of equipment proposed to carry out the contracted services using the format provided in Section IV - Bidding Forms

(d) To establish its qualifications to perform the contract(s) in accordance with Section III, Qualification Criteria and Requirements, the Bidder shall provide the information requested in the corresponding Information Sheets included in Section IV, Bidding Forms.

(e) Bidder to indicate whether they are presenting
Single Entity Bid or
Joint Venture Bid

In the event of Joint Venture Bid or sub-contracting details of the Joint Venture Partner or the sub-contractor likely to be engaged to be identified & proposed in the Bid along with their credentials like (Experience, Financials & Profile) –

Each of the JV member will be required to furnish legally enforceable JV Operating Agreement along with its Techno-commercial Bid holding themselves jointly & severally responsible and liable to IWAI to perform all contractual obligations, valid for entire period of Contract.

As per the format enclosed in the bidding documents.

Further,

- i. No change in the composition of the JV without the written consents of the Employer after submission of Bid shall be allowed.
 - ii. The leader should maintain at least 51% share in the JV at all the time during the period of contract
 - iii. The Technical Member of the JV should meet at least 25% of the financial requirement.
- (f) ... deleted

(g) Code of Conduct (ESHS)

The Bidder shall submit its Code of Conduct that will apply to its employees and subcontractors, to ensure compliance with its Environmental, Social, Health and Safety

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| | <p>(ESHS) obligations under the contract. Complete and include the risks to be addressed by the Code in accordance with Section VI-Works' Requirements, particularly. Risks associated with: labor influx, sexual harassment, gender based violence, sexual exploitation and abuse, illicit behaviour and crime, and maintaining a safe environment etc.</p> <p>In addition, the Bidder shall detail how this Code of Conduct will be implemented. This will include: how it will be introduced into conditions of employment/engagement, what training will be provided, how it will be monitored and how the Contractor proposes to deal with any breaches.</p> <p>The Contractor shall be required to implement the agreed Code of Conduct upon contract award.</p> <p>Management Strategies and Implementation Plans (MSIP) to manage the (ESHS) risks</p> <p>The Bidder shall submit Management Strategies and Implementation Plans (MSIP) to manage the following key Environmental, Social, Health and Safety (ESHS) risks.</p> <p>The Bidder is required to assess which of the following risks are applicable for this contract and accordingly submit the MSIP along with the bid.</p> <ol style="list-style-type: none"> <i>1. Traffic Management Plan to ensure safety of local communities from work traffic;</i> <i>2. Water Resource Protection Plan to prevent contamination of drinking water, Swamp Protection Plan, Dredged Material Disposal Plan, Biological Environment Plan;</i> <i>3. Boundary Marking and Protection Strategy for mobilization and construction to prevent offsite adverse impacts;</i> <i>4. Strategy for obtaining Consents/Permits prior to the start of relevant works such as opening a quarry or borrow pit;</i> <i>5. Gender based violence and sexual exploitation and abuse (GBV/SEA) prevention and response action plan.</i> <p>The Contractor shall be required to submit for approval, and subsequently implement, the Contractor's Environment and Social Management Plan (C-ESMP), in accordance with the Particular Conditions of Contract Sub-Clause 10.1, that includes the agreed Management Strategies and Implementation Plans described here.</p> <p>"The extent and scope of these requirements should reflect the significant ESHS risks or requirements set out in Section VI. The key risks to be addressed by the Bidder should be identified from the Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP), and/or Consent Conditions (regulatory authority conditions attached to any permits or approvals for the project), up to a maximum of four. The risks may arise during mobilization, construction, development dredging, improvement, or maintenance services and may include construction traffic impacts on the community, pollution of drinking water, depositing on private land and impacts on rare species etc. The management strategies and/or implementation plans to address these could include, as appropriate: mobilization strategy, strategy for obtaining consents/permits, traffic management plan, water</p> |
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| | resource protection plan, bio-diversity protection plan and a strategy for marking and respecting work site boundaries etc.” |
| 20.3 | <p>The original documents mentioned in ITB 20.3 shall be submitted in the manner specified therein to the Employer at the address mentioned below on or before the date and time for opening of bids specified in BDS 24.1.</p> <p>Address:</p> <p>Vice Chairman & Project Director (JMVP) Inland Waterways Authority of India, A-13 Sector-1 Noida - 201301 (UP) INDIA Tel. Nos: 0120- 2544004, 0120-2424539, Fax No. – 0120-2543976</p> |
| 21.1 | The last date / deadline for submission of bids shall be upto 15:00 hrs. of date 10.06.2022. |
| E. Public Opening of Technical Parts of Bids | |
| ITB 25.1 | <p>The online Technical Parts of the Bid for</p> <p>Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga)</p> <p>shall take place on Date: 10.06.2022 Time: <u>1530 hrs IST</u></p> <p><i>Inland Waterways Authority of India Vice Chairman & Project Director, Jal Marg Vikas Project A-13, Sector-1, Noida, Gautam Buddha Nagar, UP - 201301 Email: vc.iwai@nic.in and rkant.iwai@nic.in</i></p> |
| F. Evaluation of Bids – General Provisions | |
| ITB 29.3 | The adjustment shall be based on the highest price of the item or component as quoted in other substantially responsive Bids, subject to a maximum of the estimated price of the item. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Employer shall use its best estimate. |
| G. Evaluation of Technical Parts of Bids | |
| ITB 30.1 | The Bids shall be Technically Evaluated, Bidders have to meet the Qualifying requirements as stipulated in the documents under evaluation criteria. |
| ITB 33.1 | is time the Employer “ does not intend ” to execute certain specific parts of the Works by sub-contractors selected in advance. |
| ITB 33.2 | The qualification and experience of the sub-contractors must meet the minimum criteria for the relevant work to be sub-contracted failing which such sub-contractors will not be permitted to participate. |



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| ITB 33.3 | <p>(a) Contractor's proposed subcontracting: Maximum percentage of subcontracting permitted is: 25 % of the total contract amount</p> <p>(b) Bidders planning to subcontract more than 10% of total volume of work shall specify, in the Bid Submission Form, the activity (ies) or parts of the works to be subcontracted alongwith complete details of the sub-contractors and their qualification and experience. The qualification and experience of the sub-contractors must meet the minimum criteria for the relevant work to be sub-contracted failing which such sub-contractors will not be permitted to participate.</p> <p>(c) Sub-contractors' qualification and experience will not be considered for evaluation of the Bidder. The Bidder on its own (without taking into account the qualification and experience of the sub-contractor) should meet the qualification criteria.</p> <p><i>[Note: Work should not be split into small parts and sub-contracted].</i></p> |
| H. Public Opening of Financial Parts of Bids | |
| ITB 34.2 (c) | <p>Following the completion of the evaluation of the Technical Parts of the Bids, the Employer will notify all Bidders of the date, time, and place of the public opening of Financial Parts. In addition to the above the Employer shall publish a notice of the public opening of the Bid on its website www.iwai.nic.in</p> <p style="text-align: center;"><i>Inland Waterways Authority of India Vice Chairman & Project Director, Jal Marg Vikas Project A-13, Sector-I, Noida, Gautam Buddha Nagar, UP - 201301</i></p> <p><i>Email: vc.iwai@nic.in and rkant.iwai@nic.in</i></p> |
| I. Evaluation of Financial Parts of Bids | |
| ITB 40.2 | <p>In the event of Unbalanced, front loaded or substantially below the updated estimate in the opinion of employer is received. In such cases, the Employer may ask the bidder to deposit the additional Performance Security for the differential cost.</p> <p>For such bids where,</p> <ol style="list-style-type: none"> i. financial quote is up to $\pm 10\%$ of the updated estimate in the opinion of the employer, no additional security deposit is required. ii. financial quote is between $\pm 10\%$ to $\pm 20\%$ of the updated estimate in the opinion of the employer, the contractor is liable to provide additional PBG and iii. the additional value of the PBG shall be equal to the difference between quoted amount and 95% of the updated estimate in the opinion of the employer in the form of BG or DD and same will be informed during the pre-award discussion. iv. The additional PBG defined herein shall be over and above the performance security. However, non-furnishing of additional BG within the stipulated time of LOA shall be treated as default and consequently, the tender shall be cancelled with forfeiture of EMD. |



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| | The additional PBG shall be over & above the Performance Security (PBG) shall be valid as per GCC Clause and shall be returned along with the Performance Security to the Contractor. |
| J. Award of Contract | |
| ITB 42.1 | The Contract Award Notice shall also be published on the e-portal or on a National website (GoI website http://tenders.gov.in or GoI Central Public Procurement Portal https://eprocure.gov.in/cppp/) or on the Employer's website with free access if available, or in at least one newspaper of national circulation in the Employer's Country, or in the official gazette. |
| ITB 45.1 and 45.2 | <p>The successful Bidder shall also be required to submit an Environmental, Social, Health and Safety (ESHS) Performance Security.</p> <p>Throughout this bidding document the term 'performance security', unless the context clearly indicates otherwise, means and includes both 'the performance security and the ESHS performance security' to be submitted by the successful bidder in the amounts specified in GCC/ PCC.</p> |
| 35.0 | The Performance Security acceptable to the Employer shall be the in the Standard Form of Bank Guarantee for an amount equivalent to PBG for 5% & ESHS for 1.5% of the Contract Price. |
| ITB 46.1 | "The Adjudicator proposed by the Employer is: Sh. S. C. Misra The daily fee payable to Adjudicator is Rs 10,000/-." The CV is attached at the end of this document. |
| ITB 47 | <p>The Tender / Bid related complaints may be submitted / addressed to</p> <p><i>Vice Chairman & Project Director (JMVP)</i> <i>Inland Waterways Authority of India</i> <i>Vice Chairman & Project Director, Jal Marg Vikas Project</i> <i>A-13, Sector-1, Noida, Gautam Buddha Nagar, UP – 201301</i></p> <p><i>Email: vc.iwai@nic.in and rkant.iwai@nic.in</i></p> |

Brief Biodata of Dr Suresh Chandra Misra

1. **Name:** MISRA SURESH CHANDRA

Date of birth: 12TH SEPTEMBER 1948

2. **Profession:** ACADEMIC and RESEARCH

Present Position: Retired as Professor from IIT Kharagpur

Address:

| | |
|-----------------|------------------------------------------------------------------------------------------------------|
| (a) Official NA | (b) Residential Plot no. 1080, Lane no. 7, Aerodrome Area, Bhubaneswar – 751020, Odisha, India |
| Phone: NA | Phone: +91 9437477180 |
| | Email: misra1948@gmail.com |

3. Degrees Obtained

| Degree | Awards | University | Specialization | Hall of Residence | Year |
|---------------|----------------------|---------------------------------------|--------------------|-------------------|---------|
| B.Tech(Hons.) | Silver Medal | IIT Kharagpur | Design | Patel | 1965-70 |
| Ph.D | National Scholarship | University of Newcastle upon Tyne, UK | Naval Architecture | | 1973-76 |

4. Professional Achievements

| Period From To | Position Held | Organization/Institution | Role | Remarks |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1970 1979 | Design Engineer | Hindustan Shipyard Ltd. | Design Engineer | Sponsored for three years to do Ph.D. in UK (1973-1976) |
| 1979 1989 1990 till retirement | Assistant Professor Professor | IIT Khargapur | Teaching, Research and Industrial Consultancy | On British council fellowship for 6 months in Glasgow, univ in 1984., later lien to IIT Madras and NSDR/ IMU, Visakhapatnam |
| 1998 2000 | Visiting Professor (lien) | IIT Madras | Teaching, Research and Industrial Consultancy | |
| 2008 2013 | Director (on Lien) | NSDR/ and later IMU Visakhapatnam campus | Administration, Teaching, Research and Industrial Consultancy | NSDR/ was subsumed to Indian Maritime University in 2009 and he was the first Director of IMU Visakhapatnam campus |
| 2013 till date | Chairman, Naval Research Board, DRDO (an honorary position); Founder and current President, Forum for River and Ocean Scientists and Technologists (FROST), Odisha, registration no. 24010/33 of 2018-19; Visiting faculty at IMU, Visakhapatnam Campus; Advisor to General Consultants for Kochi Water Metro project under KMRL, Kochi. | | | |

5. Record of Contributions to: (a) Intellectual Property (Publications/Design/Developments/Patents etc.)



- (e) “Modularised Ship Hull Form”, Inventors: Prof S C Misra and Prof O P Sha of IIT Kharagpur, patents rights belong to: IIT Kharagpur, Ministry of Shipping of Govt. of India, Department of Science and Technology of Govt. of India, AAGL(Gujarat), BSL Mumbai, GSL Goa, LRS Mumbai, IRS Mumbai, Original Patent application no. 0561/Cal/2002 dt. 25.9.2002, patent no. 214274 awarded on 07/02/2008.

(f) Books:

- S. C. Misra and P. Misra (Ed.), “2020 Lockdown Effects and Future Trends in Water Body Management”, LAP Publishing, Germany, October 2020.
- S. C. Misra, “Design Principles of Ships and Marine Structures”, CRC Press of Tylor and Francis Group, USA, December 2015.
- S.C.Misra and O.P.Sha, editors “Computer-Aided Ship design”, under assistance from CEP Cell of IIT Kharagpur, 1989(contributed as author also).
- M.R.Pranesh and S.C.Misra, “Environmental Hazards and Safety Requirement in the Port sector”, under assistance from Curriculum Dev. Prog., IITMadras, 2000(contributed as author also).

**(b) Leadership (Entrepreneurship/
Organizational Development)**

(i) *Converting a ship design organisation, National Ship Design and Research Centre, to a part of a central university, Indian Maritime University, Visakhapatnam Campus*

(ii) *Academic leadership as stated below:*

- *Started a new multidisciplinary Post Graduate Diploma program in Maritime Operation and Management (PGDMOM) exclusively for professional marine engineers which started at IIT Kharagpur in the academic year 2003-2004.*
- *Started the Naval Architecture and Ocean Engineering degree programs at both UG and PG levels at IMU Visakhapatnam Campus in its first year of creation, 2009.*
- *Started a PG program in Dredging and Harbour Engineering at IMU, Visakhapatnam campus in 2010 for the first time in the country.*

(iii) *Developing strong research base at IITs, IISc and in other engineering institutions and generating multi-institutional research programs and developing strong connection between teaching institutions and research organisations in the context of naval research through NRB.*

(iv) *Setting up and establishing FROST, Odisha*

(c) Society

- 13 Invited mentor and speaker of INSPIRE program for development of science interest in school children sponsored by DST at Port Blair Campus of Pondichery University, at IMU Visakhapatnam Campus and at NIT Rourkela during 2012, 2013 and 2015.
- 14 Lectures at schools and colleges in Odisha regarding water awareness.
- 15 Safety of wooden boats moving in rivers and coastal waters for tourism and fishing is a major concern which has been a major concern for me. I have now been involved in modifying an existing wooden boat for higher safety and reduction of pollution. This activity is to continue.

(d) **Any other:** More than 50 technical papers published

6. Peer Recognition (National/International Honours, Awards, Prizes including honorary degree)

Awarded National Scholarship for Higher Study Abroad by Government of India in 1973 till 1976.

Awarded Silver Medal by IIT Kharagpur in 1970 for securing first position in B.Tech (H) course in Naval Architecture.

Awarded Marine Engineering Division Medal, Institution of Engineers (India), 2001.

Awarded Institution Medal (Col. G.N.Bajpai), Institution of Engineers (India), 2001.

H.S.Rao Memorial Award for Best paper, June 04 issue of Marine Engineers Review (India), 2005 given by Institution of Marine Engineers (India).

Rashtriya Gaurav Award presented by India International Friendship Society in 2004.

Best Citizen of India Award and Citation in the book by the same title, published by International Publishing House, New Delhi, 2004.

7. Membership/Fellowship of National/International Professional Bodies

Founder President, Forum for River and Ocean Scientists and Technologists, Odisha

Fellow of Institution of Engineers (India)

Fellow of Institution of Marine Engineers (India)

Life Member of Institution of Marine Technologists, Mumbai

Life Member of Indian Society for Technical Education

Member of Society of Naval Architects and Marine Engineers, USA.

Member, Indian technical Committee of Class NK, Nippon Kaiji Kyokai, Japan, 2012 onwards.

Member, Technical Committee of IRS, Mumbai.

Member of PMCC for acquisition of 2 coastal research vessels by NIOT funded by MoES.

8. Specific outstanding Accomplishments meriting the award (within 100 words):

(Detailed biography may be provided as an annexure)

Apart from teaching naval Architecture to students, Prof Misra has been involved in design of ships and boats and other water based infrastructure including a 600 TEU container vessel and marine engineering laboratory *Ship in Campus*. His book *Design Principles of Ships and Marine Structures* published by Taylor and Francis Group has been widely appreciated. After his retirement from active service, apart from being the Chairman of Naval research Board, he has formed a think tank FROST. His current interests include safety and sustainability in boats of inland water transportation, increasing water awareness in Odisha and ancient river and coastal transportation system for building shore based temples.

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| | Section III - Evaluation and Qualification Criteria | |
| 1 | Technical Part | |
| 1.1 | Adequacy of Technical Proposal <ul style="list-style-type: none"> a. Dredging Methodology b. Environmental, Social, Health and Safety (ESHS) obligation c. Work Program d. Site Organization and Communications Plans e. Sub-Contracting | |
| 1.2 | Multiple Contracts Not Applicable | |
| 1.3 | Specialised Sub- Contract Not Applicable | |
| 1.4 | Qualification Criteria Nature of the Bidder | |
| | | |
| 2 | Qualification | |
| 2.1 | Eligibility | |
| 2.2 | Historical Contract Performance | |
| 2.3 | Financial Situation and performance | |
| 2.4 | Experience | |
| 2.5 | Contractors Representative & Key Persons | |
| 2.6 | Contractors Equipment | |
| | | |
| 3 | Financial Part | |
| | | |

In line with the two-envelope bidding process, this section includes Evaluation and Qualification Criteria:

**(A.1) Technical Part; and
(B.2) Financial Part.**

1. Technical Part

1.1 Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include:

- (i) 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, material sourcing and Quality Control/Assurance in sufficient detail and fully in accordance with the requirements stipulated in Section VII (Works' Requirements).

For this purpose, the Bidder should also submit:

1.Dredging Methodology:

- i. **Statement of Work Methods:** This shall demonstrate the Bidders capability to define, optimize and carry out on a timely basis the physical interventions detailed in the scope of requirements specified in Section VI.

The work methodology shall include a mobilization and execution plan that details how the bidder will, on the waterway in

Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga)

2. Environmental, Social, Health and Safety (ESHS) obligation

A detailed note outlining its proposed methodology and program of construction including compliance with the Environmental, Social, Health and Safety (ESHS) obligations

- i. An outline proposal on how the contractor shall minimize environmental impacts especially to sensitive and critical areas including but not limited to reed lands, mud flats, mangrove forests and migratory bird habitats taking into account:
 - 1. The requirement for dredging sediment volumes in shallow waterways; placing dredged materials in-stream; and, early detection and quantification of hazardous sediment and its removal; and any hazardous sediment if found during the dredging shall be removed by the bidder at no extra cost.
 - ii. The requirement to minimize noise, water and air pollution from its own operations.
 - iii. An outline Quality Assurance Plan; and
 - iv. A Health and Safety Plan specific to the proposed works

3. **Work Program:**

A Work Program compiled on a project management software (like MS Project, Primavera or similar) which must clearly show the major project works proposed and the corresponding timeline with the following characteristics:

Chapter 1. Show work stages (Mobilization, Survey, Dredging, Maintenance services, and Demobilization, etc.) and BOQ Items with the corresponding timeline;

Chapter 2. Show the leading, lagging and critical activities, with linkages to related activities, milestones, key personnel in charge, etc.;

Chapter 3. Resources (equipment, material, personnel, etc.) plan to achieve the Work Program.

4. **Site Organization and Communications Plans:** that clearly provide:

An overall organization chart showing the division between site offices and head office responsibilities;

A site organization chart clearly showing responsibilities and functions of key personnel. The person in-charge and the second in command for each location and their responsibilities;

The proposed layout of the Contractor's facilities and equipment, including offices and accommodation units based on the proposed sites and waterways routes;

Internal Communications Plan within the Contractor's organization and between its home office and the site offices;

External Communication Plan between the Contractor, the Project Manager/Supervision & Performance Monitoring Consultant, Related Stakeholders, Users, and Employer;

Navigational protocol to assure free passage for ships during dredging or other works.

5. **Sub-contracting**

an assessment of the details of subcontracting elements of works amounting to more than 10% of the bid price; for each element proposed to be sub contracted furnish details whether the identified Sub-contractor possesses the required qualifications and experiences to execute that element satisfactorily.

[Work should not be split into small parts and sub-contracted].

1.2 Multiple Contracts if permitted under ITB 35.3, - Not Applicable

1.3 Specialised Subcontractors - Not Applicable.

The specialized sub-contractors proposed shall be fully qualified for their work proposed, and meet the following criteria:

1.4 Qualification Criteria

Pursuant to ITB 32.1, the Employer shall assess each Bid against the following Qualification Criteria. Requirements not included in the text below shall not be used in the evaluation of the Bidder's qualifications.

In case a contractor while working on an IWAI contract, applies for another similar contract to be executed by IWAI, then to check whether the contractor meets the qualification criteria for the new contract, IWAI will calculate the bid capacity of the bidder as per the formula mentioned at 2.4.2 (C)

| Eligibility and Qualification Criteria | | | Compliance Requirements | | | Documentation |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------------------|--------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Factor | | | | | | |
| Sub-Factor | Requirement | Criteria | | | | Documentation Submission Requirements |
| | | Single Entity | Bidder | | | |
| | | | Joint Venture (existing or intended) | | | |
| | | | All partners combined | Each partner | One Member | |
| 1.0 Nature of Bidder | Bidder to indicate whether they are presenting a Single Entity bid Or Joint Venture Bid Or Intend to Sub Contract on Later date | | | | | In the event of Sub-contracting, the details of the Sub-contractor likely to be deployed be identified in the proposal. Details & Profile of Sub-contracting firms |
| iv. The leader should maintain at least 51% share in the JV at all the time during the period of contract | | | | | | |
| v. The Technical Member of the JV should meet at least 25% of the financial requirement | | | | | | |
| vi. List of Sub-contractors against each item likely to be deployed along with the bid as per format. | | | | | | |
| vii. The Contractor shall select & employ its subcontractor from such list. | | | | | | |

1. Eligibility

| | | | | | | | |
|-----|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|-------|-------------------------------------------|
| 1.1 | Nationality | Nationality in accordance with ITB 4.3 | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Forms ELI – 1.1 and 1.2, with attachments |
| 1.2 | Conflict of Interest | No conflicts of interest in accordance with ITB 4.2 | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Bid Submission Form |
| 1.3 | Bank Eligibility | Not having been declared ineligible by the Bank, as described in ITB 4.4 & 4.7 | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Bid Submission Form |
| 1.4 | Government Owned Entity | Bidder to meet conditions of ITB Sub-Clause 4.5. The entity should not be a dependent agency of the borrower or sub-borrower or Employer. | Must meet requirement | Must meet requirement | Must meet requirement | N / A | Forms ELI -1.1 and 1.2 with attachments |
| 1.5 | United Nations resolution or Borrower's country law | Not having been excluded as a result of prohibition in the Borrower's country laws or official regulations against commercial relations with the Bidder's country, or by an act of compliance with UN Security Council resolution, both in accordance with ITB 4.7 and Section V. | Must meet requirement | Must meet requirement | Must meet requirement | N / A | Forms ELI -1.1 and 1.2 with attachments |

2. Historical Contract Non-Performance

| | | | | | | | |
|-----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------------------------------|
| 2.1 | History of Non-Performing Contracts | Non-performance of a contract did not occur as a result of contractor's default since 1 st January 2012. | Must meet requirement | Must meet requirements | Must meet requirement | N/A | Form CON-2 |
| 2.2 | Suspension Based on Execution of Bid Securing Declaration by the Employer | Not under suspension based on execution of a Bid Securing Declaration pursuant to ITB 4.7. | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Bid Submission Form |
| 2.3 | Pending Litigation | Bidder's financial position and prospective long-term profitability still sound according to criteria established in 3.1 below and assuming that all pending litigation will be resolved against the Bidder | Must meet requirement | N/A | Must meet requirement | N/A | Form CON – 2 |
| 2.4 | Litigation History | No consistent history of court/arbitral award decisions against the Bidder since 1 st January 2012 | Must meet requirement | Must meet requirement | Must meet requirement | N/A | Form CON – 2 |
| 2.5 | Declaration: Environmental, Social, Health, and Safety (ESHS) past performance | Declare any civil work contracts that have been suspended or terminated and/or performance security called by an employer for reasons related to the non-compliance of any environmental, or social, (including sexual exploitation and abuse (SEA) and gender based violence (GBV)), or health or safety requirements or safeguard in the past five years ⁹ . | Must make the declaration. Where there are Specialized Sub-contractor/s, the Specialized Sub-contractor/s must also make the declaration. | N/A | Each must make the declaration. Where there are Specialized Sub-contractor/s, the Specialized Sub-contractor/s must also make the declaration. | N/A | Form CON-3 ESHS Performance Declaration |

3. Financial Situation and Performance

| | | | | | | | |
|-----|-------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----|----------------------------------------------------|----------------------------------|
| 3.1 | Financial Capabilities | (i) The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real | Must meet requirement | Must meet requirement | N/A | Must meet requirement to the minimum extent of 30% | Form FIN – 3.1, with attachments |
|-----|-------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----|----------------------------------------------------|----------------------------------|

⁹The Employer may use this information to seek further information or clarifications in carrying out its due diligence.

| | | | | | | | |
|--|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| | | assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet | | | | | |
| | | the construction cash flow requirements estimated as INR 24.46 Crs (about 6 six months cash flow at peak dredging / construction period) for the subject contract(s) net of the Bidders other commitments. | Must meet requirement | Must meet requirement | N/A | Must meet requirement | Form FIN – 3.1, with attachments |
| | | (ii) The Bidder shall also demonstrate, to the satisfaction of the Employer, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments | Must meet requirement | Lead Partner must meet the requirement. | N / A | Must meet requirement The Technical Member of the consortium should meet at least 30% of the financial requirement. | Form FIN – 3.1, with attachments |
| | | (iii) The audited balance sheets or, if not required by the laws of the Bidder's country, other financial statements acceptable to the Employer, for the last 3 years shall be submitted and must demonstrate the current soundness of the Bidder's financial position and indicate its prospective long-term profitability. | Must meet requirement | Lead Partner must meet the requirement | N/A | Must meet requirement | Form FIN – 3.1, with attachments |
| | Annual Average Turnover | Minimum average annual turnover of INR 43.93 Crs), calculated as total certified payments received for contracts in progress and/or completed within the last five financial years, divided by five years. ending 31 st march 2020-21 | Must meet requirement | Must meet requirement | Must meet twenty five percent (25%) of the requirement | Must meet fifty percent (50%) of the requirement | Form FIN - 3.2 |

| 4. Experience | | | | | | | |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.1 | General Dredging Experience in Ports / River, Management of Vessel, Manning of Vessel or Vessel related Marine Works | <p>Experience under construction contracts for similar works such as those pertaining to General Dredging Experience in Ports / River / Lakes/ Canals/ Water Bodies / River Management of Vessel, Manning of Vessel or Vessel related Marine Works</p> <ul style="list-style-type: none"> River Dredging and management of dredging materials. Dredged material used in reclamation of port / harbour will also be considered. <p>in the role of contractor, JV member, sub-contractor, or management contractor for at least the last seven [7] years ending 31st march 2020-21 prior to the bid submission deadline.</p> | Must meet requirement is Dredging experience for Ports / River / Lakes/ Canals/ Water Bodies / River Management of Vessel, Manning of Vessel or Vessel related Marine Works | Must meet requirement is Dredging experience for Ports / River / Lakes/ Canals/ Water Bodies / River Management of Vessel, Manning of Vessel or Vessel related Marine Works | Must meet requirement is Dredging experience for Ports / River / Lakes/ Canals/ Water Bodies / River Management of Vessel, Manning of Vessel or Vessel related Marine Works | N/A | Form EXP – 4.1 |
| 4.2 (a) | Specific Dredging & Contract Management Experience | <p>Bidder should have successfully completed as a prime contractor, JV member, management contractor or sub-contractor, minimum</p> <p>Three similar works each costing not less than INR 58.70 Crs or Two similar works each costing not less than INR 73.38 Crs Or One similar works costing not less than INR 117.41 Crs</p> <p>For the purpose of completed works, The value of the completed contract for similar works should not be less than 80% of the contract value.</p> <p>A certificate for ongoing works from the employer stating the Value of the work & % completion</p> | Must meet requirement | Must meet requirement | Must meet requirement for one contract of 25% value | Must meet requirement for one contract of 50% in value | Form EXP 4.2(a). The contractor should have borne responsibility for execution of works to the extent he claims experience. A contractor should not claim experience for the works he has never executed and shall submit supporting documents like copy of work order along with completion certificates. |

| | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------|-----|-----------------------|----------------------------------------|
| | | has been achieved shall be considered as completed and certificate of employer in this regard stating percentage of completion shall be submitted. | | | | | |
| 4.2b | The value of the similar work where 90% contract value is paid will be considered for evaluation purpose as completed. <i>In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.</i> | | | | | | |
| 4.2c | <i>For a bidder (either individually as a single entity or as a JV member) to qualify for a group of lots (contracts), he must demonstrate having experience and resources sufficient to meet the aggregate of the qualifying criteria for all the contracts in question.</i> | | | | | | |
| 4.2d | <i>Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity for construction work is equal to or more than the total bid value of the work. The available bid capacity will be calculated as under:</i> <i>Assessed Available bid capacity = (A*N*1.5-B)</i> <i>Where,</i> <i>A = Maximum value of civil engineering works executed in any one year during the last five years (updated to the price level of the financial year at the rate of 5% per year), taking into account the completed as well as works in progress).</i> <i>N = Number of years prescribed for completion of the works for which bids are invited (period up to 6 months to be taken as half-year and more than 6 months as one year).</i> <i>B = Value, at the current price level, of existing commitments on on-going works to be completed during the period of completion of the works for which bids are invited.</i> <i>Note: the statements in Section IV showing the value of existing commitments of on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer in charge, not below the rank of an Executive Engineer or equivalent.</i> | | | | | | |
| 5. Quality Requirements: <div>All Parties Combined – Must meet requirement (means all parties or any one member)</div> | | | | | | | |
| 5.1 | ISO 9001-2008/2015 Quality management system requirements | Quality management certificate issued by an international standards organization | Must meet requirement | Must meet requirement | N/A | Must meet requirement | Valid ISO 9001 Certification. |
| 5.2 | OHSAS 18001 - Occupational Health and Safety Assessment Series | Relevant OHSAS certificate and Experience in occupational health and safety management over the last 2 years, starting 1 st January 2010. | Must meet requirement | Must meet requirement | N/A | Must meet requirement | Valid OHSAS certificate. |
| 5.3 | ISO 14001:2004/2015 Environmental Management systems | Relevant Environmental management certificate and experience with environmental management systems over the last 2 years, starting 1 st January 2010. | Must meet requirement | Must meet requirement for certification and experience over last 5 years | N/A | Must meet requirement | Valid ISO 14001:2004/2015 certificate. |

2.5 Contractors Representative & Key personnel

The Bidder must demonstrate that it will have a suitably qualified (and in adequate numbers) minimum key personnel, as described in the table below, that are required to perform the contract.

The Bidder shall provide details for the key personnel and such other Key Personnel that the Bidder considers appropriate, together with their academic qualifications and work experience.

The Bidder shall complete the relevant Forms in Section IV, Bidding Forms.

The Contractor shall require the Employer's consent to substitute or replace the Key Personnel.

| Item No. | Position/specialization required for each lot | Relevant academic qualifications | Minimum years of relevant work experience | MUST meet requirement |
|---------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------|
| 1 | Contract Manager | Contract Manager shall have a bachelor’s degree in Civil/Mechanical engineering and an experience of minimum 10 years’, out of which at least 7 years shall be in managing projects of similar nature. Personnel must have experience in executing dredging projects. The age of the personnel as on the date of bid submission shall not be more than 50 years; | 7 | Bidder to provide the details of the manpower at the time of Bid Submission |
| 2 | Surveyor | Diploma in Civil Engineering / Mechanical Engineering/Surveying with 3 years’ experience in Hydrographic Survey or Survey Recorder I/II in Hydrographic Survey | 3 | |
| 3 | Crew | Must have inland vessel certification | | |
| 4 | Details of the Sub- Contracting agencies. | | | |
| Suitable experts in the following specializations | | | | |
| 5 | Dredger Master | Dredging experience in River/Canal/Port | 7 | Desirable at the time of Bid Submission |
| 6 | Social Expert | Graduate or equivalent in social sciences | 3 | |
| 7 | Environment Expert | Graduate in Environmental Engineering/ Environmental Sciences | 3 | |
| 8 | Health & Safety Expert | Graduate in Engineering/ Sciences and must have Diploma / Certification in health and safety | 3 | |

The Bidder must not have in his employment:

[i]the near relations (defined as first blood relations, and their spouses, of the bidder or the bidder's spouse) of persons of the following Government Departments. All organization entities / agencies under Ministry of Ports, Shipping and Waterways without Government permission, any person who retired as Gazetted officer within the last two years.

| 2.6.0 Equipment – The Bidder must demonstrate that it has Key equipment listed hereunder | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment | Equipment Type & Characteristics Minimum Capacity | |
| 6.1 Dredger | Dredger - Minimum of four (4) nos. of Cutter Suction Dredgers having capacity of dredging minimum of 250 cum of solids per hour with suitable discharge pipes. River worthiness certificate to be provided at the time of Bid Submission, from the certifying authority. | The details of these equipment shall be submitted at the time of bidding along with their technical details. <i>for the purpose of Evaluation of the bids.</i> These Equipment must be either owned or hired* or 'to be procured' by the bidder and/or by member of JV (In case of JV) |
| 6.2 Survey Vessel | Survey Vessel - Minimum of two (2) nos. with multi beam eco-sounder, Altimeter for facilitating the measurement of Depth & Width of the Channel River worthiness certificate to be provided at the time of Bid Submission, from the certifying authority | |
| 6.3 Tug Boats | Tug Boats - Having suitable capacity for pulling the Dredgers and allied equipment / floating boats / pipelines etc. River worthiness certificate to be provided before deployment at the Dredging Site from the certifying authority. | Desirable at the time of bidding |
| 6.4 Accommodation Boats | Accommodation Boats - To accommodate Operational staff. River worthiness certificate to be provided before deployment at the Dredging Site by the certifying authority. | |
| 6.5 Details of Equipment | To be hired with the details of the Equipment | As per format at Form EXP – 6.6 |
| <p>Bidders to Note:</p> <p>The documentary evidence to be submitted by the Bidders for the proposed Dredgers & other Equipment to be deployed should indicate the Name, Capacity with Registration wherever applicable, Rated Capacity; Technical Details, year of Manufacture; Survey Certificates; Details of Previous Dry Dock; River Worthiness Certificate from certifying authority. As per Format Attached</p> <ol style="list-style-type: none"> The Bidders to ensure that fitness certificate of the equipment like Dredgers & Survey Vessels should be duly certified by an authorized certifying agency at the time of Bidding Successful bidder shall produce the fitness certificate of the equipment like Tug Boats, Accommodation Boat duly certified by an authorized certifying agency at the time of deployment at dredging site. *In case the dredgers are leased or hired, a proper lease agreement on Stamp paper shall be submitted along with the Bid stating that the proposed dredgers (along with the details) shall be available to the bidders for immediate deployment on the Award of the Work. The Bidder shall provide Scanned copy of the details of dredgers, Tools, Plants, equipment and machinery/ workshop facilities and its planning schedule using Form EQU in Section IV, Bidding Forms. However, the actual deployment of equipment shall be as per site requirement. | | |

3. Financial Part

| | | |
|---|--------------------------------------------------------------------------------------------------|----------------|
| 1 | Margin of Preference | Not Applicable |
| 2 | Alternative Completion Times (ITB 13.2) | Not Applicable |
| 3 | Alternative Technical Solutions Financial Part for specified parts of the Works (ITB 13.4) | Not Applicable |
| 4 | Other criteria (if permitted under ITB 35.1(f)) | Not Applicable |

3.1 Multiple Contracts if permitted under ITB 35.3, will be evaluated as under.

Not Permitted /not applicable

Section IV. Bidding Forms

Table of Forms

| | | | |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------|
| 1 | Bid Submission Form and letter of Bid & Technical Proposal Form The bidder's Technical Proposal shall include the following elements: SCHEDULE B.....Site Organizations SCHEDULE C.....Method statement / Dredging Management Plan SCHEDULE D.....Mobilization Schedule. SCHEDULE E.....Contractor's Equipment SCHEDULE F.....Key Personnel Proposed SCHEDULE G.....Subcontractors & JV details SCHEDULE H.....ESHS Management Strategies and Implementation Plans SCHEDULE I.....Code of Conduct (ESHS) | | |
| 2 | format | reference | Content |
| | Form ELI-1.1 & 1.3 | Section-III QR 1.1 to 1.4 | Bidder's Information Form |
| | Form ELI-1.2 & 1.3 | Section-III QR 1.1 to 1.4 | Bidder's JV Information Form |
| | Form CON-2 | Section-III QR 2.1 to 2.4 | Historical Contract Non-performance, pending litigation and Litigation history |
| | Form FIN-3.1 | Section-III QR 3.1 | Financial Situation and Performance |
| | Form FIN-3.2 | Section-III QR 3.2 | Average Annual Turnover |
| | Form EXP-4.1 | Section-III QR 4.1 & 4.2a & 4.2b | General Dredging Experience |
| | Form EXP-4.2(a) | | Specific Dredging and Contract Management Experience |
| | Form EXP-4.2(b) | | Specific Dredging Experience of Key Activities |
| | Form Exp 5.0 | Section-III QR 5.1 to 5.8 | Quality Requirements |
| | Form Exp 6.0 | Section-III QR 2.5 | Key personnel and Representative details |
| | Form Exp 6.0 | Section-III QR 2.6 | Major Equipments available with bidder |
| | Form Exp 6.4 | Section-III QR 6.4 | Detailed Dredging Management Plan – Approach & Methodology |
| | Form Exp 6.5 | Section-III QR 6.5 | Detailed Dredger deployment Management Plan – w.r.t 6.4 |
| | Form Exp 6.6 | Section-III QR 6.6 | Details Major Equipment's available with bidder |
| | Form Exp 6.9 | Section-III QR 6.9 | Details of the proposed Sub-Contractors |
| 3 | ESHS Management Strategies and Implementation Plans Code of Conduct: Environmental, Social, Health and Safety (ESHS) CON – 3 Environmental, Social, Health, and Safety Performance Declaration | | |
| 4 | Bid Security (Bank Guarantee) or Bid Securing Declaration (Format) | | |
| 5 | Format for the Affidavit | | |
| 6 | Letter of Bid – Finance Part (Bid Price Form) | | |

Letter of Bid – Technical Part

The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and address.

Date: _____

NCB No.: _____

Invitation for Bid No.: _____

To: ***(Insert name of the Employer)***

Subject: - Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga) including River Conservancy and Channel marking

We, the undersigned, hereby submit our bid, in two parts, namely:

1. the Technical Part, and
2. the Financial Part

In submitting our Bid, we make the following declarations:

1. We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB8);
2. We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
3. We offer to execute in conformity with the Bidding Documents the following Works:
_____;
4. Our bid shall be valid for a period of _____ ***[insert validity period as specified in ITB 18.1.]*** 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;
5. We accept the appointment of ***[insert name proposed in Bid Data Sheet]*** as the Adjudicator

[or]

We do not accept the appoint of ***[insert name proposed in Bid Data Sheet]*** as the Adjudicator, and propose instead that ***[insert name]*** be appointed as Adjudicator, whose daily fees and biographical data are attached;
6. If our bid is accepted, we commit to obtain a performance security ***[and an Environmental, Social, Health and Safety (ESHS) Performance Security, Delete if not applicable]*** in accordance with the Bidding Document;
7. We are not participating, as a Bidder, in more than one bid in this bidding process in accordance with ITB 4.2,

8. Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible by the Bank, under the Employer's country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council(ITB 4.7);
9. We are not a government owned entity / We are a government owned entity but meet the requirements of ITB 4.5¹⁰;
10. We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption.
11. 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;
12. We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive; and
13. If awarded the contract, the person named below shall act as Contractor's Representative: _

Name of the Bidder* *[insert complete name of person signing the Bid]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder** *[insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid *[insert complete title of the person signing the Bid]*

Signature of the person named above *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* day of *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

** : Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules.

¹⁰Use one of the two options as appropriate.

Technical Proposal

Technical Proposal shall include the following elements

- **Schedule – B ⑨ Site Organization**
- **Schedule – C ⑨ Method Statement / Dredging Management Plan**
- **Schedule – D ⑨ Mobilization Schedule**
- **Schedule – E ⑨ Contractors equipment**
- **Schedule – F ⑨ Personnel**
- **Schedule – G ⑨ Subcontractors & JV details**
- **Schedule – H ⑨ Environmental, Social, Health, and Safety Management (ESHS) Strategies and Implementation Plans**
- **Schedule – I ⑨ Code of Conduct (ESHS)**

- **Appendix to the Technical Parts**
- - Form ELI-1.1 & 1.3
 - Form ELI-1.2 & 1.3
 - Form CON-2
 - Form FIN-3.1
 - Form EXP-4.1
 - Form EXP-4.2(a)
 - Form EXP-4.2(b)
 - Form Exp 5.0

- **⑨ Form of Bid Securing Declaration**

- **Letter of Bid ... Financial Part**
 - **⑨ Appendix to Financial Part – BOQ**
 - **⑨ Financial Bid – BOQ on line submission Schedule**
 - **⑨ Schedule of Sub-contractors**
 - **⑨ Schedule of Adjustment data.**

- Sub-contracting elements or works which in aggregate adds to more than 10% of Bid price *(for each the qualifications and experiences on the identified subcontractor in the relevant field should be given.*

- *Note: Work should not be split into small parts and sub-contracted; but sub-contracting specialized elements of works is acceptable.*

Appendix to Technical Part ... Schedule – B

Technical Proposal – Site Organization

[Insert Site Organization information]

Site Organization

Bidders shall give below full particulars of the organisation they propose to establish, direct, and administer the performance of the Contract. In particular, bidders shall indicate the location of site camps and the resources they intend to allocate to Self Control Units for planning and monitoring purposes.

- 1. SITE ORGANIZATION CHART**
- 2. NARRATIVE DESCRIPTION OF SITE ORGANISATION CHART**

Site Organization and Communications Plans: that clearly provide:

- i. An overall organization chart;
- ii. A site organization chart;
- iii. Preliminary layout of the Contractor's facilities and equipments;
- iv. Internal Communications Plan;
- v. External Communication Plan; and
- vi. Navigational protocol to assure free passage for ships during dredging or other works.

Appendix to Technical Part ... Schedule – C

Technical Proposal – Dredging Methodology &

Method Statement / Dredging Management Plan

(a) Contractor's Statement of Work Methods

To demonstrate a clear understanding of the requirements of the Contract, Bidders shall provide in the form of a narrative descriptions, sketches and drawings, how the works shall be undertaken.

The Statement of Work Methods shall demonstrate the Bidders capability to define, optimize and carry out on a timely basis the physical interventions detailed in the scope of requirements specified in Section VI.

The Statement of Work Methods shall include a mobilization and execution plan that details how the bidder will, on waterway stretch, carry out on a timely basis the following:

Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga) including River Conservancy and Channel marking

- i. An outline proposal on how the Contractor shall minimize environmental impacts especially to sensitive and critical areas including but not limited to reed lands, mud flats, mangrove forests and migratory bird habitats taking into account:
 - The requirement for dredging sediment volumes in shallow waterways; placing dredged materials in-stream or in-river; and, early detection and quantification of hazardous sediment and its removal; and,
 - The requirement to minimize noise, water and air pollution from its own operations.
- vii. An outline Quality Assurance Plan; and,
- viii. A Health and Safety Plan specific to the proposed works.

[insert method Statement – A detailed note should be submitted outlining bidders proposed methodology and program of construction including Environmental, Social, Health and Safety Management Strategies and Implementation Plans (ESHS-MSIP), backed with equipment, materials and manpower planning and deployment, duly supported with broad calculations and quality control system/assurance procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated review of completion as per mile stones]

Appendix to Technical Part Schedule – D

Technical Proposal – Mobilization Schedule

[Insert Mobilization Schedule]

Appendix to Technical Part ...Schedule – E

Technical Proposal – Contractor’s Equipment

The details of the contractor’s equipment to be provided at Form EXP – 6.5
Detailed Dredger Deployment Plan w.r.t

Detailed Dredging Management Plan Approach & Methodology

Appendix to Technical Part ...Schedule – F

Technical Proposal – Key Personnel Proposed

Form PER – 1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements for each of the positions listed in Section III (Evaluation and Qualification Criteria). The data on their experience should be supplied using the Form below for each candidate.

| S. No. | Position | Name | Qualification | Years of Experience | Years of Experience in proposed position | | | |
|-----------|--------------------------------------------|------|---------------|------------------------|---------------------------------------------|--------------------|---------|-------|
| | | | | | Road * works | Building* works | Others* | Total |
| | | | | | | | | |
| | <i>[Environmental Specialist#]</i> | | | | | | | |
| | <i>[Health and Safety Specialist#]</i> | | | | | | | |
| | <i>[Social Specialist#]</i> | | | | | | | |
| | | | | | | | | |

(* Modify this as appropriate to suit the works for which bids are invited,
As listed in Section III)

Appendix to Technical Part ... Schedule – F

Form PER – 2: Resume of Proposed Personnel

The Bidder shall provide all the information requested below. Fields with asterisk (*) shall be used for evaluation.

| | | |
|-----------------------|-----------------------------|---------------------------------------|
| Position* | | |
| Personnel information | Name * | Date of birth |
| | Professional qualifications | |
| Present employment | Name of Employer | |
| | Address of Employer | |
| | Telephone | Contact (manager / personnel officer) |
| | Fax | E-mail |
| | Job title | Years with present Employer |

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

| From* | To* | Company, Project, Position, and Relevant Technical and Management Experience* |
|-------|-----|-------------------------------------------------------------------------------|
| | | |
| | | |
| | | |

Declaration

I, the undersigned Key Personnel, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Bid:

| Commitment | Details |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Commitment to duration of contract: | <i>[insert period (start and end dates) for which this Key Personnel is available to work on this contract]</i> |
| Time commitment: | <i>[insert the number of days/week/months/that this Key Personnel will be engaged]</i> |

I understand that any misrepresentation or omission in this Form may:

- (a) be taken into consideration during Bid evaluation;
- (b) my disqualification from participating in the Bid;
- (c) my dismissal from the contract.

Name of Key Personnel: *[insert name]*

Signature: _____ Date: (day month year): _____

Countersignature of authorized representative of the Bidder: Signature: _____

Date: (day month year): _____

Appendix to Technical Part ... Schedule – G

Technical Proposal – Sub Contracting & JV

[Insert proposal of sub-contracting elements of works amounting to more than 10% of the bid price for each element and indicate the name of the sub-contractor, its qualifications and experiences to execute that element satisfactorily]

| Form SC- Sub Contracting | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------|
| SCHEDULE OF SUBCONTRACTORS | | | | |
| Item | Element of work | % of bid price | Name and address of sub-contractor | Qualification and experience of sub-contractor on similar works of the elements executed |
| | | | | |
| <p>The Bidder shall enter in this schedule a list of the major sections and appropriate value of the work for which he proposes to use subcontractors <i>[for those costing more than 10% of the bid price for each element]</i>, together with the names, addresses and experiences of the proposed subcontractors.</p> <p>The capability of the sub-contractor will also be assessed (on the same lines as for the main Contractor) before according approval to him.</p> <p><i>(Work should not be split into small parts and sub-contracted; but, sub-contracting specialized elements of works is acceptable).</i></p> | | | | |

Appendix to Technical Part ... Schedule – H

ESHS Management Strategies and Implementation Plans

(ESHS-MSIP)

The Bidder shall submit comprehensive and concise Environmental, Social, Health and Safety Management Strategies and Implementation Plans (ESHS-MSIP) as required by ITB 11.2 (j) of the Bid Data Sheet. These strategies and plans shall describe in detail the actions, materials, equipment, management processes etc. that will be implemented by the Contractor, and its subcontractors.

In developing these strategies and plans, the Bidder shall have regard to the ESHS provisions of the contract including those as may be more fully described in the Works Requirements described in Section VII.

Appendix to Technical Part Schedule – I

Code of Conduct: (ESHS)

Environmental, Social, Health and Safety

The Bidder shall submit the Code of Conduct that will apply to the Contractor's employees and subcontractors as required by ITB 11.2 (j) of the Bid Data Sheet. The Code of Conduct shall ensure compliance with the ESHS provisions of the contract, including those as may be more fully described in the Works Requirements described in Section VII.

In addition, the Bidder shall submit an outline of how this Code of Conduct will be implemented. This will include: how it will be introduced into conditions of employment/engagement, what training will be provided, how it will be monitored and how the Contractor proposes to deal with any breaches.

Appendix to Technical Part

Form-ELI -1.1: Bidder Information Form

Date: *[insert day, month, year]*

NCB No. and title: *[insert NCB number and title]*

Page *[insert page number]* of *[insert total number]* pages

| 1.1 Bidder Information | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Bidder's legal name | | | |
| In case of JV, legal name of each member | | | |
| 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> <ol style="list-style-type: none"> 1. In case of single entity, articles of incorporation or constitution of the legal entity names above, in accordance with ITB 4.1 and 4.3. 2. Authorization to represent the firm or JV named in above, in accordance with ITB 20.2. 3. In case of JV, letter of intent to form JV or JV agreement: in accordance with ITB 4.1 read with BDS 4. In case of government-owned entity, documents establishing legal and financial authority and compliance with the principles of commercial law in accordance with ITB 4.5 read with Sub-clause 2.1.4 of Qualification Criteria. 5. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. | | | |

| DETAILS OF PARTICIPATION IN THE JOINT VENTURE | | | |
|--------------------------------------------------------------------------|---------------------------|----------|----------|
| PARTICIPATION DETAILS | FIRM 'A' (Lead Member) | FIRM 'B' | FIRM 'C' |
| Financial | | | |
| Name of the Banker(s) | | | |
| Planning | | | |
| Construction Equipment | | | |
| Key Personnel | | | |
| Execution of Work (Give details on proposed contribution of each) | | | |
| The Joint Venture should indicate the details of participation as above. | | | |

Appendix to Technical Part

Form-ELI -1.2: JV Information Form & 1.2 A Specialized Subcontractor's

(Where permitted as per BDS ITB 4.1)

Each member of a JV must fill in this form

Date: *[insert day, month, year]*

NCB No. and title: *[insert NCB number and title]*

Page *[insert page number]* of *[insert total number]* pages

| JV/Specialist Subcontractor Information | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|-----------------------|
| Bidder's legal name | | | |
| JV Member's legal name | | | |
| JV Member's country of constitution | | | |
| JV Member's year of constitution | | | |
| JV Member's legal address in country of constitution | | | |
| JV Member's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address) | | | |
| <p>Attached are copies of the following original documents.</p> <ol style="list-style-type: none"> 1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 read with BDS. 2. Authorization to represent the firm names above, in accordance with ITB 20.2. 3. In the case of government-owned entity, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB Sub-Clause 4.5 read with Sub-Clause 2.1.4 of Qualification Criteria. 4. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. | | | |
| Bidder's legal name: | | | |
| Specialized Subcontractor's legal name: | | | |
| Specialized Subcontractor's country of registration: | | | |
| Specialized Subcontractor's year of constitution: | | | |
| Specialized Subcontractor's legal address in country of constitution: | | | |
| Specialized Subcontractor's authorized representative information | | | |
| Name: _____ | | | |
| Address: _____ | | | |
| Telephone/Fax | numbers: | _____ | E-mail address: _____ |
| <p>Attached are copies of original documents of</p> <p><input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4.</p> <p><input type="checkbox"/> Authorization to represent the Specialized Subcontractor.</p> | | | |

Appendix to Technical Part

Form CON – 2

Historical Contract Non-Performance, Pending Litigation and Litigation History

[The following table shall be filled in for the Bidder and for each member of a Joint Venture]

Bidder's Name: *[insert full name]* Date: *[insert day, month, year]*
 Joint Venture Party Name: *[insert full name]*
 NCB No. and title: *[insert NCB number and title]*
 Page *[insert page number]* of *[insert total number]* pages

| Non-Performed Contracts in accordance with Section III, Qualification Criteria and Requirements | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <input type="checkbox"/> Contract non-performance did not occur during the <i>(number)</i> years specified in Section III, Qualification Criteria and Requirements, Sub-Factor 2.2.1. | | | |
| <input type="checkbox"/> Contract(s) not performed during the <i>(number)</i> of years specified in Section III, Qualification Criteria and Requirements, requirement 2.2.1 | | | |
| Year | Non-performed portion of contract | Contract Identification | Total Contract Amount (in Indian Rupees) |
| <i>[insert year]</i> | <i>[insert amount and percentage]</i> | Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for non-performance: <i>[indicate main reason(s)]</i> | <i>[insert amount]</i> |
| Pending Litigation, in accordance with Section III, Qualification Criteria and Requirements | | | |
| <input type="checkbox"/> No pending litigation in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.2.3. | | | |
| <input type="checkbox"/> Pending litigation in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.2.3 as indicated below. | | | |

| Year of dispute | Amount in dispute (Rupees) | Contract Identification | Total Contract Amount (Rupees) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <i>[insert year]</i> | <i>[insert amount]</i> | Contract Identification: <i>[indicate complete contract name, number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate “Employer” or “Contractor”]</i> Status of dispute: <i>[Indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]</i> | <i>[insert amount]</i> |
| Litigation History in accordance with Section III, Evaluation and Qualification Criteria <input type="checkbox"/> No litigation history in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.2.4. <input type="checkbox"/> Litigation history in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.2.4 as indicated below. | | | |
| Year of award | Outcome as percentage of Net Worth | Contract Identification | Total Contract Amount (Rupees) |
| <i>[insert year]</i> | <i>[insert percentage]</i> | Contract Identification: <i>[indicate complete contract name, number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate “Employer” or “Contractor”]</i> Reason(s) for Litigation and award decision <i>[indicate main reason(s)]</i> Status of dispute: <i>[Indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]</i> | <i>[insert amount]</i> |

Appendix to Technical Part

Form CON – 3: Environmental, Social, Health, and Safety Performance Declaration

[The following table shall be filled in for the Bidder, each member of a Joint Venture and each Specialized Subcontractor]

Bidder's Name: _____

Joint Venture Member's or Specialized Subcontractor's Name: _____

NCB No. and title: _____

Page _____ of _____ pages

| Environmental, Social, Health, and Safety Performance Declaration in accordance with Section III, Qualification Criteria, and Requirements | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <input type="checkbox"/> No suspension or termination of contract: An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental, Social, Health, or Safety (ESHS) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.2.5. | | | |
| <input type="checkbox"/> Declaration of suspension or termination of contract: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental, Social, Health, or Safety (ESHS) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.2.5. Details are described below: | | | |
| Year | Suspended or terminated portion of contract | Contract Identification | Total Contract Amount (Rs.) |
| <i>[insert year]</i> | <i>[insert amount and percentage]</i> | Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for suspension or termination: <i>[indicate main reason(s) e.g. for GBV/ SEA breaches]</i> | <i>[insert amount]</i> |
| ... | ... | <i>[list all applicable contracts]</i> | ... |
| Performance Security called by an employer(s) for reasons related to ESHS performance | | | |
| Year | Contract Identification | | Contract Amount (Rs.) |
| <i>[insert year]</i> | Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for suspension or termination: <i>[indicate main reason(s) e.g. for GBV/ SEA breaches]</i> | | <i>[insert amount]</i> |

Appendix to Technical Part .. Form FIN – 2.3.1 to 2.3.3

| | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------|--------|-------|--------|
| Financial Situation and Performance | | | | | | |
| Bidder's Name | | [insert full name] | | | | |
| Date: | | [insert day, month, year] | | | | |
| Joint Venture Member Name | | [insert full name]: | | | | |
| NCB No. and title | | [insert NCB number and title] | | | | |
| Page... | | [insert page number] of [insert total number] pages | | | | |
| 1. Financial data: - [The following table shall be filled in for the Bidder and for each member of a Joint Venture] | | | | | | |
| Type of Financial information in (INR) | | Historic information for previous [insert number] years, [insert in words] (amount in currency, | | | | |
| | | Year 1 | Year 2 | Year 3 | Year4 | Year 5 |
| Statement of Financial Position (Information from Balance Sheet) | | | | | | |
| Total Assets | (TA) | | | | | |
| Total Liabilities | (TL) | | | | | |
| Total Equity/Net Worth | (NW) | | | | | |
| Current Assets | (CA) | | | | | |
| Current Liabilities | (CL) | | | | | |
| Working Capital | (WC) | | | | | |
| Information from Income Statement | | | | | | |
| Total Revenue | (TR) | | | | | |
| Profits Before Taxes | (PBT) | | | | | |
| Cash Flow Information | | | | | | |
| Cash Flow from Operating Activities | | | | | | |
| This information should be extracted from the Annual Financial Statements/ Balance sheets, which should be enclosed. Year 1 will be the latest year for which audited financial statements are available. Year 2 shall be the year immediately preceding year 1 and year 3 shall be the year immediately preceding Year 2. | | | | | | |
| 2. Sources of Finance: [The following table shall be filled in for the Bidder and for each member of a Joint Venture] | | | | | | |
| Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments. | | | | | | |
| | No. | Source of finance | Amount Equivalent INR | | | |
| | 1 | | | | | |
| | 2 | | | | | |
| 3. Financial documents : The Bidder and its parties shall provide copies of financial statements for [number] years pursuant Section III, Qualifications Criteria and Requirements, Sub-factor 3.1. The financial statements shall: | | | | | | |
| (a) Reflect the financial situation of the Bidder or in case of JV member, and not an affiliated entity (such as parent company or group member). | | | | | | |
| (b) Be independently audited or certified in accordance with local legislation. | | | | | | |
| (c) Be complete, including all notes to the financial statements. | | | | | | |
| (d) Correspond to accounting periods already completed and audited. | | | | | | |
| Attached are copies of financial statements ¹¹ for the [number] years required above; and complying with the requirements | | | | | | |

¹¹ If the most recent set of financial statements is for a period earlier than 12 months from the date of Bid, the reason for this should be justified.

| | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------|---------------|---------------|---------------|--------------------------|----------------|
| Form FIN 3.2 JOINT VENTURE | | | | | | | |
| Names of all partners of a joint-venture | | | | | | | |
| 1. Partner in charge | | | | | | | |
| 2. Partner | | | | | | | |
| 3. Partner | | | | | | | |
| Total value of annual dredging turnover, in terms of work billed to clients, in US\$ equivalent, converted at the rate of exchange at the end of the period reported: | | | | | | | |
| Annual Turnover Data (construction only; INR equivalent)* | | | | | | | |
| Partner | Form 2 page no. | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Average |
| 1. Partner in charge | | | | | | | |
| 2. Partner | | | | | | | |
| 3. Partner | | | | | | | |
| TOTALS | | | | | | | |
| Name and address of Bankers to the Joint Venture | | | | | | | |
| * to be certified by a Chartered Accountant or a Professional with an equivalent internationally recognized title. | | | | | | | |
| Form FIN-3.3 Financial Resources | | | | | | | |
| Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Section III, Evaluation and Qualification Criteria along with supporting documents. | | | | | | | |
| Source of financing | | | | | | Amount (US\$ equivalent) | |
| 1. | | | | | | | |
| 2. | | | | | | | |

Appendix to Technical Part

FORM FIN – 3.1(A)

FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CASH FLOW

[To be given from a Nationalized or Scheduled Bank in India]

Clause 2.3.1(b) of Section II – Qualification Criteria

(1) AVAILABILITY OF CASH FLOW (WORKING CAPITAL)

This is to certify that M/s. _____ is a reputed company with a good financial standing.

If the contract for the works, namely _____ [funded by the World Bank] is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. _____ to meet their capital requirements for executing the above contract.

-- Sd. --

Name of Bank Manager
Senior Bank Manager
Address of the Bank

*** Change the text as follows for Joint venture:**

This is to certify that M/s. who has formed a JV with M/s. and M/s. for participating in this bid, is a reputed company with a good financial standing.

If the contract for the work, namely [funded by the World Bank] is awarded to the above Joint Venture, we shall be able to provide overdraft/credit facilities to the extent of Rs. to meet the working capital requirements for executing the above contract.

[This should be given by the JV members in proportion to their financial participation.]

| | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------|---------------|---------------|---------------|----------------|
| Form FIN –2.3.1 to 2.3.3 | | | | | | | |
| Average Annual Dredging Turnover ... Form FIN - 3.2 | | | | | | | |
| <i>[The following table shall be filled in for the Bidder and for each member of a Joint Venture]</i> | | | | | | | |
| Bidder's Name | | [insert full name] | | | | | |
| Date: | | [insert day, month, year] | | | | | |
| Joint Venture Member Name | | [insert full name]: | | | | | |
| NCB No. and title | | [insert NCB number and title] | | | | | |
| Page... | | [insert page number] of [insert total number] pages | | | | | |
| <i>[Identify contracts that demonstrate continuous construction work over the past [number] years pursuant to Section III, Qualification Criteria and Requirements, Sub-Factor 4.1. List contracts chronologically, according to their commencement (starting) dates.]</i> | | | | | | | |
| Annual turnover data (construction only) | | | | | | | |
| Year | Amount Currency | | | | | INR | |
| [calendar year] | [insert amount and indicate currency] and Source of Figures and attach the relevant documents | | | | | | |
| 1. YEAR 2021 | | | | | | | |
| 2. YEAR 2010 | | | | | | | |
| 3. YEAR 2019 | | | | | | | |
| 4. YEAR 2018 | | | | | | | |
| 5. YEAR 2017 | | | | | | | |
| <i>Annual construction turnover calculated as total certified payments received for work in progress or completed, for 5 years. Specified in Section III, Qualification Criteria and Requirements, Sub-Factor 2.3.2. This should be certified by a Chartered Accountant</i> | | | | | | | |
| Names of all members of a joint venture | | | | | | | |
| 1. Member in charge | | | | | | | |
| 2. Member | | | | | | | |
| 3. Member | | | | | | | |
| Total value of annual construction turnover, in terms of work billed to clients, in Rupees | | | | | | | |
| Annual Turnover Data (construction only; in Rupees *) | | | | | | | |
| Member | Form 2 page no. | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Average |
| 1. Member in charge | | | | | | | |
| 2. Member | | | | | | | |
| 3. Member | | | | | | | |
| TOTALS | | | | | | | |
| Name and address of Bankers to the Joint Venture | | | | | | | |
| Provide details regarding financial responsibility and participation (percentage share in the total) of each firm in the Joint Venture. Attach a Memorandum of Understanding for the Proposed Agreement of joint Venture which should lay down responsibility regarding work and financial arrangements in respect of each of the firm in the Joint Venture (Refer also ITB Clause 4.1). | | | | | | | |
| * To be certified by a chartered accountant | | | | | | | |

Appendix to Technical Part

| | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Form EXP – 2.4.1 General Dredging Experience <i>[The following table shall be filled in for the Bidder and in the case of a JV Bidder, each Member]</i> | | | |
| Bidder's Name | | <i>[insert full name]</i> | |
| Date: | | <i>[insert day, month, year]</i> | |
| Joint Venture Member Name | | <i>[insert full name]:</i> | |
| NCB No. and title | | <i>[insert NCB number and title]</i> | |
| Page... | | <i>[insert page number] of [insert total number] pages</i> | |
| <i>[Identify contracts that demonstrate continuous construction work over the past [number] years pursuant to Section III, Qualification Criteria and Requirements, Sub-Factor 4.1. List contracts chronologically, according to their commencement (starting) dates.]</i> | | | |
| Starting Year | Ending Year | Contract Identification along with Supporting Documents including Completion Certificates | Role of Bidder |
| <i>[indicate year]</i> | <i>[indicate year]</i> | Contract name: <i>[insert full name]</i> Brief Description of the Works performed by the Bidder: <i>[describe works performed briefly]</i> Amount of contract: <i>[insert amount in currency, mention currency used, exchange rate and US\$ equivalent*]</i> Name of Employer: <i>[indicate full name]</i> Address: <i>[indicate street/number/town or city/country]</i> | <i>[insert "Prime Contractor" or "JV Member" or "Sub-contractor" or "Management Contractor"]</i> |
| | | Contract name: <i>[insert full name]</i> Brief Description of the Works performed by the Bidder: <i>[describe works performed briefly]</i> Amount of contract: <i>[insert amount in currency, mention currency used, exchange rate and US\$ equivalent*]</i> Name of Employer: <i>[indicate full name]</i> Address: <i>[indicate street/number/town or city/country]</i> | <i>[insert "Prime Contractor" or "JV Member" or "Sub-contractor" or "Management Contractor"]</i> |
| | | Contract name: <i>[insert full name]</i> Brief Description of the Works performed by the Bidder: <i>[describe works performed briefly]</i> Amount of contract: <i>[insert amount in currency, mention currency used, exchange rate and US\$ equivalent*]</i> Name of Employer: <i>[indicate full name]</i> Address: <i>[indicate street/number/town or city/country]</i> | <i>[insert "Prime Contractor" or "JV Member" or "Sub-contractor" or "Management Contractor"]</i> |

Form EXP – 2.4.2(a)**Specific Dredging and Contract Management Experience**

[The following table shall be filled in for contracts performed by the Bidder, each member of a Joint Venture, and Specialized Sub-contractors]- along with Supporting Documents including Completion Certificates

| | | | | |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------|
| Bidder's Name | <i>[insert full name]</i> | | | |
| Date: | <i>[insert day, month, year]</i> | | | |
| Joint Venture Member Name | <i>[insert full name]:</i> | | | |
| NCB No. and title | <i>[insert NCB number and title]</i> | | | |
| Page... | <i>[insert page number] of [insert total number] pages</i> | | | |
| Similar Contract No. <i>[insert number] of [insert number of similar contracts required]</i> | Information | | | |
| Contract Identification | <i>[insert contract name and number, if applicable]</i> | | | |
| Award date | <i>[insert day, month, year]</i> | | | |
| Completion date | <i>[insert day, month, year]</i> | | | |
| Role in Contract <i>[check the appropriate box]</i> | Prime Contractor <input type="checkbox"/> | Member in JV <input type="checkbox"/> | Management Contractor <input type="checkbox"/> | Sub-contractor <input type="checkbox"/> |
| Total Contract Amount | <i>[insert total contract amount in local currency]</i> | | US\$ <i>[insert Exchange rate and total contract amount in US\$ equivalent] *</i> | |
| If member in a JV or sub-contractor, specify participation in total Contract amount | <i>[insert a percentage amount]</i> | <i>[insert total contract amount in local currency]</i> | <i>[insert exchange rate and total contract amount in US\$ equivalent] *</i> | |
| Employer's Name: | <i>[insert full name]</i> | | | |
| Address: | <i>[indicate street / number / town or city / country]</i> | | | |
| Telephone/fax number | <i>[insert telephone/fax numbers, including country and city area codes]</i> | | | |
| E-mail: | <i>[insert e-mail address, if available]</i> | | | |

| | |
|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Form EXP – 2. 4.2 (a) (cont.) | |
| Specific Dredging and Contract Management Experience (cont.) | |
| Bidder's Name | <i>[insert full name]</i> |
| Date: | <i>[insert day, month, year]</i> |
| Joint Venture Member Name | <i>[insert full name]:</i> |
| NCB No. and title | <i>[insert NCB number and title]</i> |
| Page... | <i>[insert page number] of [insert total number] pages</i> |
| | |
| Similar Contract No. <i>[insert number] of [insert number of similar contracts required]</i> | Information |
| Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III: | |
| 1. Amount | <i>[insert amount in local currency, exchange rate, US\$ in words and in Figures]</i> |
| 2. Physical size of required works items | <i>[insert physical size of items]</i> |
| 3. Complexity | <i>[insert description of complexity]</i> |
| 4. Methods/Technology | <i>[insert specific aspects of the methods/technology involved in the contract]</i> |
| 5. Construction rate for key activities | <i>[insert rates and items]</i> |
| 6. Other Characteristics | <i>[insert other characteristics as described in Section X, Scope of Works]</i> |

| | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------|
| Form EXP – 2.4.2(b) | | | | |
| Dredging Experience in Key Activities | | | | |
| Bidder's Name | <i>[Insert full Name]</i> | | | |
| Date: | <i>[Insert day, month, year]</i> | | | |
| Joint Venture Member Name | <i>[Insert full Name]:</i> | | | |
| NCB No. and title | <i>[Insert NCB number and title]</i> | | | |
| Page... | <i>[Insert page number] of [insert total number] pages</i> | | | |
| All Sub-contractors for key activities must complete the information in this form as per ITB 5.6 and Section III, Qualification Criteria and Requirements, Clause 4.2. along with Supporting Documents including Completion Certificates | | | | |
| 1. Key Activity No. One: <i>[insert brief description of the Activity, emphasizing its specificity]</i> | | | | |
| Total Quantity of Activity under the contract: | | | | |
| Information | | | | |
| Contract Identification | <i>[insert contract name and number, if applicable]</i> | | | |
| Award date | <i>[insert day, month, year]</i> | | | |
| Completion date | <i>[insert day, month, year]</i> | | | |
| Role in Contract <i>[check the appropriate box]</i> | Prime Contractor <input type="checkbox"/> | Member in JV <input type="checkbox"/> | Management Contractor <input type="checkbox"/> | Sub-contractor <input type="checkbox"/> |
| Total Contract Amount | <i>[insert total contract amount in contract currency(ies)]</i> | | US\$ <i>[insert exchange rate and total contract amount in US\$ equivalent]</i> | |
| Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year <i>[Insert extent of participation indicating actual quantity of key activity successfully completed in the role performed]</i> | Total quantity in the contract (i) | Percentage participation (ii) | Actual Quantity Performed (i) x (ii) | |
| Year 1 | | | | |
| Year 2 | | | | |
| Year 3 | | | | |
| Year 4 | | | | |
| Year 5 | | | | |
| Employer's Name: | <i>[insert full name]</i> | | | |
| Address: | <i>[indicate street / number / town or city / country]</i> | | | |
| Telephone/fax number | <i>[insert telephone/fax numbers, including country and city area codes]</i> | | | |
| E-mail: | <i>[insert e-mail address, if available]</i> | | | |

Appendix to Technical Part

Form for Current Contract Commitments/Works in Progress

Bidders and each member to a JV should provide information on their 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.

(A) Existing commitments and on-going works:

| Description of Work | Place & State | Contract No. & Date | Name and Address of Employer | Value of Contract (Rs. equivalent in million) | Stipulated period of completion | Value of works ¹² remaining to be completed (Rs. equivalent in million) | Anticipated date of completion | Average Monthly Invoicing Over Last Six Months (Rs./month) Equivalent in millions) |
|---------------------|---------------|---------------------|------------------------------|-----------------------------------------------|---------------------------------|------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

(B) Works for which bids already submitted and likely to be awarded – expected additional commitment.

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---------------------|---------------|------------------------------|------------------------------------------------------|---------------------------------|--------------------------------|-----------------|
| Description of Work | Place & State | Name and Address of Employer | Estimated value of Works (Rs. equivalent in million) | Stipulated period of completion | Date when decision is expected | Remarks, if any |
| | | | | | | |
| | | | | | | |
| | | | | | | |

¹²Attach certificate(s) from the Engineer(s)-in-Charge.

| | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------|----------------|
| Form EXP – 5.0 Quality Requirements (Sub-factor of 2.4.3 of Section III) | | | | | |
| Bidder's Name | | <i>[insert full name]</i> | | | |
| Date: | | <i>[insert day, month, year]</i> | | | |
| Joint Venture Member Name | | <i>[insert full name]:</i> | | | |
| NCB No. and title | | <i>[insert NCB number and title]</i> | | | |
| Page... | | <i>[insert page number] of [insert total number] pages</i> | | | |
| To indicate the details of the Quality Requirements Change of information after Bid Submission & Opening date shall not be allowed. | | | | | |
| 5.1 | ISO 9001-2008/2015 Quality management system requirements | Quality management certificate issued by an international standards organization | Must meet requirement | Valid ISO 9001 Certification. | Yes / No - ref |
| 5.3 | OHSAS 18001 - Occupational Health and Safety Assessment Series | Relevant OHSAS certificate and Experience in occupational health and safety management over the last 2 years, | Must meet requirement | Valid OHSAS certificate. | |
| 5.4 | ISO 14001:2004/2015 Environmental Management systems | Relevant Environmental management certificate and experience with environmental management systems over the last 2 years, | Must meet requirement | Valid ISO 14001:2004/2015 certificate. | |

Form EXP – 6.4

Detailed Dredging Management Plan

Approach & Methodology

| | |
|---------------------------|------------------------------------------------------------|
| Bidder's Name | <i>[insert full name]</i> |
| Date: | <i>[insert day, month, year]</i> |
| Joint Venture Member Name | <i>[insert full name]:</i> |
| NCB No. and title | <i>[insert NCB number and title]</i> |
| Page... | <i>[insert page number] of [insert total number] pages</i> |

To indicate how various activities which will be carried out, to meet the requirements Laid down at Appendix A to the Tender documents / Contract

SCHEDULE E

Dredging Methodology¹³

(a) Contractor's Statement of Work Methods

To demonstrate a clear understanding of the requirements of the Contract, Bidders shall provide in the form of a narrative descriptions, sketches and drawings, how the works shall be undertaken.

The Statement of Work Methods shall demonstrate the Bidders capability to define, optimize and carry out on a timely basis the physical interventions detailed in the scope of requirements specified in Section VI.

The Statement of Work Methods shall include a mobilization and execution plan that details how the bidder will, **on waterway stretch**, carry out on a timely basis the following:

Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga) including River Conservancy and Channel marking

- ii. An outline proposal on how the Contractor shall minimize environmental impacts especially to sensitive and critical areas including but not limited to reed lands, mud flats, mangrove forests and migratory bird habitats taking into account:
- iii. The requirement for dredging sediment volumes in shallow waterways; placing dredged materials in-stream or in-river; and, early detection and quantification of hazardous sediment and its removal; and,
- iv. The requirement to minimize noise, water and air pollution from its own operations.
- vii. An outline Quality Assurance Plan; and,
- viii. A Health and Safety Plan specific to the proposed works.

(b) Contractor's Work Program: A Work Program compiled on a project management software (like MS Project, Primavera or similar) which must clearly show the major project works proposed and the corresponding timeline with the following characteristics:

¹³ The Dredging Methodology included here is a SAMPLE taken from a specific project, and should be suitably modified as necessary. It should correspond to the construction methodology specified in Section III Evaluation and Qualification Criteria.

- Show work stages (Mobilization, Survey, Dredging / Bandalling Work, Erection and Maintenance of Navigation Aids, and Demobilization, etc.) and BOQ Items with the corresponding timeline;
 - Show the leading, lagging and critical activities, with linkages to related activities, milestones, key personnel in charge, etc.; and
 - Resources (equipment, material, personnel, etc.) plan to achieve the Work Program.
- (c) **Site Organization and Communications Plans:** that clearly provide:
- An overall organization chart;
 - A site organization chart;
 - Preliminary layout of the Contractor's facilities and equipments;
 - Internal Communications Plan;
 - External Communication Plan; and
 - Navigational protocol to assure free passage for ships during dredging or other works.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| Form EXP – 6.0 & 6.5 Detailed Dredger Deployment Plan w.r.t Detailed Dredging Management Plan Approach & Methodology | |
| Bidder's Name | <i>[insert full name]</i> |
| Date: | <i>[insert day, month, year]</i> |
| Joint Venture Member Name | <i>[insert full name]:</i> |
| NCB No. and title | <i>[insert NCB number and title]</i> |
| Page... | <i>[insert page number] of [insert total number] pages</i> |
| <p>To indicate how various Dredgers shall be deployed to meet the requirements explained at Dredging Management Plan and as Laid down at Appendix A to the Tender documents / Contract</p> | |
| | |

| Form EXP – 6.6 List of Equipment and Availability Plan | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------|----------|-----------|------------------------------------------------------------|------------------|----------------------------------------------------------------|
| Bidder's Name | | | <i>[insert full name]</i> | | | | | | |
| Date: | | | <i>[insert day, month, year]</i> | | | | | | |
| Joint Venture Member Name | | | <i>[insert full name]:</i> | | | | | | |
| NCB No. and title | | | <i>[insert NCB number and title]</i> | | | | | | |
| Page... | | | <i>[insert page number] of [insert total number] pages</i> | | | | | | |
| Bidder to provide the a. List of Tools and plants Available with the bidder details to be furnished in the table under b. List of Tools and plants Available on Hire In case of Hire A JV agreement with the agency along with the list of equipment being Hired. c. List of Tools and plants Likely to be Procured: Proof or Intent along with expected delivery period from Award date. | | | | | | | | | |
| It may be noted that the Cutter Suction Dredger (CSD) can be either non-propelled or self-propelled. However, rated dredging capacity of each of these shall not be less than 250 cum/hour of solids. The dredgers should be accompanied with all the supporting vessels for dredging works as well as for shoal-to-shoal movement of dredging fleet and personnel. | | | | | | | | | |
| Sl no | Name of the Dredger / Craft Equipment / Land Equipment proposed - with Registration details wherever applicable & fitness Certificate | Technical details i.e., a. Type, b. Size c. Rated Capacity d. year of Manufacture e. Registration details f. details of pipe lines. g. Survey Certificates. i. other Machineries included | Rated Capacity | Out Put expected (Cubic metre of solids at situ) to be achieved during operation | | | Whether a. OWNED b. to be hired c. to be procured | Present Location | a. Dry Dock Details b. River/Sea Worthiness Certificate |
| | | | | Per hour | Per week | Per month | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Bidders to Note: - The documentary evidence to be submitted by the Bidders for the proposed Dredgers & other Equipments to be deployed should indicate the Name, Capacity with Registration where ever applicable, Rated Capacity; Technical Details, year of Manufacture; Survey Certificates; Details of Previous Dry Dock; River Worthiness Certificate from certifying Authority. As per Format A

- The Bidders to ensure that fitness certificate of the equipments like Dredgers & Survey Vessels should be duly certified by an authorized certifying agency at the time of Bidding.
- Successful Contractor shall to produce the fitness certificate of the equipments like Tug Boats, Accommodation Boat duly certified by an authorized certifying agency at the time of Bidding.

SCHEDULE D

Contractor's Equipment

Bidders shall provide¹⁴ a list of the type and quantity of equipment needed to carry out on a timely basis the physical interventions detailed in the scope of requirements specified in Section VI. Choice in the type and quantity of equipment shall take into account the scope of the physical interventions required for the project waterways. In providing a list of type and quantity of equipment, Bidders shall specifically:

¹⁴ This is a SAMPLE taken from a specific project, and should be suitably modified as necessary

Demonstrate that any equipment selected for works on more than one waterways route must meet the works requirements of all specified routes on a timely basis, taking into account: equipment performance specifications; the geographical location of such other route or routes and time for internal movements (transport); IWT classification characteristics (i.e. channel depth and width); environmental and social mitigation needs; and any other limiting conditions, including but not limited to physical and weather limiting conditions;

Demonstrate that equipment selected is designed, built, constructed, manned, operated and certified for marine and environmental conditions that can be expected on each waterways route or parts thereof. For the avoidance of doubt, Bidders shall provide documentary evidence that all equipment is both licensed and classed to operate in the waterways (river) conditions, including but not limited to wind, wave, swell, current and tidal stream conditions where development and maintenance dredging, aid to navigation installation and maintenance, survey services and environmental monitoring are required.

A separate Form shall be prepared for each item of equipment listed (with a current new purchase price exceeding US\$ 0.5 m)¹⁵, or for alternative equipment proposed by the Bidder. The Bidder shall provide all the information requested below, to the extent possible. Fields with asterisk (*) shall be used for evaluation.

| <i>Sl.no</i> | <i>Name of dredger / Equipment /Machinery /plants</i> | <i>Qty.</i> | <i>Description, Size, Capacity</i> | <i>Date of Purchase / Age</i> | <i>Present Location</i> |
|-----------------------------------------|---------------------------------------------------------------|-------------|--------------------------------------------|---------------------------------------|-------------------------|
| | | | | | |
| <i>TO BE HIRED</i> | | | | | |
| | | | | | |
| | | | | | |
| <i>TO BE arranged through JV</i> | | | | | |
| | | | | | |
| | | | | | |
| <i>TO BE PROCURED</i> | | | | | |
| | | | | | |
| <i>Signature of the Bidder</i> | | | | | |

¹⁵ Threshold of US\$ 0.5 m is only a Sample value, and should be modified as considered necessary

Form EXP – 2.5**Details of Deployment of Manpower**

(Main Bidder with CV's)

| Bidder's Name | <i>[insert full name]</i> | | | |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Date: | <i>[insert day, month, year]</i> | | | |
| JV - Member Name | <i>[insert full name]:</i> | | | |
| NCB No. and title | <i>[insert NCB number and title]</i> | | | |
| Page... | <i>[insert page number] of [insert total number] pages</i> | | | |
| <p>To indicate the details of the Manpower to be deployed for carrying out the assignment along with their CV's</p> | | | | |
| <i>Sl.no</i> | <i>Position</i> | <i>Experience in yrs.</i> | <i>Details of Experience</i> | <i>CV Yes/no</i> |
| 1. | Contract / Project Manager | 7 years | Should have Bachelor's degree in Civil/Mechanical engineering and an experience of minimum of 10 years out of which at least 7 years shall be in managing projects of similar nature. Personnel must have experience in executing dredging projects. The age of the personnel as on the date of bid submission shall not be more than 50 years; | <i>MUST MEET REQUIREMENT</i> <i>YES – To be submitted at the time of Bid Submission.</i> |
| 2 | Surveyor | 3 years | Diploma in Civil Engineering / Mechanical Engineering / Surveying with 3 years' experience in Hydrographic Survey or Survey Recorder I/II in Hydrographic Survey | |
| 3 | Crew | | Must have inland vessel certification | |
| 4 | Details of the Sub- Contracting Agencies | | | |
| 5. | Dredge Master | 7 years | Must have 7 years of experience in dredging in rivers/canals/ports. | <i>Desirable at the time of Bid Submission</i> |
| 6. | Social Specialist | 3 years | Graduate or equivalent in social sciences with at least 3 years field experience. | |
| 7. | Environmental Expert | 3 years | Graduate in Environmental engineering/environmental sciences with at least 3 years field experience. | |
| 8. | Health & Safety Specialist | 3 years | Graduate in engineering/sciences with at least 3 years of experience in health and safety. Must have diploma/certification in health and safety. | |

| | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Resume of Proposed Personnel | | | |
| Form EXP – 6.7 & 6.8 Details of Deployment of Manpower ... contd... | | | |
| Position [#1]: [title of position from Form PER-1] | | | |
| Personnel information | Name: | | Date of birth: |
| | Address: | | E-mail: |
| | Professional qualifications: | | |
| | Academic qualifications: | | |
| | Language proficiency: [language and levels of speaking, reading and writing skills] | | |
| | Address of employer: | | |
| | Telephone: | | Contact (manager / personnel officer): |
| | Fax: | | |
| | Job title: | | Years with present employer: |
| | | | |
| Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project. | | | |
| Project | Role | Duration of involvement | Relevant experience |
| [main project details] | [role and responsibilities on the project] | [time in role] | [describe the experience relevant to this position] |
| | | | |
| | | | |
| Declaration | | | |
| I, the undersigned Key Personnel, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience. | | | |
| I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Bid: | | | |
| Commitment | | Details | |
| Commitment to duration of contract: | | [insert period (start and end dates) for which this Key Personnel is available to work on this contract] | |
| Time commitment: | | [insert the number of days/week/months/ that this Key Personnel will be engaged] | |
| I understand that any misrepresentation or omission in this Form may: | | | |
| (a) be taken into consideration during Bid evaluation; | | | |
| (b) my disqualification from participating in the Bid; | | | |
| (c) my dismissal from the contract. | | | |
| Name of Key Personnel: [insert name] | | Countersignature of authorized representative of the Bidder: | |
| Signature: _____ | | Signature: _____ | |
| Date: (day month year): _____ | | Date: (day month year): _____ | |

| Form EXP – 2.5 ... contd. Details of Sub- Contractors | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------|
| Bidder's Name | | <i>[insert full name]</i> | | |
| Date: | | <i>[insert day, month, year]</i> | | |
| Joint Venture Member Name | | <i>[insert full name]:</i> | | |
| NCB No. and title | | <i>[insert NCB number and title]</i> | | |
| Page... | | <i>[insert page number] of [insert total number] pages</i> | | |
| <p>To indicate the details of the Sub-Contractors likely to be engaged for this work Please note. Change of agency after Bid Submission & Opening date shall not be allowed.</p> | | | | |
| Sl.no | Name of the proposed Sub- Contractor | Years of Experience | Name of the Projects under taken as contractor or sub-contractor | Supporting Documents Order & experience copies |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

| Form CON – 3 ... Environmental, Social, Health and Safety Management Strategies and Implementation Plans Performance Declaration - (ESHS-MSIP) <i>[The following table shall be filled in for the Bidder, and each member of a Joint Venture and each Specialized Subcontractor]</i> | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Bidder's Name | <i>[insert full name]</i> | | |
| Date: | <i>[insert day, month, year]</i> | | |
| Joint Venture Member Name | <i>[insert full name]:</i> | | |
| NCB No. and title | <i>[insert NCB number and title]</i> | | |
| Page... | <i>[insert page number] of [insert total number] pages</i> | | |
| <p>The Bidder shall submit comprehensive and concise Environmental, Social, Health and Safety Management Strategies and Implementation Plans (ESHS-MSIP) as required by ITB 11.2 (i) of the Bid Data Sheet. These strategies and plans shall describe in detail the actions, materials, equipment, management processes etc. that will be implemented by the Contractor, and its subcontractors.</p> <p>In developing these strategies and plans, the Bidder shall have regard to the ESHS provisions of the contract including those as may be more fully described in the Works and Services Requirements described in Section VI.</p> | | | |
| Environmental, Social, Health, and Safety Performance Declaration in accordance with Section III, Qualification Criteria, and Requirements | | | |
| <input type="checkbox"/> No suspension or termination of contract: An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental, Social, Health, or Safety (ESHS) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.2.5. | | | |
| <input type="checkbox"/> Declaration of suspension or termination of contract: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental, Social, Health, or Safety (ESHS) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.2.5. Details are described below: | | | |
| Year | Suspended or terminated portion of contract | Contract Identification | Total Contract Amount (current value, currency, exchange rate and US\$ equivalent) |
| <i>[insert year]</i> | <i>[insert amount and percentage]</i> | Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for suspension or termination: <i>[indicate main reason(s) e.g. for GBV/ SEA breaches]</i> | <i>[insert amount]</i> |
| ... | ... | <i>[list all applicable contracts]</i> | ... |
| Performance Security called by an employer(s) for reasons related to ESHS performance | | | |
| Year | Contract Identification | | |
| <i>[insert year]</i> | Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for suspension or termination: <i>[indicate main reason(s) e.g. for GBV/ SEA breaches]</i> | | <i>[insert amount]</i> |

Appendix to Technical Part

Form EXP – 7.0

Forms for Personnel

| Item No. | Position/specialization required | Relevant academic qualifications <i>Bidder to provide the details at the time of bid Submission</i> | |
|----------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| | | Minimum years of relevant work experience | |
| 1 | Contract / Project Manager | Contract/Project Manager shall have a bachelor's degree in Civil/Mechanical engineering and an experience of minimum 10 years', out of which at least 7 years shall be in managing projects of similar nature. Personnel must have experience in executing dredging projects. The age of the personnel as on the date of bid submission shall not be more than 50 years; | |

Details of other Suitable Manpower / experts in the following specializations Desirable at the time of bidding.

| | | | |
|---|------------------------|-----------------------------------------------------------------------------------------------|---------|
| 2 | Surveyor | Diploma in Civil/Mechanical Engineering or Hydrographic Survey | 3 years |
| 3 | Dredger Master | Dredging experience in River / Canal / Port | 7 years |
| 4 | Social Expert | Graduate or equivalent in social sciences | 3 years |
| 5 | Environment Expert | Graduate in Environmental Engineering / Environmental Sciences | 3 years |
| 6 | Health & Safety Expert | Graduate in Engineering / Sciences and must have Diploma / Certification in health and safety | 3 years |

Form PER – 1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements for each of the positions listed in Section III (Evaluation and Qualification Criteria). The data on their experience should be supplied using the Form below for each candidate.

| S. No. | Position | Name | Qualification | Years of Experience | Years of Experience in proposed position | | | |
|--------|---------------------------------|------|---------------|---------------------|------------------------------------------|------------------|----------|-------|
| | | | | | Road * works | Building * works | Others * | Total |
| | [Environmental Specialist#] | | | | | | | |
| | [Health and Safety Specialist#] | | | | | | | |
| | [Social Specialist#] | | | | | | | |

| | | | | |
|----|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------|--|--|
| 1. | ¹⁶ Title of position: (Contractor's Representative) | | | |
| | Name of candidate: | | | |
| | Duration of appointment: | [insert the whole period (start and end dates) for which this position will be engaged] | | |
| | Time commitment: for this position: | [insert the number of days/week/months/ that has been scheduled for this position] | | |
| | Expected time schedule for this position: | [insert the expected time schedule for this position (e.g. attach high level Gantt chart)] | | |

(* Modify this as appropriate to suit the works for which bids are invited,
As listed in Section III)

¹⁶ As listed in Section III (Evaluation and Qualification criteria).

Appendix to Technical Part

Form PER – 2: Resume of Proposed Personnel

The Bidder shall provide all the information requested below. Fields with asterisk (*) shall be used for evaluation.

Position*

| | | |
|------------------------------|------------------------------------|----------------------------------------------|
| Personnel information | Name * | Date of birth |
| | Professional qualifications | |
| Present employment | Name of Employer | |
| | Address of Employer | |
| | Telephone | Contact (manager / personnel officer) |
| | Fax | E-mail |
| | Job title | Years with present Employer |

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

| From* | To* | Company, Project, Position, and Relevant Technical and Management Experience* |
|-------|-----|-------------------------------------------------------------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |

Declaration

I, the undersigned Key Personnel, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Bid:

| Commitment | Details |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Commitment to duration of contract: | <i>[insert period (start and end dates) for which this Key Personnel is available to work on this contract]</i> |
| Time commitment: | <i>[insert the number of days/week/months/that this Key Personnel will be engaged]</i> |

I understand that any misrepresentation or omission in this Form may:

- (a) be taken into consideration during Bid evaluation;
- (b) my disqualification from participating in the Bid;
- (c) my dismissal from the contract.

Name of Key Personnel: *[insert name]*

Signature: _____ Date: (day month year):----- **.Countersignature of authorized representative of the Bidder:**

Signature: _____ **Date: (day month year):** _____

Form EXP – 7**Code of Conduct****Environmental, Social, Health and Safety (ESHS)**

| | |
|---------------------------|------------------------------------------------------------|
| Bidder's Name | <i>[insert full name]</i> |
| Date: | <i>[insert day, month, year]</i> |
| Joint Venture Member Name | <i>[insert full name]:</i> |
| NCB No. and title | <i>[insert NCB number and title]</i> |
| Page... | <i>[insert page number] of [insert total number] pages</i> |

The Bidder shall submit the Code of Conduct that will apply to the Contractor's employees and subcontractors as required by ITB 11.2 (i) of the Bid Data Sheet. The Code of Conduct shall ensure compliance with the ESHS provisions of the contract, including those as may be more fully described in the Works and Services Requirements described in Section VI.

In addition, the Bidder shall submit an outline of how this Code of Conduct will be implemented. This will include: how it will be introduced into conditions of employment/engagement, what training will be provided, how it will be monitored and how the Contractor proposes to deal with any breaches.

Appendix to Technical Part

(Name of the Project)

(Declaration regarding tax/duty exemption for materials/construction equipment bought for the work)

(Bidder's Name and Address)

To:
(Name of the Employer & address)

Dear Sir:

Re: [Name of Work].....

Certificate for Import/Procurement of Goods/Construction Equipment
Government Order/Circular Number under which tax/duty Exemption is being sought: ...

1. We confirm that we are solely responsible for obtaining tax/duty waivers which we have considered in our bid and in case of failure to receive such waivers for reasons whatsoever, the Employer will not compensate us.
2. We are furnishing below the information required by the Employer for issue of the necessary certificates in terms of the Government of India's relevant Notifications.
3. The goods/construction equipment for which certificates are required are as under:

| Items (modify the list suitably for each specific work) | Make/ Brand Name | Capacity [where applicable] | Quantity | Value | State whether it will be procured locally or imported [if so from which country] | Remarks regarding justification for the quantity and their usage in works. |
|------------------------------------------------------------|------------------------|-----------------------------------|----------|-------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Dredging Equipment | | | | | | |
| | | | | | | |
| | | | | | | |

4. We agree that no modification to the above list is permitted after bids are opened.
5. We agree that the certificate will be issued only to the extent considered reasonable by the Employer for the work, based on the Bill of Quantities and the construction program and methodology as furnished by us alongwith the bid.
6. We confirm that the above goods and construction equipment will be exclusively used for the construction of the above work and the construction equipment will not be sold or otherwise disposed of in any manner for a period of five years from the date of acquisition.

Date: _____
Place: _____

(Signature) _____
(Printed Name) _____
(Designation) _____
(Common Seal) _____

[This certificate will be issued within 60 days of signing of contract and no subsequent changes will be permitted.]

* **Modify the above to suit the requirements given in Government of India's Notifications as current of date of bidding.**

Letter of Bid – Financial Part

To,

Date

Part No.....

Invitation for Bid No.....

Subject: - Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -I (River Ganga) including River Conservancy and Channel marking

We, the undersigned, hereby submit the second part of our Bid, the Bid Price and Bill of Quantities. This accompanies the Letter of Technical Part, In submitting our Bid, we make the following additional declarations

- (a) Our bid shall be valid for a period of _____ *[insert validity period as specified in ITB 18.1.]* 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;
- (b) The total price of our Bid, excluding any discounts offered in item (c) below is:
- In case of only one lot, total price of the Bid *[insert the total price of the bid in words and figures];*
 -In case of multiple lots, total price of each lot *[insert the total price of each lot in words and figures];*
 -In case of multiple lots, total price of all lots (sum of all lots) *[insert the total price of all lots in words and figures];*
- (c) The discounts offered and the methodology for their application are:
- (i) The discounts offered are: *[Specify in detail each discount offered.]*
- (ii) The exact method of calculations to determine the net price after application of discounts is shown below: *[Specify in detail the method that shall be used to apply the discounts];*
- d. *The Bill of Quantities for Year wise Lump-sum prices Including ESHS shall be read in conjunction with the Instructions to Bidders, Conditions of Contract, Specifications and the Drawings.*
- e. *This Bill of Quantities is the basis for payment of all payments to and from Employer's Country, set-up and site establishment.*
- f. *Payment shall be made in accordance with compliance to the actual program schedule for mobilization/ demobilization, set-up and establishment.*
- g. *The unit rates and prices bid in the priced Bill of Quantities shall, except in so far as is otherwise provided under the Contract, include all plant and equipment, transport and operation, 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 and not provided for separately under details of Bill of Quantities. References to the relevant sections of the Contract documentation including the Technical Specifications shall be made before entering rates or prices against each item in the Bill of Quantities.*
- h. *The method of measurement of completed work for payment shall be in accordance with the measurement and payment provisions of the relevant section in the Specifications.*

Part II – Priced Activity Schedule

Section VI. Priced Activity Schedule

Bidder shall quote prices for each year of the Contract Period of 3 years for Fairway Maintenance Dredging (Performance based dredging) for 3.0m of navigational channel and 45 m bottom width on **Year wise basis Lump-sum prices Including ESHS for -**

Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga) including River Conservancy and Channel marking

Fairway Maintenance Contract for providing Assured Least Available Depth of 3.0 m with 45 m width including River Conservancy works, channel marking etc in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga).

Dredging works include and not limited to removal of soft material, coarse / deposited materials including pebbles & boulders (if any)

Disposal of the dredged materials should be carried out in accordance with approved Environment Management Plan.

- Bidder shall quote prices duly taking into account the requirements specified in the Appendix A to the Contract – Description of Services, including provision of Aids to Navigation (Navigational marks in sufficient numbers) to be erected for safe navigation during day hours and maintenance of same throughout the contract period, as specified therein.
- Bid Prices shall include all duties, taxes, and other levies payable by the Service Provider excluding GST under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids.
- Bid price shall be filled in by the bidder before uploading the same with the bid on e-procurement portal. However, an illustrative format of the same is given below for reference.

• **Priced Activity Schedule**

| Sl. No. | Fairway Maintenance Contract for providing Assured Least Available Depth of 3.0 m with 45 m width including River Conservancy works, channel marking etc in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga). | Year wise Lumpsum Price shall be quoted including ESHS | | NPV Factor (Based on discount Factor of 10)* | NPV of quoted bid price for Maintenance Services Col 2 x Col 4 (in Rs) ** [only for evaluation purpose] |
|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------|----------------------------------------------|------------------------------------------------------------------------------------------------------------|
| | (1) | (2) | (3) | (4) | (5) |
| | | In Figures | In Words | | In Figures |
| 1. | Year 1 | | | 0.909 | |
| 2. | Year 2 | | | 0.826 | |
| 3. | Year 3 | | | 0.751 | |
| TOTAL AMOUNT FOR 3 YEARS inclusive of ESHS & all taxes excluding GST– In Figures In Words | | | | | |
| (GST Amount Considered) | | | | | |

We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract:¹⁷[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount of each such commission or gratuity]

| Name of Recipient | Address | Reason | Amount |
|-------------------|---------|--------|--------|
| | | | |

(If none has been paid or is to be paid, indicate “none.”)

¹⁷If none has been paid or is to be paid, indicate “none”.

| | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|---------------------------------------------------------------|---------------------|------------------------------|
| Finance Bid: Bill of Quantity (For On-line Submission Schedule) | | | | | | |
| <div style="display: flex; justify-content: space-around; align-items: center;"> Validate Print Help </div> | | | | | | |
| <u>Item Rate BoQ</u> | | | | | | |
| Tender Inviting Authority: Jal Marg Vikas Project, Inland Waterways Authority of India, Noida. | | | | | | |
| <i>Fairway Maintenance Contract for providing Assured Least Available Depth (LAD) of 3.0 m with 45 m width by Performance based dredging including River Conservancy works, channel marking etc in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga)</i> | | | | | | |
| Contract No: IN-IWAI – 281709 -CW-RFB | | | | | | |
| Name of the Bidder / Firm / Company: | | | | | | |
| <u>PRICE SCHEDULE</u> | | | | | | |
| Sl. No. | Item Description | Quantity | Unit | Year wise Lumpsum Price shall be quoted including ESHS | AMOUNT Rs. P | TOTAL AMOUNT In Words |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1.0 | Fairway Maintenance Contract for providing Assured Least Available Depth (LAD) of 3.0 m with 45 m width by Performance based dredging including River Conservancy works, channel marking etc in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga) | | | | | |
| | Year-1, LAD-3.0m. Channel Width- 45m | Lump Sum | LS | | 0.00 | Zero Only |
| | Year-2, LAD-3.0m. Channel Width- 45m | Lump Sum | LS | | 0.00 | Zero Only |
| | Year-3, LAD-3.0m. Channel Width- 45m | Lump Sum | LS | | 0.00 | Zero Only |
| 2 | GST | | | | | |
| 2.0 | (GST amount considered) | 1 | Rs. | | | |
| Total in Figures | | | | | 0.00 | INR Zero Only |
| Quoted Rate in Words | | INR Zero Only | | | | |

| Evaluation Criteria to Decide L1 | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|--------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| A. NPV – Net Present Value Factor | | | | | | |
| <i>Fairway Maintenance Contract for providing Assured Least Available Depth (LAD) of 3.0 m with 45 m width by Performance based dredging including River Conservancy works, channel marking etc in Farakka – Tribeni (351 km) Stretch of National Waterway - 1 (River Ganga)</i> | | | Bid Price for the services to be provided as specified inclusive of all taxes excluding GST – Year-wise (INR)/(Currency) | | NPV factor (Based on discount factor of 10% per annum) | NPV of the quoted Bid Price Col 4 x Col 6 (INR)/(Currency) (<i>Only for the purpose of evaluation</i>) |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Year | LAD | Width | In figures | In words | - | In figures |
| Year 1 | 3.0 m | 45 m | | | 0.909 | |
| Year 2 | 3.0 m | 45 m | | | 0.826 | |
| Year 3 | 3.0 m | 45 m | | | 0.751 | |
| Total for 3 years | | | | | | |
| Refer ITB clause 30.6 (e) determining aggregate of the Net Present Value (NPV) of three years' prices for Services quoted in the Priced Activity Schedule, by discounting these prices to the Date of Commencement of Services, <i>assuming only for purpose of the evaluation</i> that the quoted prices are payable at the end of the respective years. For the purpose of determining NPV, discount factor of 10 % per annum shall be applied | | | | | | |

Bid Security (Bank Guarantee)

[The Bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.]

Beneficiary: _____

Date: _____

BID GUARANTEE No.: _____

We have been informed that _____ (hereinafter called "the Bidder") has submitted to you its bid dated (hereinafter called "the Bid") for the execution of _____ 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 _____ hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of _____ (_____) 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 Form of Bid; or
- (b) 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 Form; or (ii) fails or refuses to furnish the performance security, if required, in accordance with the Instructions to Bidders.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder; or (ii) forty five 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 (URDG) 2010 Revision, ICC Publication No. 758 except that the supporting statement under Article 15(a) is hereby excluded.

[signature(s)]

Format for the Affidavit

[Reference ITB 13.1]

(NOTE: This affidavit should be on a non-judicial stamp paper of Rs.10/- and shall be attested by Magistrate/ Sub-Judge/ Notary Public)

I, (name of the authorised representative of the bidder) son/daughter of resident of (full address), aforesaid solemnly affirm and state as under:

1. I hereby certify that all the information and documents furnished with the bid submitted online in response to Invitation For Bid dated issued by (Authority inviting bids) for (name and identification of work) are true and correct.

2. I hereby certify that I have been authorised by (Bidder) to sign on its behalf, the bid mentioned in paragraph 1 above.

Deponent Place:

..... Date:

.....

Section V. Eligible Countries

Eligibility for the Provision of Goods, Works and Non- Consulting Services in Bank-Financed Procurement

In reference to ITB 4.4, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this bidding process:

Under ITB 4.7(a) - None

Under ITB 4.7(b) - None

Appendix-A**Section-VI
Part -A Description of Services**

| | | |
|--|----|--------------------------------------------|
| | 1 | Introduction |
| | 2 | Objective |
| | 3 | Scope of Services |
| | 4 | Technical Specification |
| | 5 | Vertical Water Level – Annexure A |
| | 6 | Meandering– Annexure B |
| | 7 | Shoals – Annexure – C |
| | 8 | Reach cum Chain age |
| | 9 | Quantity of Dredging |
| | 10 | Dredging |
| | 11 | Dredgers |
| | 12 | Navigational Aids |
| | 13 | Day Channel Marking |
| | 14 | Bandalling |
| | 15 | Monitoring |
| | 16 | Clearances (horizontal & Vertical) |
| | 17 | Disposal of Dredged Material |
| | 18 | Environmental Management Plan – Annexure-D |
| | 19 | Other Conditions |

| | |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Appendix A - Description of the Services OBJECTIVE of SERVICES |
| 1. Introduction | <p>Inland Waterways Authority of India (IWAI) is a statutory body set up in 1986 under the Ministry Ports, Shipping and Waterways, Govt. of India. The Authority is entrusted with development, maintenance and management of National Waterways for shipping and navigation.</p> <p>Inland Waterways Authority of India (IWAI) is implementing Jal Marg Vikas Project (JMVP) for capacity augmentation of National Waterway - 1 between Varanasi - Haldia (1380 Km) with the technical assistance and financial support of the World Bank. The project is scheduled to be completed by December, 2023. The extension of this work shall be considered by IWAI through its resources.</p> <p>The Ganga-Bhagirathi-Hooghly River system for a length of 1620 km connecting Haldia (Sagar) - Kolkata - Bhagalpur –Sultanganj – Mahendrapur - Barh - Patna - Ghazipur - Varanasi – Allahabad was declared as National Waterway 1 (NW-1) in the year 1986. There is considerable difference between flood and lean season discharges and water level.</p> <p>The targeted Least Available Depth (LAD) in various stretches of NW-1 is Haldia - Farakka - 3.00 m; Farakka –Barh 3.0 m; Barh – Ghazipur - 2.50 m and Ghazipur –Varanasi – 2.20 m.</p> <p>To achieve the navigation of vessels in Farakka - Tribeni (351 Km) stretch of NW-1, IWAI intends to engage agency for providing fairway with Assured Depth of 3.0 m and channel width of 45.0 m by dredging and other suitable river conservancy measures on performance basis for three years and extendable on yearly basis for another two years on satisfactory performance to tackle the shoals occurring in the river or as per the requirement.</p> |
| 1.2 Objective | <p>The Objective of the Works & Services is to maintain Assured Least Available Depth (LAD) of 3.0 m and bottom channel width of 45 m between Farakka - Tribeni (351Km) stretch of National Waterway-1 on performance basis for 3 years by Dredging and River conservancy measures (Bandalling, Submerged vanes etc.) as well as erection & maintenance of Navigational Aids (Day Channel Markings).</p> |
| 2. Scope of Work | <p>The Contractor will have to identify the best course of Navigation channel from time to time and remove shoals (shallow area w.r.t assured Least available Depth (LAD)).</p> <p>Maintenance of a navigation channel of 45 m width and assured LAD of 3.0 m in all three (3) years throughout the stretch as specified which can be done by the combination of dredging and river training measures.</p> <p>The scope of the contract shall include:</p> <p>(i) To Provide and maintain assured LAD of 3.0 m and Channel bottom width of 45 m with naturally side slopes</p> |

| | |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>during three (3) years from the date of commencement of Services.</p> <p>(ii) To install and maintain Day Channel Markings (Navigational Aids) throughout the Contract Period.</p> <p>(iii) Assistance to Normal barge and vessels / crafts movement in the navigation channel during dredging operation.</p> <p>The tentative dredging quantity in Farakka - Tribeni (351 Km) stretch is 28.875 Lakh cum for three years.</p> |
| 3. Technical Specifications | <p>The material to be dredged is sand, silt, soft clay or a mixture of these materials, compact and sediment clay. If the dredger meets any strata such as boulders, ropes, sand stone, stone debris, wooden logs etc., such patches will also continue to be tackled with a modified cutter or cutter teeth like serrated etc. capable for dredging such materials for a length of up to 20 m. Further steps to be taken, should be decided mutually between the Contractor and the Engineer-in-charge, if hard strata exist beyond 20 m.</p> <p>To achieve the LAD of 3.0 m and Channel bottom width of 45 m, the bidder / Contractor shall take into account tolerance of + 1 m from each edge of the channel and tolerance of +30 cm on the depth. There is however, no restriction on maximum width of the channel which may naturally be available. And no additional payments shall be admissible to this effect.</p> |
| 4. Water Levels | <p>The vertical water level difference is of the order of 10-12 m. The Current in the river ranges from 0.5 to 4.5 m/s. However, the current during the lean season seldom exceeds 1.5 m/s. Details of the water levels in Tribeni-Farakka stretch are provided in Annexure A.</p> |
| 5. Meandering | <p>There has been substantial meandering and details of changes to the river course in past years are given in Annexure B.</p> |
| 6. Shoals | <p>There is substantial braiding in the river which during lean season (Oct / Nov to June) results into shoals at various places which hinder navigation. 2015 Bathymetric survey shows around 91 shoal locations with a total dredge length of about 30.2 kms, in Tribeni-Farakka Stretch with depths less than 3.0 m. The location of shoals in Tribeni-Farakka stretch is provided in Annexure C.</p> |
| 7. Course of Navigation | <p>The Service Provider will have to identify the best course of navigation channel from time to time and remove shoals [shallow area w.r.t. assured available depth of 3.0 m] by dredging and / or bandalling.</p> |
| 8. Quantity of Dredging | <p>The quantity of dredging and length of Bandalls are to be ascertained by the Service Provider as per site conditions and own resources. The Bidder may also take into consideration data available in IWA website, which gives details of LAD in the past years.</p> <p>The tentative dredging quantity in Farakka - Tribeni (351 Km) stretch is approx.28.875 Lakh cum for three years.</p> <p>However, it is a fact that the quantum of dredging and Bandalling as well as erection and maintenance of navigational aids (day channel markings) varies year to year based on the condition of channel after flood season and it may vary to the tune of + 10% to 25%. It is advised that the Bidder should collect necessary information, data,</p> |

navigational charts of NW-1 or any other site information related to availability of men, material, equipment's etc. and familiarize himself with the site conditions before bidding.

The indicative annual maintenance task to achieve assured LAD and specified Channel bottom width (dredging and bandalling) are given in Table 1. These are based on average dry flow season and, an allowance for side slopes having a tolerance of 1V:10H.

Stretch of Farakka – Tribeni (351 Km) - Tentative Quantity of 28.875 Lack Cum to be dredged during the lean season of (7) seven months (November to May) except for flood seasons (June to October)

Table-1: Indicative Annual Maintenance Task (Dredging and Bandalling) based on 2015 bathymetric and topographic survey and considering average flow conditions)

| Sl. no | Description | Year-1 | Year-2 | Year-3 | Total |
|--------|-----------------------|---------------|---------------|---------------|----------------|
| 1. | Channel Dimensions | LAD- 3.00m | LAD – 3.00m | LAD 3.00m | |
| 2. | Channel Width | 45 m | 45 m | 45 m | |
| 3. | Dredging Quantity | 9.625 Lac Cum | 9.625 Lac Cum | 9.625 Lac Cum | 28.875 Lac Cum |
| 4. | Bandalling Length (m) | 9100 | 9100 | 9100 | 27300 |

On an average Length of bandalling is taken @100m at each shoal. Actual length required may vary depending upon site conditions and bandalling may not be required at all the shoals. This has to be decided by the contractor after survey.

Indicative amounts for Bandalling include work to erect and re-erect or relocate the same as and when necessary. Bandalling is typically deployed in length of 100-500 m at each deployment location. The number of bandalling location indicated in Table 1 are based on the assumption that bandalling will be required where a shoal is present. However, the number of locations is tentative and shall be selected suitably subjected to the desired benefits in light of local conditions.

Dredged and Bandalling work is not normally required to be done during flood period (normally from June to September or October). The reach wise shoal data are given in Table 2.

Table-2

| IWAI REACH | Name of the Beat Details of shoals | Chainages (in Km) | NO. OF SHOALS | TOTAL SHOAL LENGTH (m) | TOTAL SHOAL LENGTH (m) WHERE DREDGING IS LESS THAN 1m |
|------------|------------------------------------|-------------------|---------------|------------------------|-------------------------------------------------------|
| 1 | Tribeni - Balagarh | 193-221 | 7 | 1,903 | 770 |
| 2 | Balagarh - Kalna | 221-245 | 10 | 4,345 | 3930 |
| 3 | Kalna - Samudragarh | 245-263 | 8 | 2,287 | 1730 |

| | | | | | | |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------|-----------|---------------|---------------|
| | 4 | Samudragarh - Nabadweep | 263-280 | 3 | 1,120 | 930 |
| | 5 | Nabadweep - Patuli | 280-322 | 11 | 2,413 | 1450 |
| | 6 | Patuli - Katwa | 322-345 | 8 | 2,395 | 1920 |
| | 7 | Katwa - Palassey | 345-371 | 7 | 3,586 | 2030 |
| | 8 | Palassey - Chaurigacha | 371-400 | 9 | 2,295 | 2090 |
| | 9 | Chaurigacha - Berhampur | 400-421 | 7 | 2,906 | 2910 |
| | 10 | Berhampur – Mohammadpur | 421-449 | 4 | 2,381 | 2370 |
| | 11 | Mohammadpur - Nasirpur | 449-479 | 12 | 3,531 | 3280 |
| | 12 | Nasirpur – Jangipur Lock | 479-505 | 3 | 700 | 700 |
| | 13 | Jangipur Lock – Farrakka Lock | 505-544 | 2 | 370 | 370 |
| | | Subtotal | | 91 | 30,232 | 24,480 |
| 9. Dredging | <p>Dredging is to be carried out with suitable Cutter Suction Dredgers having capacity of 250-650 cum solids per hour in shallow patches. Cutter suction dredgers can also be supported by backhoe dredgers, water injection dredgers (WIDs) and plough dredgers. Maintenance of a navigation channel of 45 m width with natural slope throughout the stretches as specified maybe achieved by the combination of dredging and bandalling system or other suitable river conservancy measures.</p> <p>The maintenance methodology shall be determined by the selected Service Provider taking into account the nature of the river and other environmental characteristics, including the nature, location and size of shoals, and the contract period.</p> <p>Sufficient number of qualified manpower should be deployed by the Service Provider on the dredgers and other equipment and on other works throughout the contract period at his cost.</p> | | | | | |
| 10. Dredgers | <p>The service provided may deploy any numbers and sizes of dredgers to achieve the work requirement.</p> <p>Service Provider shall mobilize additional resources like dredger, equipment, etc. at his cost for maintaining the assured depth of 3.0 m and channel width of 45 m in the entire stretch during the entire contract period of 3 years.</p> <p>In case of slow progress of work, the Engineer-in-charge may direct Service Provider to deploy additional dredgers for completion of the work in time and in such case Service Provider may mobilize additional dredgers without any cost to the Employer.</p> <p>If the dredger goes out of order, the Service Provider shall arrange for suitable replacements.</p> | | | | | |

| | |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Service Provider shall not be eligible for payment of costs involved in shifting the dredger and its accessories from one shoal to another shoal or from one area to another area in Tribeni-Farakka sector of NW-1. |
| 11. Navigational Aids (day Channel Marking) | <p>i. Specified day channel markings are an essential component of navigation through the channel which is to be maintained by the Service Provider under this contract. Service Provider is advised to acquaint himself adequately with various types of channel marks specified by IWAI under regulation for Prevention of collision of national waterways regulations, 2002.</p> <p>ii. The inspection of the navigational channel for certifying the maintenance of assured LAD will also be carried out in the channel thus marked by the Service Provider. The inland vessels (the end users) also use these channel marks as standard guiding aids for safe navigation.</p> <p>iii. The number and type of aids to navigation to be provided shall be based on the volume of traffic and degree of risk associated with navigation on the river route. Further, minimum number of day navigational marks is to be erected in the maintained channel during the lean and flood season are 220 & 110 respectively in the way it is safe for navigation and can be easily identified as navigation route by the end users during their course of navigation without any assistance.</p> <p>iv. The contract shall also include the maintenance of navigational aids to navigation delineating river fairways.</p> <p>v. The Service Provider will also be required to deploy its own pilots for assisting cargo and passenger / tourist vessels for their movement based on written request by the end users. For this, the Service Providers can charge the fee from the users as per IWAI's regulation.</p> <p>vi. In case any cargo vessel is grounded due to inadequacy of depths or channel marking, the service provider shall make arrangement for rescue of the vessels by providing rescue tugs at his own cost.</p> <p>EIC has the right to take appropriate action if the contractor fails to satisfy EIC about number type and quality of channel markings or if an end user complains in writing with Prima facie evidence about absences, inadequacy or mistakes in channel marking erected by the contractor under this contract.</p> <p>Some important aspects of channel marking to be erected and maintained by the Service Provider to meet the requirements of this contract are as following: -</p> <p>A. The responsibility of the contract includes erection, supervision, safe keeping, re - erection and maintenance of the channel marks and other allied works and the provision of all labour, materials, mechanized boats, temporary works and everything whether of a temporary or permanent nature required for safe navigation as specified or reasonably to be inferred from the contract.</p> <p>B. For marking the channel, the material used shall be bamboos, bamboo strips, bamboo mats, coir string, straw, lime, etc., the materials and other tools and plants as may be required are to be arranged at different sectors at Service Provider's own cost.</p> |

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| | <p>C. Marks shall have to be erected at suitable places as per requirement of E-I-C or his representative and also as per Enclosure-3 herewith. In case, any marks are placed wrongly the same shall be rectified by the Service Provider at his own cost.</p> <p>D. The Service Provider shall at his risk and cost, make all arrangements for locating the navigable channels, sand chars, snags, etc., by means of regular soundings along the river and change the position of the marks to indicate the navigable channel by the end users during operating in the stretch.</p> <p>E. All the marks termed as right-hand marks, left hand marks, channel closing marks and snags (for lean season) and right-hand transit mark and left-hand transit mark (for flood season) are of variable nature and this can be determined only after conducting the survey in the field. In case of additional requirement of marks, the Service Provider shall erect the same without additional cost.</p> <p>F. The Service Provider shall be liable to bear the expenditure of all manpower, material and equipment required for the work at his cost. He must, therefore, have thorough knowledge about the work prior to submission of his rates in the bid. No extra claim in this regard shall be entertained once the contract has been awarded. The marks shall be maintained during the entire contract period. The material used for channel marking thereafter shall have to be removed by the Service Provider at his risk & cost.</p> <p>G. Bamboo Harauti of 18 to 23 cm circumference at 45 cm (1'-6") from the bottom about 7 to 7.5 mtrs. long are required for marking the channel. The marks shall be driven properly by using wooden hammer up to at least (one) 1 meter below the ground level. Submerged sand chars, submerged high banks and other possible navigational obstructions shall be duly marked Beginning and end of a channel through chars shall be prominently marked using bamboo poles with bamboo mats reinforced with bamboo strips for being located. These shall also be painted with lime. The reference of marking shall be commenced from upstream of the river and marks shall be put up on the right hand side of the channel or the left hand side of channel as given in Enclosure 3.</p> <p>H. The navigable channel shall be 45 m wide and 3.0 m deep throughout the year. Marks shall be erected after taking measurement across the river by marked bamboo poles.</p> <p>I. Navigational channel in the crossing from one bank to another shall be marked with transit marks. Where straight reach is available, marking shall be placed at longer distance but shall be visible from first mark. For marking the main channel passing through the shoal / chars the marks shall be erected in water close to the main navigational channel.</p> <p>J. All snags shall be marked with proper care. During the flood a number of trees, trunks & other permanent structures which are uprooted in the U/S of the river, flows down & get strangles at marking places even some time in the main channel. For safety of navigation, these obstructions known as snags should be detected first & marks properly. For these special marks (as mid water snag marks, left & right-hand snag marks) are being used which may be seen in Enclosure-3. If they are deep in water lying on river bed but allowing sufficient navigation depth in lean period then marking is done by a navigation buoy made of a sealed 15 litre empty oil tin painted red, tied with a wire rope & sunk by a sinker.</p> |
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| | <p>K. The materials used on the work shall be of good quality conforming to the specifications laid in the contract. The work shall be carried out in a workman like and expeditious manner and the quality of work at each stage shall be monitored by the Engineer-in-charge or its representatives. The Engineer-in-charge's decision as to the quality of such materials and work shall be final and binding on the Service Provider.</p> <p>The Service Provider shall bear full responsibility for the intimation to the Engineer-in-charge forthwith of any accident and take all necessary action required under relevant Acts and Rules, Marine Rules etc., as the case may be. The Service Provider shall also report such accidents to the Competent Authority wherever such reports are required under rules. The Engineer-in-charge or his representative must however, be informed immediately in the event of any marine accident. The Service Provider should also bear full responsibility for all accident, damages or injury caused to any of the Employer's employees, cause of which is established to be attributable to the Service Provider's carelessness or negligence.</p> |
| 12. Day Channel Marking | <p>Some important aspects of channel marking to be erected and maintained by the Service Provider to meet the requirements of this contract are as follows: -</p> <p>A. The responsibility of the contract includes erection, supervision, safe keeping, re - erection and maintenance of the channel marks and other allied works and the provision of all labour, materials, mechanized boats, temporary works and everything whether of a temporary or permanent nature required for safe navigation as specified or reasonably to be inferred from the contract.</p> <p>B. For marking the channel, the material used shall be bamboos, bamboo strips, bamboo mats, coir string, straw, lime, etc., the materials and other tools and plants as may be required are to be arranged at different sectors at Service Provider's own cost.</p> <p>C. Marks shall have to be erected at suitable places as per requirement of E-I-C or his representative and also as per Enclosure-3 herewith. In case, any marks are placed wrongly the same shall be rectified by the Service Provider at his own cost.</p> <p>D. The Service Provider shall at his risk and cost, make all arrangements for locating the navigable channels, sand chars, snags, etc., by means of regular soundings along the river and change the position of the marks to indicate the navigable channel by the end users during operating in the stretch.</p> <p>E. All the marks termed as right hand marks, left hand marks, channel closing marks and snags (for lean season) and right hand transit mark and left hand transit mark (for flood season) are of variable nature and this can be determined only after conducting the survey in the field. In case of additional requirement of marks, the Service Provider shall erect the same without additional cost.</p> <p>F. The Service Provider shall be liable to bear the expenditure of all manpower, material and equipment required for the work at his cost. He must, therefore, have thorough knowledge about the work prior to submission of his rates in the bid. No extra claim in this regard shall be entertained once the contract has been awarded. The marks shall be maintained during the entire contract period. The material used for channel marking thereafter shall have to be removed by the Service Provider at his risk & cost.</p> |

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| | <p>G. Bamboo Harauti of 18 to 23 cm circumference at 45 cm (1'-6") from the bottom about 7 to 7.5 mtrs. long are required for marking the channel. The marks shall be driven properly by using wooden hammer up to at least (one) 1 meter below the ground level. Submerged sand chars, submerged high banks and other possible navigational obstructions shall be duly marked Beginning and end of a channel through chars shall be prominently marked using bamboo poles with bamboo mats reinforced with bamboo strips for being located. These shall also be painted with lime. The reference of marking shall be commenced from upstream of the river and marks shall be put up on the right-hand side of the channel or the left-hand side of channel as given in Enclosure 3.</p> <p>H. The navigable channel shall be 45 m wide and 3.0 m deep throughout the year. Marks shall be erected after taking measurement across the river by marked bamboo poles.</p> <p>I. Navigational channel in the crossing from one bank to another shall be marked with transit marks. Where straight reach is available, marking shall be placed at longer distance but shall be visible from first mark. For marking the main channel passing through the shoal / chars the marks shall be erected in water close to the main navigational channel.</p> <p>J. All snags shall be marked with proper care. During the flood a number of trees, trunks & other permanent structures which are uprooted in the U/S of the river, flows down & get strangles at marking places even some time in the main channel. For safety of navigation, these obstructions known as snags should be detected first & marks properly. For this special marks (as mid water snag marks, left & right hand snag marks) are being used which may be seen in Enclosure-3. If they are deep in water lying on river bed but allowing sufficient navigation depth in lean period then marking is done by a navigation buoy made of a sealed 15 litre empty oil tin painted red, tied with a wire rope & sunk by a sinker.</p> <p>K. The materials used on the work shall be of good quality conforming to the specifications laid in the contract. The work shall be carried out in a workman like and expeditious manner and the quality of work at each stage shall be monitored by the Engineer-in-charge or its representatives. The Engineer-in-charge's decision as to the quality of such materials and work shall be final and binding on the Service Provider.</p> <p>The Service Provider shall bear full responsibility for the intimation to the Engineer-in-charge forthwith of any accident and take all necessary action required under relevant Acts and Rules, Marine Rules etc., as the case may be. The Service Provider shall also report such accidents to the Competent Authority wherever such reports are required under rules. The Engineer-in-charge or his representative must however, be informed immediately in the event of any marine accident. The Service Provider should also bear full responsibility for all accident, damages or injury caused to any of the Employer's employees, cause of which is established to be attributable to the Service Provider's carelessness or negligence.</p> |
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13. Bandalling

The Service Provider shall for the purpose of maintenance of the required LAD and channel bottom width, undertake erection and maintenance of bandals as under, in addition to dredging works and other methods that may be employed by him.

i) Bandals of required length are erected at shoal sites to increase the depth of main channel for the purpose of navigation or to maintain desired depth in dredged channel. It will include erection, supervision, safe keeping, re-erection and maintenance of bandals and other allied works complete with all labour, materials, boats, temporary and permanent works, taxes, levies, duties etc. as specified in the contract.

ii) Bandals are fabricated using new bamboos, mats and coir string. Length of each unit of bandal is normally about 30 m/ 15 m and size of screen is 1.2 m x 0.9 m. These bandals are placed at 30 degree to 45 degree angle to the direction of current driving bamboo poles. The bamboo mats are placed in such a way that only 10 cm. is above the water level and rest inside the water. It is required to be maintained at appropriate level by lowering/raising the mats depending on the change in water level. Bandal needs to be erected according to the drawings given in Enclosure 1 & 2. In A type bandal the 90 cm side of the mat will be in vertical position (i.e. 80 cm. inside water and 10 cm. above) and in B type bandal 120 cm. side is in vertical position

iii) New harauti/ Jati bamboo of 18-23 cm circumference at 45 cm from the bottom and 7 to 7.5 m long are used for horizontal, vertical and side support. The vertical bamboo pins are driven in proper line with spacing of 60 cm as per drawings enclosed. The number of bamboos required for 15 m length/30 m length are as under:

For 15 m – 40 Nos. and For 30 m – 80 Nos.

iv) New bamboo mats 1.2 m x 0.9 m made of minimum 1 mm thick and minimum 1.5 to 2 cm. wide bamboo strips closely woven, tied together with the help of bamboo strips and coir string are fixed on vertical bamboo pins of bandal to act as screen as per drawing and direction of EIC. The no. of mats & quantity of thick and thin coir string required during erection of 15 m and 30 m length of Bandals generally are as under:

| <u>For 30 m</u> | <u>For 15m</u> |
|-----------------------------|-------------------------------|
| Bamboo mats - 56 nos. | Bamboo mats - 28 nos. |
| Coir string (thick)-10 kgs. | Coir string (thick) – 5 kgs. |
| Coir string (thin) – 5 kgs. | Coir string (thin) – 2.5 kgs. |

The bandals of specified length can be erected at the sites as per requirement to maintain the navigational channel/depth.

v) Erected / re-erected bandals are maintained depending upon the requirements. After certain period sand chur may appear behind one or more length of bandal at one end of alignment of bandal. In that case such one or more units of bandal may require to be removed and re-erected at other alignment.

vi) During maintenance period, materials of bandal (e.g. bamboo, bamboo mats, coir strings) is changed due to decay of material only.

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| | <p>vii) For effective bandalling, sufficient anticipated amount of materials (e.g. bamboo, bamboo mats, coir string) is generally be stored at each bandal site so that during maintenance materials may be replaced without any loss of time. Replacement of decayed mats is completed at shortest period and no part of bandal is kept without mats at any time.</p> <p>viii) Sometimes it may be observed that the required depth of main channel is achieved at any shoal by erecting bandals, but after a period of time, continuing the bandals is no longer considered necessary. In that case the erected bandals are required to be removed.</p> <p>ix) Re-erection of bandal at new places is done with the help of salvaged materials obtained from the removed bandal and by using other fresh materials e.g. bamboo, bamboo mats and coir string, by substituting whatsoever may be found damaged in the process of re-erection.</p> <p>x) Adequate number of boats / logistics are arranged by for erection and maintenance of the bandals at each site are to be arranged by the Service Provider. Service Provider may use power boats/ launches for timely erection and proper maintenance of bandal.</p> <p>The above details of bandals are given only for the guidance of Service Provider. However, the Service Provider is free to alter the specification of bandals. In fact Service Provider is also free to employ every other method of aid for maintenance of targeted LAD. This may include any type of temporary or semi-permanent river training works. It is to be reiterated that for performance of this contract or for payments to be made under the contract the only objective / measurement to be made is the LAD recorded on specified joint inspections and not either the quantity of dredging or bandalling or channel marking or anything else. But if the Service Provider wishes to employ any other method (other than traditional dredging or bandalling), he has to request for the same with sufficient details and obtain written permission from Engineer-in-charge for every innovative work. If such works are found prima facie practical, they will be accepted and encouraged.</p> |
| 14. Monitoring | <p>Monitoring shall be undertaken by the Employer. This shall be done directly and through an appointed Supervision Consultant (TSSC-III). This may also include monitoring by placing survey sounders on select merchant ships passing through the part of the route. Any supervision and monitoring shall not relieve the Service Provider of his obligations under the Contract, including his duty to make his own surveys.</p> |
| 15. Clearances (Horizontal & Vertical) | <p>The Service Provider shall inspect and ascertain himself details of horizontal & vertical clearances available at bridges/locks etc. within the National Waterway from the view point of safe mobilization / demobilization of their various equipment to the specified dredging locations.</p> <p>The Service Provider shall be liable to bear the expenditure of all manpower, material and equipment required for all the related work. No extra claim in this regard shall be entertained once the contract has been awarded.</p> |

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| 16. Disposal of Dredged Materials | <p>Disposal of dredged materials would be effected into the free -stream of the river / on the banks /into the nearby redundant channels at a least distance of 150-200 m from the navigation channel. The disposal locations should be positioned to avoid material working its way back into the dredged channel by taking such precautions as, disposing into faster flowing water, downstream and to the side of the working dredger.</p> <p>If required, temporary dykes shall be constructed for holding the material as directed by the Engineer-in-charge.</p> <p>In case the Service Provider intends to dispose of the dredged materials on banks outside the river after obtaining necessary permission from Engineer-in-charge and also from the land owner(s) and the concerned Department of the state govt of Bihar (Forest/Mining/Revenue) for dumping the material on their lands.</p> <p>Expenditure involved in such disposal including payment to the land owner(s) for dumping the material on their lands shall be borne by the Service Provider.</p> |
| 17. Material Obtained from Excavation and Treasure, Trove, Fossils Etc | <p>Material of any Kind obtained from excavation on the site shall remain the property of the Authority and shall be disposed off as directed by the Engineer-in-Charge.</p> <p>However If any of the materials thus obtained from excavation on the site is such as can be used in the execution of work under the contract, the contractor will be allowed to use the same free of cost (except that any amount of royalty paid for in this regard by the Authority shall be recoverable from the contractor) for the aforesaid purpose provide the same is found suitable and is approved by the Engineer-in-Charge.</p> <p>Fossils, coins, articles of value, structures and other remains of things of geological or archaeological interest discovered on the site shall be the absolute property of the Authority. The contractor shall take reasonable precautions to prevent is labor or any other person from removing or damaging any such article or things and shall acquaint the Engineer-in-Charge with such discovery and carryout the Engineer-in-Charge's directions as to the disposal of the same at the expense of the Authority.</p> |
| Survey Vessel | <p>The survey vessel shall have:</p> <ul style="list-style-type: none"> Sufficient size and stability to safely and properly carry out the survey work under the prevailing site conditions; Good manoeuvrability, even at low speeds of 1 to 2 knots Ample space for instruments, recorders, etc; Day accommodation for two men of the EIC - Engineer's staff, besides the normal crew and Contractor's own surveyors; A helmsman experienced in survey work; Adequate radio communication between all persons concerned in the surveys; Facility for operation of Automated Hydrographic Survey System (AHSS) |
| Multi Beam Echo Sounder | <p>.Multi Beam Echo Sounder</p> <p>The digital echo sounder for hydrographic surveys shall in principle be operated in the 210 kilo Hertz range (narrow beam transducer). It shall not be permitted for any reason to use a lower operational frequency of the echo sounder for the Post-dredging survey than that has been used for the Pre-dredging survey. The digital echo sounder shall have an accuracy of not less than 0.1 m.</p> |

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| | At the start of each hydrographic survey, the AHSS is to be calibrated to the specified accuracy. To this effect, the Contractor shall establish a fixed point (or fixed points) with known coordinates such that the survey boat can easily be positioned with the transducer of the echo-sounder always in the same position relative to the calibration point. |
| 18. Environmental Management Plan | The Service Provider shall be required to dispose of dredged materials complying with environmental consideration as detailed under Environmental Management Plan, which has been published on IWAI's website (http://www.iwai.nic.in) and same is appended to the bidding document as Annexure D |
| 17. Other Conditions | <p>Mobilization / Demobilization charges for the dredgers and its accessories and other logistics for survey/ inspection/works etc. should be inbuilt in the bid by the Service Provider. No additional payment/ claim in this regard will be considered.</p> <p>(a) Normal barge and vessels/crafts movement in the channel shall not be interrupted by the dredging operation.</p> <p>(b) No idle time charges shall be payable to the Service Provider on any account during the contract period.</p> <p>(c) The Service Provider shall arrange at its own cost the transits, buoys, lights, mooring etc. as required for dredging and also for cautioning other vessels in the waterway.</p> <p>(d) The Engineer-in-charge or his representative will inspect, co-ordinate and measure the work as per the contract condition. He has the right to inspect at any time during the contract period besides the specified schedule of inspections.</p> <p>(e) The Service Provider shall provide the Engineer-in-Charge or his representative boat/ survey launch from shore to dredger and back to shore and movement in the stretch for inspection & supervision.</p> <p>(f) The Service Provider may execute the work round the clock and on all days including Sundays and Public Holidays with the permission of the Engineer-in-charge in writing excepting National Holidays and subject to such restrictions as may be imposed by State Govt./local body.</p> <p>(g) If the Service Provider's personnel or any outside labour employed to work during execution of contract, breaks or damages/destroys any vessel, craft, net, fishing stakes etc. building, road, kerb, water pipe, fence, bund, wires, trees, crop, fruit or cultivated ground etc. during the period of agreement, the same shall be made good by the Service Provider at his own expenses or in default the Employer may cause the same to be made good by other sources and deduct the expenses from any sums that may be then or at any time thereafter may become due to the Service Provider.</p> <p>(h) Any dispute with the local fishermen, for removal of fishing nets, stakes, from the channel to be dredged shall be solved by the Service Provider</p> <p>However, on request the Employer may extend the assistance for solving the issues only through the concerned official/ dept. of the state or local bodies.</p> <p>(i) Service Provider shall pay special attention for identification of disposal sites with a view to ensure uninterrupted dredging operation and plan in advance disposal details ahead of location of dredger. In the event of non-availability of dumping site, Employer shall not be</p> |

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| | <p>responsible for delays caused in in the dredging operation/ maintenance of navigational channel.</p> <p>(j) In case obstructions like concrete piles, structures of fishing nets, plastic debris, fallen trees, sunken boats etc. are encountered, those will be removed by the Service Provider and no extra payment on this account shall be admissible to the Service Provider.</p> <p>(k) In case of any local objections against dredging or disposal of dredged spoils, it has to be settled by the Service Provider. However, on request, Employer will extend liaison/ help to the Service Provider to approach concerned officials of State Administration.</p> <p>(l) If the maintenance of navigational channel is stopped continuously for more than 3 days due to law and order, Service Provider has to report to the same to the Engineer-in-charge and take actions mutually in accordance with prevailing local laws for removal of such problem and proceeding further with the work. In case of delay in work, the Engineer-in-charge may take suitable decision without affecting the main objective of the project.</p> <p>(m) The Service Provider shall adopt adequate precaution and measures such as construction of temporary protection etc. during the dredging operation, to avoid any collapse/ damages to the existing bank. Protection work of the dredged area shall be at its own cost.</p> <p>(n) The Service Provider shall forthwith dispatch, raise and remove any plant (floating or otherwise) belonging to him or to any person employed by him which may be sunk in the course of execution and completion of the works or otherwise deal with the same as the Engineer-in-charge or his representative may direct. Until the same shall be raised and removed, the Service Provider shall display at night search lights and do all such things for the safe navigation as may be directed by the Engineer-in-charge. In the event of the Service Provider not carrying out the obligations imposed upon him by this clause, the Engineer-in-charge shall raise and remove the same (without prejudice to the right of the Employer to hold the Service Provider liable) and the Service Provider shall pay to the Employer all costs incurred in connection therewith. The fact that sunken vessel, craft or plant is insured or has been declared a total loss, shall not absolve the Service Provider from his obligation under this clause to raise and remove the same.</p> <p>(o) During execution of the work if any environmental degradation occurs, consequent on dumping of dredged material or any other reason the same shall be undone or necessary mitigation measures to the satisfaction of Engineer-in-charge by the Service Provider at his cost, without claiming any additional payment from Employer.</p> <p>(p) Any changes incurred on testing of the dredged material, testing/ analysing the quality of water for adopting environmental safeguards, minimizing detrimental impacts, enhancing the beneficial aspects of the project and for effective management of the environmental resources affected by the project shall be met by the Service Provider. No additional charges on any such account shall be payable by the Employer.</p> |
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ANNEXURE – A

[Farakka - Tribeni 351 Km

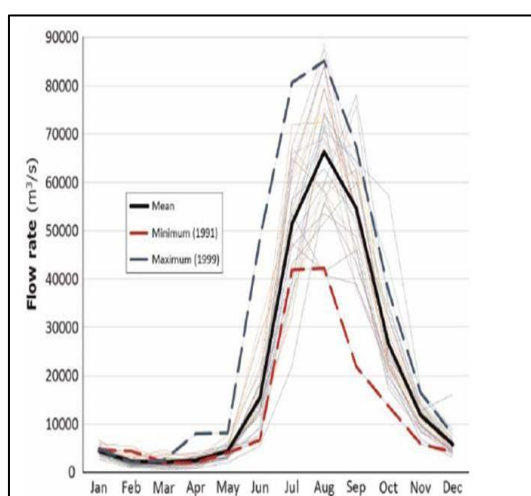
The report “Status on River Ganga: State of the Environment and Water Quality” from the National River Conservation Directorate (2009) provides useful information in terms of understanding water discharges along the upstream reaches of NW-1. The report presents water discharges with a probability of exceedance of 50%, 10% and 90% at 6 stations: Allahabad, Mirzapur, Varanasi, Buxar, Patna and Azamabad during the low flow season. It also presents average post-monsoon flows (in October-November), average flows in December-February and in March-May periods. These values are summarized in below.

Table A- 1: Characteristic discharges obtained from the National River Conservation Directorate (2009) report

| Flow regime Discharge (m ³ /s) | Allahabad | Mizarpur | Varanasi | Buxar | Patna | Azamabad |
|-----------------------------------------------------------------|-----------|----------|----------|-------|-------|----------|
| Q50 (flow with 50% probability of exceedance) during low season | 300 | 300 | 300 | 450 | 1050 | 1400 |
| Q90 (flow with 90% probability of exceedance) during low season | 175 | 175 | 175 | 250 | 600 | 1050 |
| Q10 (flow with 10% probability of exceedance) during low season | 450 | 450 | 450 | 600 | 1600 | 2000 |
| Average in October-November | 2000 | 2200 | 2400 | 3100 | 5500 | 9500 |
| Average in December-February | 500 | 500 | 500 | 750 | 1300 | 2200 |
| Average in March-May | 400 | 400 | 400 | 500 | 1000 | 1500 |

Source: The National River Conservation Directorate, Ministry of Environment and Forests, Government of India (2009)

Farakka Barrage, with a length of 2.2 km and about 15 km from the border with Bangladesh, regulates the flow of the River Ganga diverting some of the water into the 42 km long Feeder Canal linking with the Bhagirathi River downstream towards Kolkata. The navigation lock at Farakka, as well as the Feeder Canal, are part of the Farakka Barrage Project and become the link between the Bhagirathi-Hugli system and the main River Ganga upstream of the Farakka Barrage



The existing agreement between India and Bangladesh, includes specific water allocation rules during the low flow season. The treaty establishes that during the period January – May water shall be shared alternatively through the Farakka Barrage on a 10 day cycle in each month by both countries.

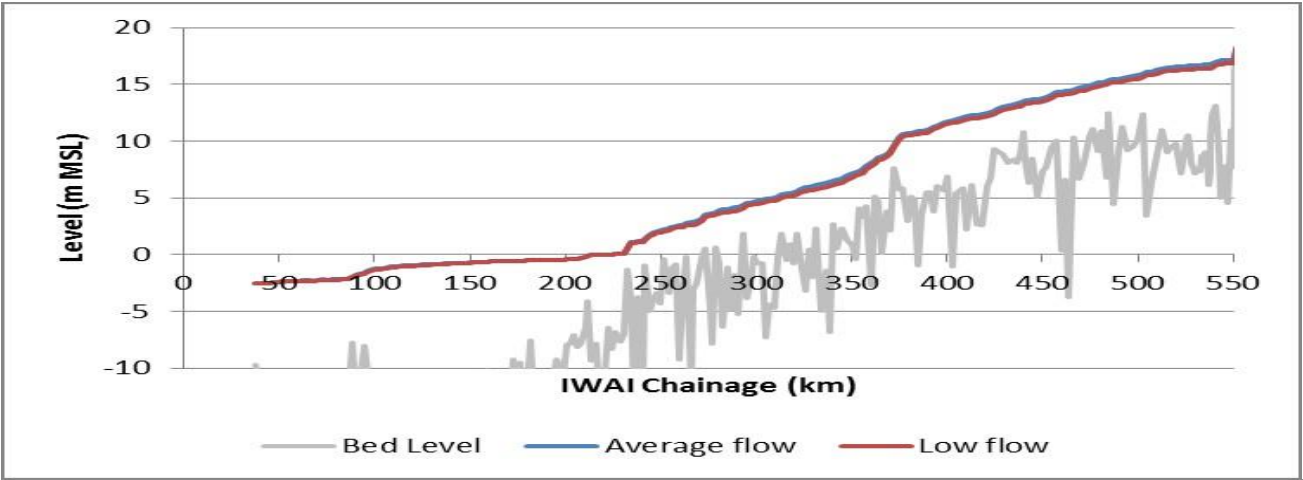
Data extracted from Jeuland et al (2013) shows the historical flows at Farakka for the period 1969-2001

Source: The National River Conservation Directorate, Ministry of Environment and Forests, Government of India (2009)

The 1D model has been run for the whole waterway from Allahabad to Haldia. The model has been run considering the following discharges from Allahabad to Farakka:

- ✓ The average dry season flow;
- ✓ The 1 in 2 year low flow (50% annual probability of occurrence)
- ✓ The 1in 10 year low flow (10% annual probability of occurrence)

Water level results for the reach from Tribeni to Farakka are presented in figure below:



2.1 Analysis of LAD
Least Available Depth (LAD) available from Tribeni to Allahabad was analysed to get an understanding of the variations of water depths. Data for the period April 2002 to June 2015 was used to build probability curves of LAD. The probability curves for the reaches between Barh-Doriganj are shown in Figure A-2. The curves shows the percentage of the years where LAD value lower than the value shown in the graph.

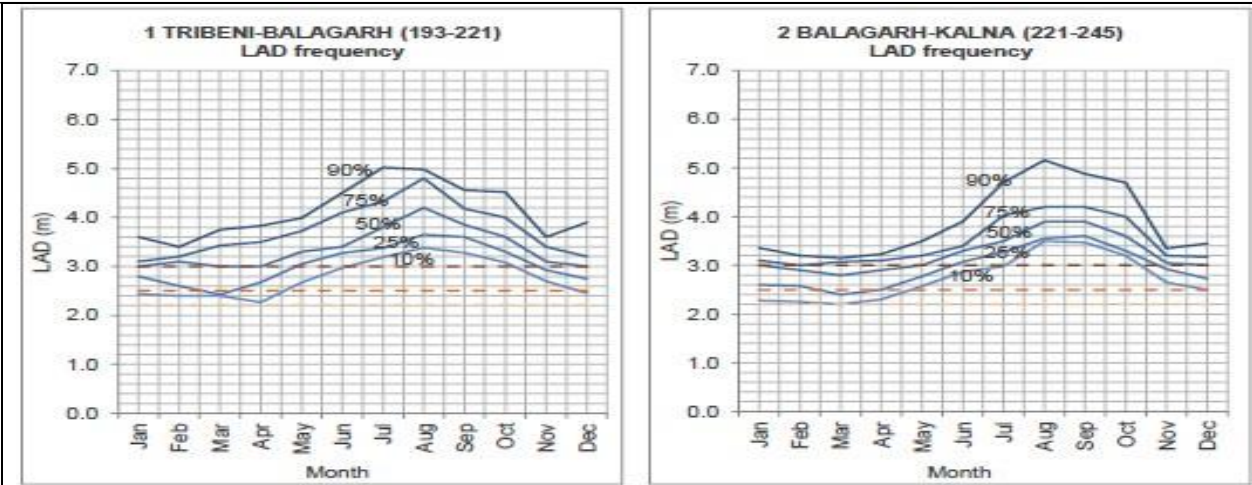


Figure 1: Reach 1 Tribeni – Balagarh LAD frequency curves

Figure 2: Reach 2 Balagarh – Kalna LAD frequency curves

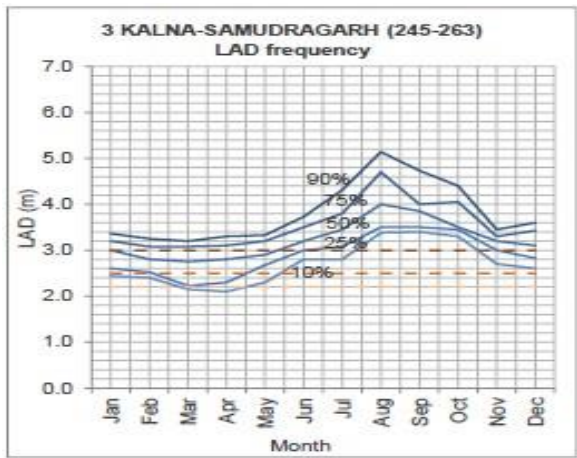


Figure 3: Reach 3 Kalna - Samudragarh LAD probability curves

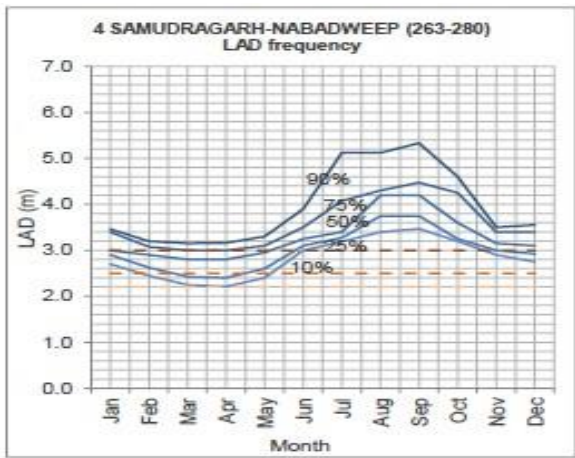


Figure 4: Reach 4 Samudragarh - Nabadweep LAD probability curves

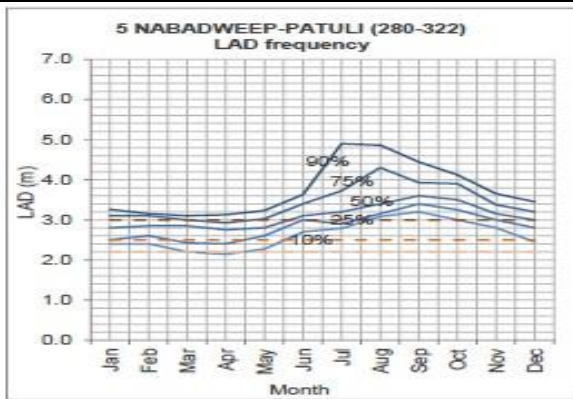


Figure 5: Reach 5 Nabadweep - Patuli LAD probability curves

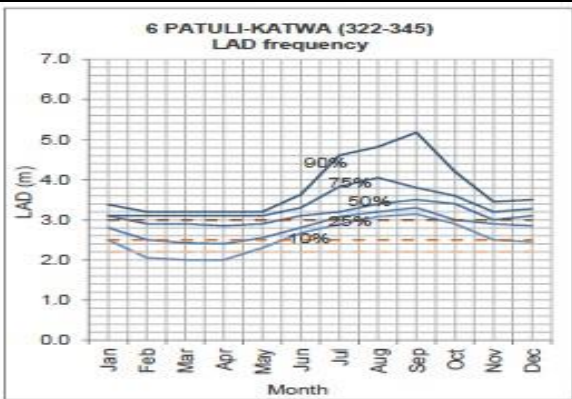


Figure 6: Reach 6 Patuli - Katwa LAD probability curves

Figure 7: Reach 7 Katwa - Palassey LAD probability curves

Figure 8: Reach 8 Palassey - Chaurigacha LAD probability curves

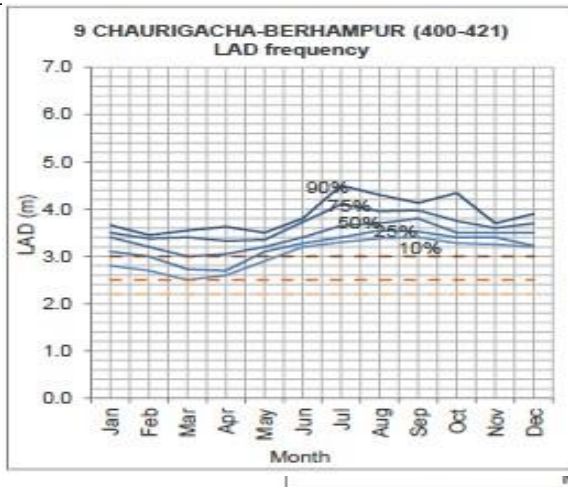


Figure 9: Reach 9 Chaurigacha - Berhampur LAD probability curves

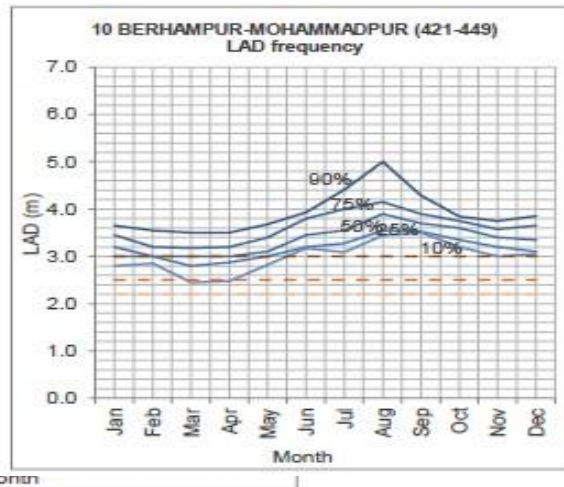


Figure 10: Reach 10 Berhampur – Mohammadpur LAD probability curves

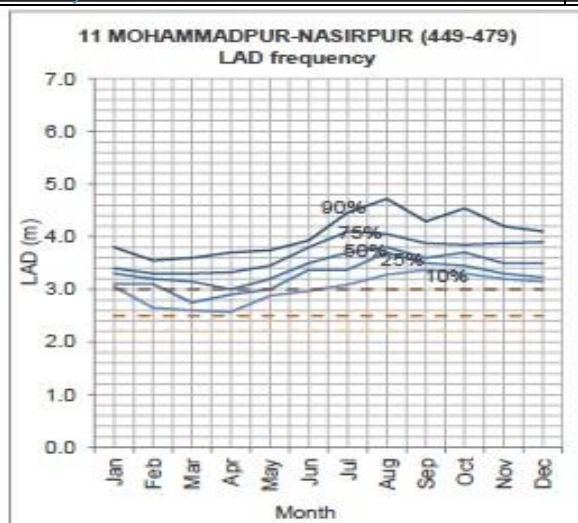


Figure 11: Reach 11 Mohammadpur - Nasirpur LAD probability curves

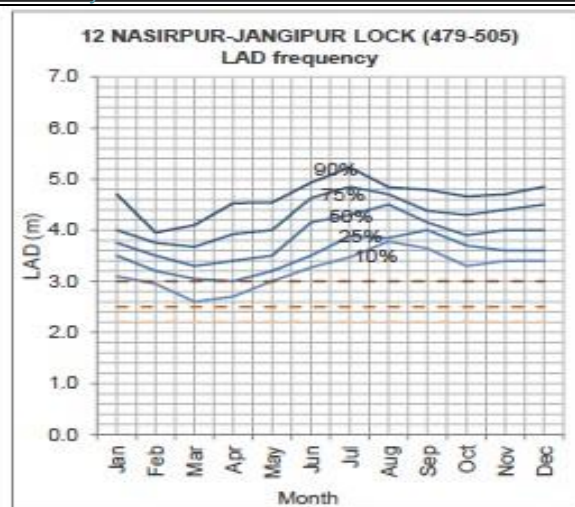


Figure 12: Reach 12 Nasirpur – Jangipur Lock LAD probability curves

Figure 13: Reach 13 Jangipur Lock – Farrakka Lock LAD probability curves

Figure A-1: Probability curves of LAD in Tribeni-Farakka

This statistical information has also been analysed to show the periods when available water depths have a 50% probability to be lower than a certain value mentioned here. The information is presented in Table A- 1below.

Table A- 1: 50% probability of LADs being lower than mentioned LAD (in metres)

| | Name | Chainage (km) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----------------|----------------------------------|---------------|--------------------|------|------|--------------------|------|------|------------|------|------|------|------|------|
| 1 | Tribeni – Balagarh | 193-221 | 3.00 | 3.10 | 3.00 | 3.00 | 3.30 | 3.40 | 3.80 | 4.20 | 3.80 | 3.60 | 3.10 | 3.00 |
| 2 | Balagarh – Kalna | 221-245 | 3.00 | 2.90 | 2.80 | 2.90 | 3.00 | 3.30 | 3.50 | 3.95 | 3.90 | 3.60 | 3.05 | 3.05 |
| 3 | Kalna - Samudragarh | 245-263 | 3.00 | 2.80 | 2.75 | 2.80 | 2.90 | 3.20 | 3.60 | 4.00 | 3.80 | 3.50 | 3.20 | 3.10 |
| 4 | Samudragarh-Nabadweep | 263-280 | 3.00 | 2.90 | 2.80 | 2.80 | 2.95 | 3.25 | 3.40 | 4.20 | 4.20 | 3.70 | 3.20 | 3.10 |
| 5 | Nabadweep – Patuli | 280-322 | 2.80 | 2.85 | 2.85 | 2.75 | 2.80 | 3.10 | 3.30 | 3.50 | 3.70 | 3.50 | 3.10 | 3.00 |
| 6 | Patuli – Katwa | 322-345 | 3.10 | 2.90 | 2.90 | 2.85 | 2.90 | 3.10 | 3.20 | 3.40 | 3.50 | 3.30 | 3.00 | 3.05 |
| 7 | Katwa – Palassey | 345-371 | 2.80 | 2.65 | 2.50 | 2.50 | 2.70 | 3.00 | 3.00 | 3.50 | 3.40 | 3.10 | 2.80 | 2.80 |
| 8 | Palassey - Chaurigacha | 371-400 | 2.90 | 2.95 | 2.80 | 2.90 | 3.00 | 3.10 | 3.10 | 3.40 | 3.40 | 3.20 | 3.05 | 3.00 |
| 9 | Chaurigacha - Berhampur | 400-421 | 3.40 | 3.20 | 3.00 | 3.05 | 3.20 | 3.40 | 3.70 | 3.70 | 3.80 | 3.55 | 3.50 | 3.50 |
| 10 | Berhampur– Mohammadpur | 421-449 | 3.20 | 3.00 | 3.00 | 3.00 | 3.10 | 3.45 | 3.60 | 3.95 | 3.70 | 3.60 | 3.40 | 3.30 |
| 11 | Mohammadpur - Nasirpur | 449-479 | 3.30 | 3.20 | 3.15 | 3.00 | 3.20 | 3.50 | 3.70 | 3.80 | 3.50 | 3.70 | 3.50 | 3.50 |
| 12 | Nasirpur – Jangipur Lock | 479-505 | 3.75 | 3.50 | 3.30 | 3.40 | 3.50 | 4.15 | 4.30 | 4.50 | 4.20 | 3.95 | 4.00 | 4.00 |
| 13 | Jangipur Lock – Farrakka Lock | 505-544 | 2.70 | 2.50 | 2.50 | 2.30 | 2.50 | 2.85 | 2.80 | 2.80 | 2.70 | 2.75 | 3.00 | 2.80 |
| Key 3.0m =< LAD | | | 2.5m =< LAD < 3.0m | | | 2.2m =< LAD < 2.5m | | | LAD < 2.2m | | | | | |

The different colours in show the range of minimum depths available. Green corresponds to the months when available depths are larger than 2.5 m. The table clearly shows the behaviour of water depths upstream of Doriganj. The LADs for the period 2006 & 2010-2015 are shown in the tables below.

Table A- 2: LAD for 2015 (in metres)

| | Name | Chainage (km) | Jan IFN | Jan IIFN | Feb IFN | Feb IIFN | Mar IFN | Mar IIFN | Apr IFN | Apr IIFN | May IFN | May IIFN | Jun IFN | Jun IIFN | Jul | Aug | Sep | Oct IFN | Oct IIFN | Nov IFN | Nov IIFN | Dec IFN | Dec IIFN |
|----|-------------------------------|---------------|-------------|----------|--------------------|----------|---------|--------------------|---------|----------|---------|------------|---------|----------|-----|-----|-----|---------|----------|---------|----------|---------|----------|
| 1 | Tribeni - Balagarh | 193-221 | 3.1 | 3.7 | 3.3 | 3.1 | 3.0 | 3.7 | 3.2 | 3.5 | 3.3 | 3.3 | 4.2 | 4.1 | 4.8 | 4.1 | 3.2 | N/A | 3.5 | 3.1 | 3.5 | 3.0 | 3.2 |
| 2 | Balagarh - Kalna | 221-245 | 3.1 | 3.3 | 3.0 | 3.0 | 3.0 | 3.3 | 3.3 | 3.5 | 3.2 | 3.5 | 3.4 | 3.4 | 4.1 | 4.0 | 3.4 | N/A | 3.7 | 3.0 | 3.3 | 3.3 | 3.2 |
| 3 | Kalna - Samudragarh | 245-263 | 3.5 | 4.0 | 3.8 | 3.3 | 3.2 | 3.6 | 3.6 | 3.6 | 3.2 | 3.3 | 3.3 | 3.5 | 3.6 | 4.1 | 3.4 | N/A | 3.5 | 3.4 | 3.3 | 3.3 | 3.3 |
| 4 | Samudragarh - Nabadweep | 263-280 | 3.4 | 3.2 | 3.4 | 3.3 | 3.2 | 3.6 | 3.3 | 3.5 | 3.3 | 3.3 | 3.4 | 3.9 | 3.6 | 4.2 | 3.6 | N/A | 3.8 | 3.5 | 3.2 | 3.2 | 3.1 |
| 5 | Nabadweep - Patuli | 280-322 | 3.2 | 3.3 | 3.2 | 3.2 | 3.1 | 3.2 | 3.3 | 3.2 | 3.1 | 3.3 | 3.4 | 3.5 | 3.5 | 4.3 | 3.7 | N/A | 3.5 | 3.0 | 3.0 | 2.9 | 2.9 |
| 6 | Patuli - Katwa | 322-345 | 3.2 | 3.2 | 3.3 | 3.2 | 3.1 | 3.3 | 3.3 | 3.3 | 3.1 | 3.2 | 3.1 | 3.3 | 3.5 | 4.0 | 3.1 | N/A | 3.2 | 2.9 | 3.0 | 2.9 | 2.8 |
| 7 | Katwa - Palassey | 345-371 | 3.1 | 3.1 | 3.1 | 3.0 | 3.0 | 3.3 | 3.1 | 3.2 | 3.3 | 3.3 | 3.4 | 3.4 | 4.0 | 4.1 | 3.7 | N/A | 3.6 | 3.2 | 3.1 | 2.9 | 2.9 |
| 8 | Palassey - Chaurigacha | 371-400 | 3.3 | 3.3 | 3.4 | 3.1 | 3.1 | 3.3 | 3.3 | 3.2 | 3.1 | 3.2 | 3.1 | 3.3 | 3.5 | 4.0 | 3.5 | N/A | 3.3 | 3.1 | 3.1 | 2.9 | 2.9 |
| 9 | Chaurigacha - Berhampur | 400-421 | 3.7 | 3.6 | 3.9 | 3.4 | 3.5 | 3.9 | 3.8 | 4.0 | 3.5 | 3.4 | 3.8 | 4.1 | 3.7 | 4.2 | 3.9 | N/A | 3.6 | 4.1 | 3.6 | 3.4 | 3.5 |
| 10 | Berhampur – Mohammadpur | 421-449 | 3.8 | 3.7 | 3.8 | 3.4 | 3.2 | 3.9 | 3.7 | 3.8 | 3.9 | 3.8 | 3.8 | 3.9 | 4.3 | 4.0 | 3.8 | N/A | 3.8 | 3.6 | 3.4 | 3.2 | 3.3 |
| 11 | Mohammadpur - Nasirpur | 449-479 | 3.3 | 3.3 | 3.3 | 3.2 | 3.0 | 3.7 | 4.0 | 3.7 | 3.8 | 3.9 | 3.9 | 3.5 | 3.8 | 4.1 | 3.5 | N/A | 3.7 | 3.5 | 3.3 | 3.3 | 3.2 |
| 12 | Nasirpur – Jangipur Lock | 479-505 | 4.1 | 4.8 | 4.6 | 4.2 | 3.3 | 4.7 | 4.9 | 4.9 | 5.0 | 5.0 | 5.0 | 4.9 | 4.7 | 4.5 | 4.6 | N/A | 4.4 | 4.0 | 4.2 | 4.0 | 4.0 |
| 13 | Jangipur Lock – Farrakka Lock | 505-544 | 3.2 | 3.2 | 3.2 | 3.2 | 2.8 | 3.1 | 3.1 | 3.1 | 3.3 | 3.2 | 3.2 | 3.3 | 3.0 | 3.4 | 3.0 | N/A | 3.0 | 3.0 | 3.0 | 2.7 | 2.7 |
| | | | 3.0m =< LAD | | 2.5m =< LAD < 3.0m | | | 2.2m =< LAD < 2.5m | | | | LAD < 2.2m | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |

Table A- 4: LAD for 2014 (in metres)

| | Name | Chainage (km) | Jan IFN | Jan IIFN | Feb IFN | Feb IIFN | Mar IFN | Mar IIFN | Apr IFN | Apr IIFN | May IFN | May IIFN | Jun IFN | Jun IIFN | Jul | Aug | Sep | Oct IFN | Oct IIFN | Nov IFN | Nov IIFN | Dec IFN | Dec IIFN |
|----|-------------------------------|--------------------|--------------------|----------|------------|----------|---------|----------|---------|----------|---------|----------|---------|----------|-----|-----|-----|---------|----------|---------|----------|---------|----------|
| 1 | Tribeni - Balagarh | 193-221 | 3.2 | 3.6 | 2.9 | 3.1 | 3.0 | 3.1 | 3.5 | 3.5 | 3.2 | 3.7 | 3.7 | 3.3 | 4.1 | 3.3 | 3.6 | 4.0 | N/A | 3.3 | 3.4 | 3.1 | 3.1 |
| 2 | Balagarh - Kalna | 221-245 | 2.8 | 3.0 | 2.9 | 2.9 | 3.0 | 3.2 | 3.1 | 3.1 | 3.2 | 3.4 | 3.3 | 3.3 | 3.5 | 3.5 | 3.6 | 3.4 | N/A | 3.3 | 3.1 | 3.1 | 3.1 |
| 3 | Kalna - Samudragarh | 245-263 | 3.3 | 3.2 | 3.2 | 3.0 | 3.0 | 3.1 | 3.0 | 3.0 | 3.2 | 3.1 | 3.1 | 3.4 | 3.3 | 3.5 | 3.5 | 3.3 | N/A | 3.5 | 3.8 | 3.7 | 3.5 |
| 4 | Samudragarh - Nabadweep | 263-280 | 2.9 | 3.2 | 2.9 | 2.9 | 3.0 | 2.9 | 3.0 | 3.1 | 3.0 | 3.1 | 3.1 | 3.2 | 3.6 | 3.8 | 3.6 | 3.3 | N/A | 3.1 | 3.4 | 3.5 | 3.6 |
| 5 | Nabadweep - Patuli | 280-322 | 3.0 | 3.0 | 2.9 | 2.9 | 2.9 | 2.9 | 3.1 | 3.0 | 3.0 | 3.0 | 3.1 | 3.1 | 3.3 | 3.1 | 3.5 | 3.3 | N/A | 3.1 | 3.1 | 3.1 | 3.2 |
| 6 | Patuli - Katwa | 322-345 | 3.1 | 3.0 | 3.0 | 3.0 | 3.0 | 3.5 | 3.1 | 3.0 | 3.1 | 3.1 | 3.1 | 3.1 | 3.2 | 3.0 | 3.5 | 3.2 | N/A | 3.0 | 3.3 | 3.2 | 3.1 |
| 7 | Katwa - Palassey | 345-371 | 2.9 | 2.8 | 3.0 | 3.0 | 3.0 | 3.0 | 3.1 | 3.0 | 3.0 | 3.1 | 3.2 | 3.3 | 3.2 | 3.4 | 3.6 | 3.3 | N/A | 3.0 | 3.0 | 3.0 | 3.1 |
| 8 | Palassey - Chaurigacha | 371-400 | 2.9 | 3.0 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.0 | 3.1 | 3.1 | 3.1 | 3.2 | 3.1 | 3.4 | 3.5 | 3.2 | N/A | 3.2 | 3.1 | 3.1 | 3.2 |
| 9 | Chaurigacha - Berhampur | 400-421 | 3.5 | 3.6 | 3.3 | 3.3 | 3.5 | 3.6 | 3.6 | 3.3 | 3.2 | 3.2 | 3.1 | 3.2 | 3.5 | 3.6 | 3.4 | 3.4 | N/A | 3.6 | 3.5 | 3.9 | 3.6 |
| 10 | Berhampur – Mohammadpur | 421-449 | 2.9 | 2.9 | 3.0 | 3.1 | 3.2 | 3.0 | 2.9 | 2.9 | 2.7 | 3.3 | 3.2 | 3.5 | 3.6 | 3.7 | 3.9 | 3.8 | N/A | 3.5 | 3.8 | 3.8 | 3.8 |
| 11 | Mohammadpur - Nasirpur | 449-479 | 3.4 | 3.3 | 3.1 | 3.2 | 3.5 | 3.3 | 3.2 | 2.9 | 3.1 | 3.3 | 3.5 | 3.3 | 3.4 | 3.3 | 3.5 | 3.6 | N/A | 3.4 | 3.4 | 3.2 | 3.2 |
| 12 | Nasirpur – Jangipur Lock | 479-505 | 3.4 | 4.0 | 3.8 | 3.2 | 3.8 | 4.3 | 4.1 | 3.7 | 3.6 | 3.5 | 3.3 | 4.1 | 4.3 | 4.5 | 4.7 | 4.9 | N/A | 4.8 | 4.9 | 4.7 | 4.4 |
| 13 | Jangipur Lock – Farrakka Lock | 505-544 | 2.8 | 2.8 | 2.8 | 2.8 | 3.0 | 2.9 | 2.6 | 2.5 | 2.6 | 4.3 | 4.6 | 3.1 | 3.1 | 3.0 | 3.0 | 3.2 | N/A | 3.1 | 3.0 | 3.0 | 3.0 |
| | 3.0m =< LAD | 2.5m =< LAD < 3.0m | 2.2m =< LAD < 2.5m | | LAD < 2.2m | | | | | | | | | | | | | | | | | | |

Table A- 4: LAD for 2013 (in metres)

| | Name | Chainage (km) | Jan IFN | Jan IIFN | Feb IFN | Feb IIFN | Mar IFN | Mar IIFN | Apr IFN | Apr IIFN | May IFN | May IIFN | Jun IFN | Jun IIFN | Jul | Aug | Sep | Oct IFN | Oct IIFN | Nov IFN | Nov IIFN | Dec IFN | Dec IIFN |
|----|-------------------------------|--------------------|--------------------|----------|------------|----------|---------|----------|---------|----------|---------|----------|---------|----------|-----|-----|-----|---------|----------|---------|----------|---------|----------|
| 1 | Tribeni - Balagarh | 193-221 | 3.9 | N/A | 4.5 | 3.5 | 3.8 | 3.5 | 3.2 | 3.5 | 3.9 | 5.3 | 4.1 | 4.0 | 3.9 | 3.7 | 3.7 | N/A | 3.8 | 3.1 | 3.5 | 3.0 | 3.1 |
| 2 | Balagarh - Kalna | 221-245 | 3.4 | N/A | 3.2 | 3.2 | 3.1 | 3.5 | 3.1 | 3.1 | 3.5 | 3.5 | 3.4 | 3.3 | 4.1 | 3.5 | 3.2 | N/A | 4.0 | 3.1 | 3.0 | 3.4 | 3.1 |
| 3 | Kalna - Samudragarh | 245-263 | 3.3 | N/A | 3.5 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.3 | 3.2 | 3.2 | 3.2 | 3.6 | 3.5 | 3.6 | N/A | 4.2 | 3.1 | 3.1 | 3.5 | 3.7 |
| 4 | Samudragarh - Nabadweep | 263-280 | 3.3 | N/A | 3.1 | 3.1 | 3.1 | 3.0 | 2.9 | 2.8 | 2.9 | 3.0 | 3.2 | 3.2 | 3.2 | 4.3 | 3.2 | N/A | 4.0 | 2.9 | 2.9 | 2.8 | 2.8 |
| 5 | Nabadweep - Patuli | 280-322 | 3.3 | N/A | 3.2 | 3.1 | 3.0 | 3.0 | 2.9 | 2.9 | 3.0 | 3.1 | 3.2 | 3.1 | 3.7 | 3.6 | 3.7 | N/A | 4.6 | 3.2 | 3.4 | 2.9 | 3.0 |
| 6 | Patuli - Katwa | 322-345 | 3.5 | N/A | 3.2 | 3.1 | 3.1 | 3.0 | 2.9 | 2.9 | 3.2 | 3.2 | 3.3 | 3.1 | 3.3 | 3.4 | 3.3 | N/A | 4.2 | 2.9 | 2.9 | 3.0 | 3.0 |
| 7 | Katwa - Palassey | 345-371 | 3.3 | N/A | 3.1 | 3.0 | 3.0 | 3.0 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.0 | 3.0 | 3.4 | 3.0 | N/A | 3.3 | 2.8 | 2.8 | 2.7 | 2.8 |
| 8 | Palassey - Chaurigacha | 371-400 | 3.3 | N/A | 3.4 | 3.0 | 3.0 | 3.4 | 3.0 | 2.9 | 3.4 | 3.2 | 3.2 | 3.1 | 3.6 | 3.9 | 3.6 | N/A | 4.2 | 2.9 | 3.0 | 3.0 | 3.1 |
| 9 | Chaurigacha - Berhampur | 400-421 | 3.4 | N/A | 3.2 | 3.2 | 3.2 | 3.4 | 3.1 | 3.0 | 3.5 | 3.2 | 3.5 | 3.2 | 3.9 | 4.3 | 3.9 | N/A | 4.5 | 3.5 | 3.7 | 3.6 | 3.9 |
| 10 | Berhampur – Mohammadpur | 421-449 | 3.0 | 3.2 | 3.5 | 3.2 | 3.3 | 3.1 | 3.1 | 3.0 | 3.5 | 3.2 | 3.9 | 3.7 | 3.5 | 4.2 | 3.5 | N/A | 4.0 | 3.3 | 3.1 | 3.4 | 3.1 |
| 11 | Mohammadpur - Nasirpur | 449-479 | 3.1 | 3.2 | 3.5 | 3.3 | 3.2 | 3.2 | 3.1 | 3.0 | 3.2 | 3.2 | 3.7 | 3.6 | 4.2 | 4.1 | 4.2 | N/A | 3.8 | 3.4 | 3.3 | 3.9 | 3.5 |
| 12 | Nasirpur – Jangipur Lock | 479-505 | 3.6 | 4.0 | 3.5 | 3.6 | 3.4 | 3.6 | 3.5 | 3.1 | 3.9 | 4.2 | 4.7 | 4.9 | 4.4 | 5.0 | 4.4 | N/A | 5.2 | 4.1 | 4.1 | 4.9 | 3.8 |
| 13 | Jangipur Lock – Farrakka Lock | 505-544 | 3.6 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 2.9 | 3.1 | 3.0 | 3.2 | 3.2 | 3.3 | 3.4 | 3.3 | N/A | 3.3 | 3.1 | 3.1 | 3.1 | 3.0 |
| | Key ; | | | | | | | | | | | | | | | | | | | | | | |
| | 3.0m =< LAD | 2.5m =< LAD < 3.0m | 2.2m =< LAD < 2.5m | | LAD < 2.2m | | | | | | | | | | | | | | | | | | |

Table A- 4: LAD for 2012 (in metres)

| | Name | Chainage (km) | Jan IFN | Jan IIFN | Feb IFN | Feb IIFN | Mar IFN | Mar IIFN | Apr IFN | Apr IIFN | May IFN | May IIFN | Jun IFN | Jun IIFN | Jul | Aug | Sep | Oct | Oct | Nov | Nov | Dec | Dec |
|----|-------------------------------|---------------|-------------|--------------------|--------------------|----------|------------|----------|---------|----------|---------|----------|---------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | Tribeni - Balagarh | 193-221 | 3.1 | 3.0 | 3.2 | 3.4 | 3.5 | 3.2 | 3.0 | 3.5 | 3.8 | 3.5 | 3.4 | 5.1 | 4.1 | 5.6 | 4.7 | 4.2 | N/A | 3.3 | 3.9 | 4.4 | 3.3 |
| 2 | Balagarh - Kalna | 221-245 | 3.2 | 2.8 | 3.0 | 2.8 | 3.1 | 3.1 | 3.1 | 3.1 | 3.2 | 3.1 | 3.4 | 3.9 | 4.0 | 4.2 | 4.1 | 3.9 | N/A | 3.3 | 3.6 | 3.5 | 3.1 |
| 3 | Kalna - Samudragarh | 245-263 | 3.2 | 3.0 | 2.9 | 2.8 | 3.0 | 3.5 | 3.1 | 3.3 | 3.4 | 3.4 | 3.6 | 3.7 | 3.7 | 3.9 | 3.5 | 3.5 | N/A | 3.4 | 3.3 | 3.1 | 3.1 |
| 4 | Samudragarh - Nabadweep | 263-280 | 3.0 | 3.0 | 2.9 | 2.2 | 2.7 | 3.0 | 3.1 | 3.3 | 3.2 | 3.3 | 3.4 | 3.7 | 3.4 | 3.7 | 5.0 | 3.6 | N/A | 3.4 | 3.2 | 3.1 | 3.1 |
| 5 | Nabadweep - Patuli | 280-322 | 3.2 | 3.0 | 3.0 | 2.5 | 3.0 | 3.2 | 3.1 | 3.1 | 3.2 | 3.1 | 3.4 | 3.7 | 3.6 | 3.7 | 3.7 | 3.8 | N/A | 3.7 | 3.6 | 3.3 | 3.2 |
| 6 | Patuli - Katwa | 322-345 | 3.1 | 3.1 | 2.7 | 2.0 | 3.0 | 3.3 | 3.1 | 3.1 | 3.2 | 3.2 | 3.1 | 3.6 | 3.2 | 3.0 | 3.3 | 3.4 | N/A | 3.5 | 3.3 | 3.1 | 3.2 |
| 7 | Katwa - Palassey | 345-371 | 3.0 | 3.0 | 2.7 | 2.0 | 2.5 | 3.2 | 2.8 | 3.0 | 3.3 | 3.1 | 3.2 | 3.4 | 3.5 | 3.1 | 3.4 | 3.1 | N/A | 2.8 | 2.6 | 3.2 | 3.2 |
| 8 | Palassey - Chaurigacha | 371-400 | 2.6 | 2.6 | 2.7 | 2.7 | 2.7 | 2.8 | 3.1 | 3.5 | 3.3 | 3.0 | 3.3 | 3.6 | 3.7 | 3.5 | 3.4 | 3.2 | N/A | 3.4 | 3.1 | 3.0 | 3.1 |
| 9 | Chaurigacha - Berhampur | 400-421 | 2.8 | 2.8 | 2.7 | 2.0 | 2.5 | 2.8 | 3.2 | 3.5 | 3.2 | 3.2 | 3.2 | 3.8 | 3.6 | 3.7 | 3.4 | 3.4 | N/A | 3.4 | 3.4 | 3.5 | 3.5 |
| 10 | Berhampur – Mohammadpur | 421-449 | 2.2 | 2.6 | 2.7 | 2.5 | 2.8 | 3.0 | 3.0 | 3.0 | 3.1 | 3.0 | 3.0 | 3.1 | 3.4 | 3.2 | 3.3 | 3.2 | N/A | 3.0 | 3.0 | 3.0 | 3.1 |
| 11 | Mohammadpur - Nasirpur | 449-479 | 2.5 | 2.5 | 2.7 | 2.7 | 3.0 | 3.1 | 3.0 | 3.6 | 3.2 | 3.0 | 3.0 | 3.8 | 3.7 | 3.2 | 3.7 | 3.6 | N/A | 3.5 | 3.3 | 3.1 | 3.4 |
| 12 | Nasirpur – Jangipur Lock | 479-505 | 2.9 | 2.9 | 3.1 | 2.9 | 3.0 | 3.2 | 3.3 | 3.9 | 3.0 | 3.2 | 3.3 | 4.6 | 4.2 | 4.2 | 4.3 | 4.3 | N/A | 3.6 | 4.0 | 4.1 | 3.6 |
| 13 | Jangipur Lock – Farrakka Lock | 505-544 | 2.0 | 2.5 | 2.0 | 1.7 | 2.5 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 3.0 | 3.1 | 3.2 | 3.1 | 3.2 | 3.1 | N/A | 3.0 | 3.0 | 3.0 | 3.1 |
| | | | Key ; | | | | | | | | | | | | | | | | | | | | |
| | | | 3.0m =< LAD | 2.5m =< LAD < 3.0m | 2.2m =< LAD < 2.5m | | LAD < 2.2m | | | | | | | | | | | | | | | | |

Table A- 4: LAD for 2011 (in metres)

| | Name | Chainage (km) | Jan IFN | Jan | Feb IFN | Feb IFN | Mar IFN | Mar | Apr IFN | Apr IFN | May IFN | May | Jun IFN | Jun IFN | Jul | Aug | Sep | Oct IFN | Oct | Nov IFN | Nov IFN | Dec IFN | Dec |
|--------------------------------------------------------------------|-------------------------------|---------------|---------|-----|---------|---------|---------|-----|---------|---------|---------|-----|---------|---------|-----|-----|-----|---------|-----|---------|---------|---------|-----|
| 1 | Tribeni - Balagarh | 193-221 | 3.6 | 3.4 | 3.4 | 3.2 | 3.2 | 4.1 | 4.6 | 4.7 | 3.6 | 4.2 | 5.1 | 4.1 | 3.6 | 3.4 | 4.1 | 3.1 | 3.1 | 3.1 | 3.6 | 3.2 | 3.2 |
| 2 | Balagarh - Kalna | 221-245 | 3.6 | 3.4 | 3.2 | 3.2 | 3.1 | 2.9 | 3.1 | 3.2 | 3.0 | 4.0 | 4.6 | 3.9 | 3.5 | 5.1 | 3.9 | 3.2 | 3.2 | 3.4 | 3.2 | 3.2 | 3.2 |
| 3 | Kalna - Samudragarh | 245-263 | 3.3 | 3.4 | 3.2 | 3 | 3.0 | 2.7 | 2.9 | 3.3 | 3.4 | 3.1 | 4.3 | 4.5 | 3.2 | 5.3 | 3.8 | 3.4 | 3.4 | 3.2 | 3.2 | 3.2 | 3.2 |
| 4 | Samudragarh - Nabadweep | 263-280 | 3.5 | 3.5 | 3.2 | 3.1 | 3.0 | 2.6 | 2.8 | 3.0 | 3.1 | 3.6 | 3.9 | 3.1 | 3.3 | 4.2 | 3.9 | 3.2 | 3.2 | 3.4 | 3.4 | 3.4 | 3.4 |
| 5 | Nabadweep - Patuli | 280-322 | 3.1 | 3.5 | 3.1 | 3.1 | 3.1 | 2.7 | 2.7 | 3.5 | 3.3 | 3.3 | 4.4 | 3.3 | 3.1 | 3.6 | 3.5 | 3.3 | 3.3 | 3.2 | 3.2 | 3.4 | 3.5 |
| 6 | Patuli - Katwa | 322-345 | 3.5 | 3.5 | 3.1 | 3.1 | 3.1 | 2.7 | 2.9 | 3.2 | 3.0 | 3.0 | 4.4 | 3.5 | 3.2 | 5.7 | 4.1 | 3.5 | 3.5 | 3.5 | 3.4 | 3.5 | 3.3 |
| 7 | Katwa - Palassey | 345-371 | 3.1 | 3.2 | 2.8 | 2.8 | 2.7 | 2.5 | 2.5 | 2.9 | 3.0 | 3.0 | 4.2 | 3.3 | 3.0 | 5.3 | 4.1 | 3.2 | 3.2 | 2.8 | 2.8 | 2.8 | 2.8 |
| 8 | Palassey - Chaurigacha | 371-400 | 3.1 | 3.1 | 3 | 3.1 | 2.8 | 2.5 | 2.8 | 3.0 | 3.1 | 3.1 | 3.8 | 4.0 | 3.2 | 4.3 | 4.1 | 3.2 | 3.2 | 3.3 | 3.2 | 3.0 | 3.3 |
| 9 | Chaurigacha - Berhampur | 400-421 | 3.5 | 3.5 | 3.3 | 3.1 | 2.8 | 2.6 | 2.7 | 3.0 | 3.1 | 3.1 | 4.3 | 3.8 | 3.2 | 4.0 | 4.2 | 3.3 | 3.3 | 3.6 | 3.6 | 3.3 | 3.3 |
| 10 | Berhampur – Mohammadpur | 421-449 | 3.5 | 3.3 | 3 | 3 | 3.0 | 2.5 | 2.7 | 3.0 | 3.4 | 3.1 | 4.2 | 3.9 | 3.1 | 5.1 | 4.1 | 3.6 | 3.6 | 3.7 | 3.8 | 3.4 | 3.3 |
| 11 | Mohammadpur - Nasirpur | 449-479 | 3.5 | 3.3 | 3.2 | 3.2 | 3.2 | 2.7 | 3.0 | 3.3 | 3.8 | 3.5 | 4.7 | 3.6 | 3.1 | 5.1 | 3.3 | 3.7 | 3.7 | 3.2 | 3.8 | 3.8 | 3.6 |
| 12 | Nasirpur – Jangipur Lock | 479-505 | 3.8 | 4.0 | 3.6 | 3.6 | 3.6 | 3.3 | 3.0 | 4.0 | 4.1 | 3.9 | 5.3 | 4.2 | 3.5 | 5.1 | 5.0 | 3.7 | 3.7 | 3.5 | 3.6 | 4.2 | 3.7 |
| 13 | Jangipur Lock – Farrakka Lock | 505-544 | 3.1 | 3.0 | 2.5 | 2.3 | 2.1 | 1.4 | 1.4 | 2.0 | 2.0 | 2.2 | 3.2 | 3.2 | 3.2 | 3.7 | 3.3 | 3.1 | 3.1 | 3.8 | 4.0 | 2.7 | 2.7 |
| Key ; | | | | | | | | | | | | | | | | | | | | | | | |
| 3.0m =< LAD 2.5m =< LAD < 3.0m 2.2m =< LAD < 2.5m LAD < 2.2m | | | | | | | | | | | | | | | | | | | | | | | |

Table A- 4: LAD for 2010 (in metres)

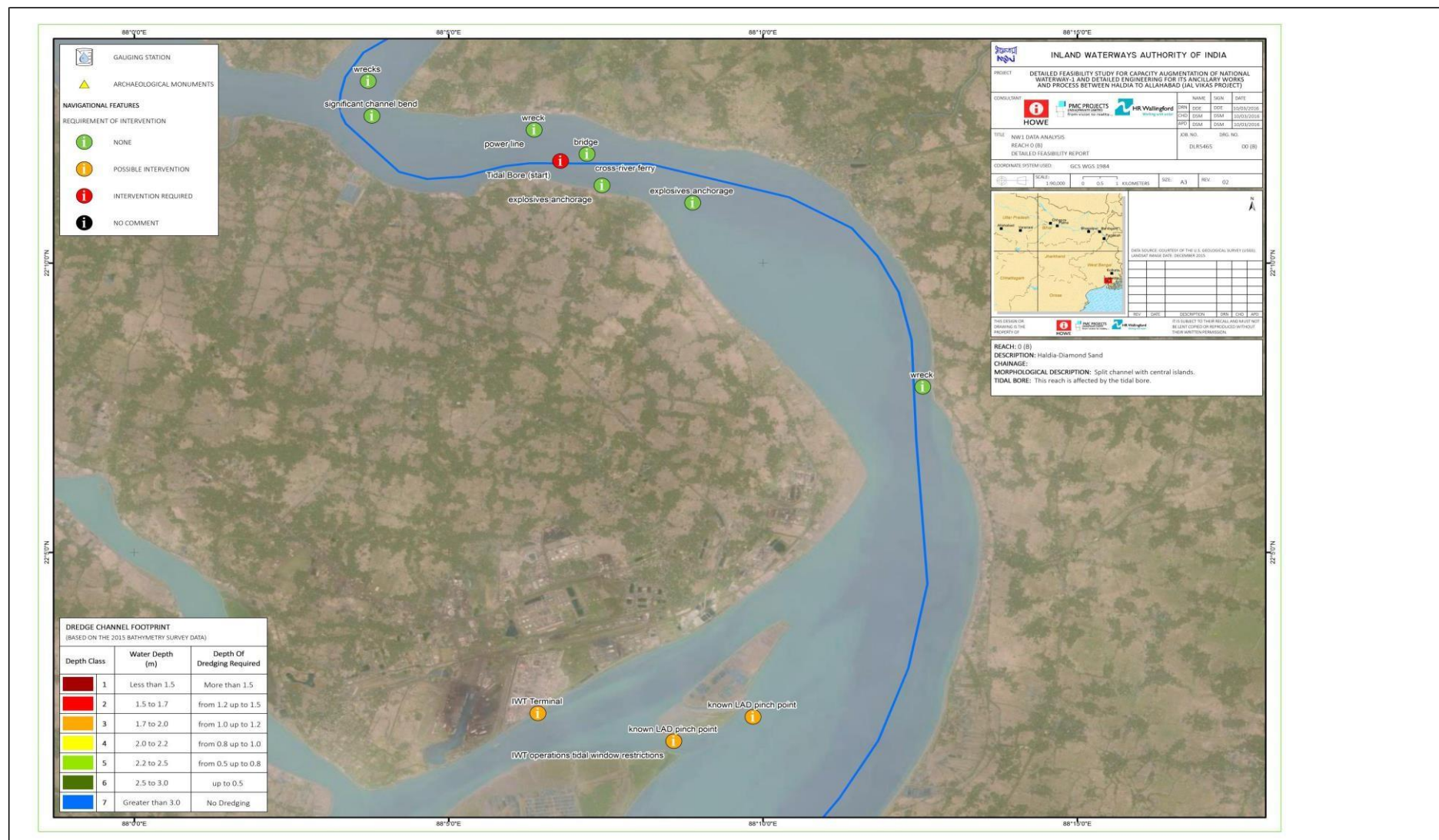
| | Name | Chainage (km) | Jan IFN | Jan IFN | Feb IFN | Feb IFN | Mar IFN | Mar IFN | Apr IFN | Apr IFN | May IFN | May IFN | Jun IFN | Jun IFN | Jul | Aug | Sep | Oct IFN | Oct IFN | Nov IFN | Nov IFN | Dec IFN | Dec IFN |
|--------------------------------------------------------------------|-------------------------------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----|-----|-----|---------|---------|---------|---------|---------|---------|
| 1 | Tribeni - Balagarh | 193-221 | 3.1 | 3.0 | 3.4 | 3.2 | 3.1 | 3.6 | 3.9 | 3.0 | 4.4 | 3.9 | 3.4 | 4.0 | 3.7 | 4.5 | 4.2 | 4.5 | N/A | 3.4 | 3.6 | 3.4 | 4.2 |
| 2 | Balagarh - Kalna | 221-245 | 3.0 | 3.0 | 3.0 | 3.0 | 2.6 | 2.5 | 3.0 | 2.7 | 3.0 | 3.0 | 3.0 | 3.4 | 3.4 | 4.0 | 3.8 | 3.2 | N/A | 3.2 | 3.2 | 3.3 | 3.5 |
| 3 | Kalna - Samudragarh | 245-263 | 3.0 | 3.0 | 3.0 | 2.5 | 2.1 | 1.5 | 2.1 | 2.0 | 2.3 | 2.8 | 3.0 | 3.0 | 2.8 | 3.5 | 3.4 | 3.3 | N/A | 3.4 | 3.2 | 3.5 | 3.5 |
| 4 | Samudragarh - Nabadweep | 263-280 | 3.4 | 3.4 | 3.0 | 3.0 | 2.4 | 2.3 | 3.0 | 3.0 | 2.8 | 2.6 | 3.1 | 3.5 | 3.0 | 4.0 | 3.7 | 3.2 | N/A | 3.7 | 3.3 | 3.4 | 3.6 |
| 5 | Nabadweep - Patuli | 280-322 | 3.2 | 3.0 | 3.1 | 2.9 | 2.5 | 2.0 | 2.6 | 2.5 | 2.7 | 2.2 | 3.0 | 3.1 | 3.0 | 3.4 | 3.2 | 3.2 | N/A | 3.2 | 3.2 | 3.2 | 3.1 |
| 6 | Patuli - Katwa | 322-345 | 3.1 | 3.1 | 3.0 | 2.8 | 2.8 | 2.0 | 3.0 | 2.4 | 2.2 | 2.3 | 2.5 | 2.8 | 2.6 | 3.1 | 3.5 | 3.1 | N/A | 3.0 | 3.2 | 3.2 | 3.2 |
| 7 | Katwa - Palassey | 345-371 | 3.0 | 3.0 | 3.0 | 3.0 | 2.4 | 1.5 | 2.2 | 1.6 | 2.3 | 2.2 | 2.5 | 3.2 | 2.9 | 3.2 | 3.1 | 3.1 | N/A | 3.3 | 3.2 | 3.1 | 3.1 |
| 8 | Palassey - Chaurigacha | 371-400 | 3.0 | 3.0 | 3.0 | 3.0 | 2.6 | 2.0 | 3.0 | 2.1 | 3.0 | 2.5 | 3.0 | 3.3 | 3.1 | 3.4 | 3.3 | 3.0 | N/A | 3.1 | 3.3 | 3.3 | 3.1 |
| 9 | Chaurigacha - Berhampur | 400-421 | 3.8 | 3.5 | 3.2 | 3.0 | 2.8 | 2.2 | 3.0 | 2.2 | 3.3 | 2.8 | 3.3 | 3.6 | 3.6 | 3.8 | 3.4 | 3.0 | N/A | 3.3 | 4.0 | 3.5 | 3.5 |
| 10 | Berhampur – Mohammadpur | 421-449 | 3.0 | 3.2 | 3.0 | 3.0 | 2.5 | 2.0 | 2.9 | 2.1 | 3.4 | 3.0 | 3.5 | 3.4 | 3.0 | 3.8 | 3.6 | 3.1 | N/A | 3.6 | 3.4 | 3.5 | 3.2 |
| 11 | Mohammadpur - Nasirpur | 449-479 | 3.4 | 3.3 | 3.7 | 3.0 | 2.9 | 2.6 | 3.0 | 2.2 | 3.0 | 3.2 | 3.5 | 3.9 | 3.6 | 3.8 | 3.5 | 3.1 | N/A | 3.7 | 4.1 | 3.9 | 4.0 |
| 12 | Nasirpur – Jangipur Lock | 479-505 | 3.7 | 3.1 | 3.9 | 3.2 | 3.3 | 2.3 | 3.0 | 2.5 | 4.2 | 3.2 | 3.8 | 4.4 | 3.8 | 4.8 | 4.0 | 3.7 | N/A | 3.4 | 4.0 | 4.8 | 4.5 |
| 13 | Jangipur Lock – Farrakka Lock | 505-544 | 3.0 | 3.0 | 3.0 | 2.7 | 2.0 | 1.9 | 1.9 | 1.9 | 2.2 | 1.8 | 2.6 | 2.6 | 2.6 | 2.8 | 2.6 | 3.0 | N/A | 3.0 | 3.2 | 3.0 | 3.1 |
| Key ; | | | | | | | | | | | | | | | | | | | | | | | |
| 3.0m =< LAD 2.5m =< LAD < 3.0m 2.2m =< LAD < 2.5m LAD < 2.2m | | | | | | | | | | | | | | | | | | | | | | | |

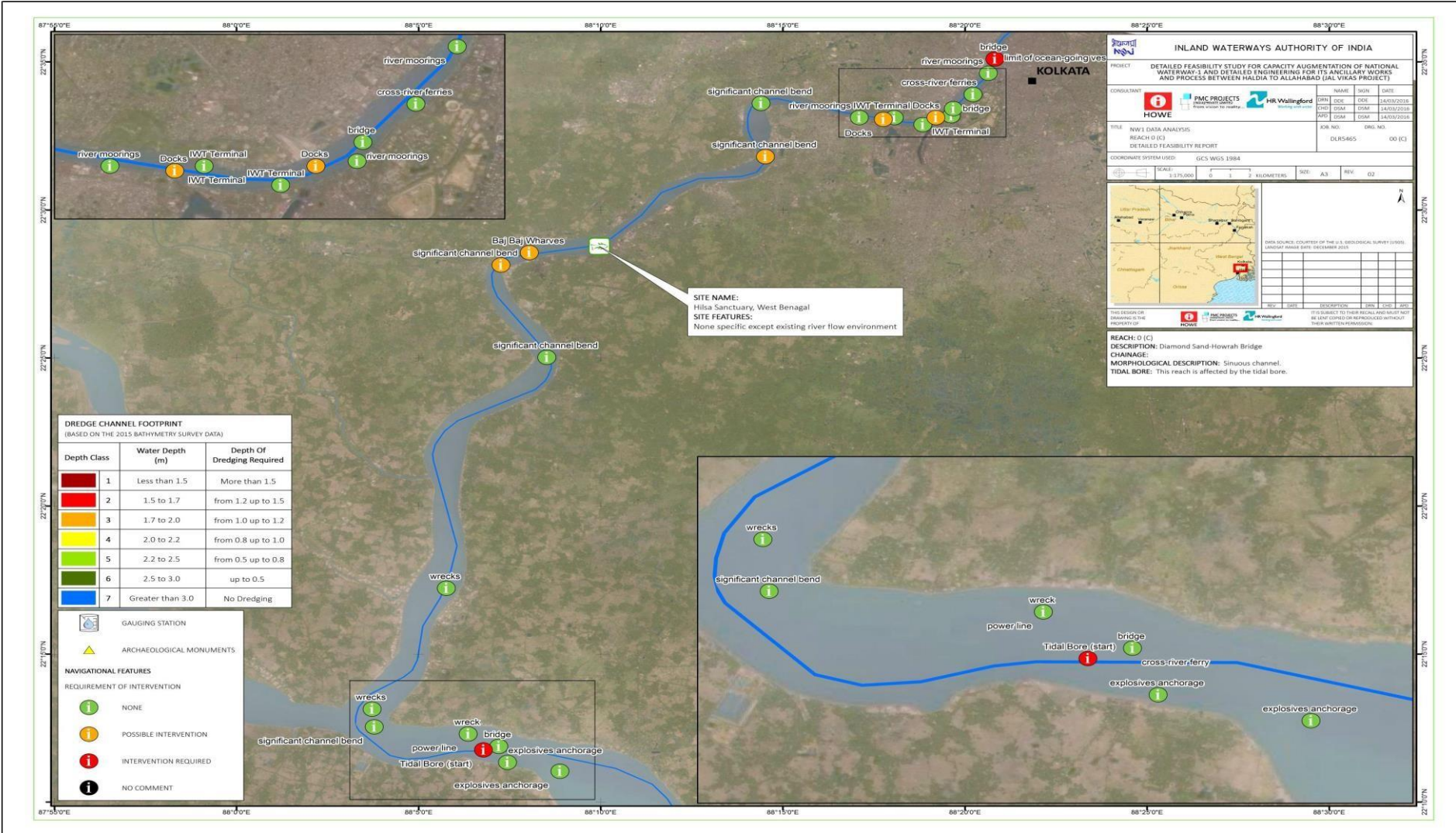
Table A- 4: LAD for 2006 (in metres)

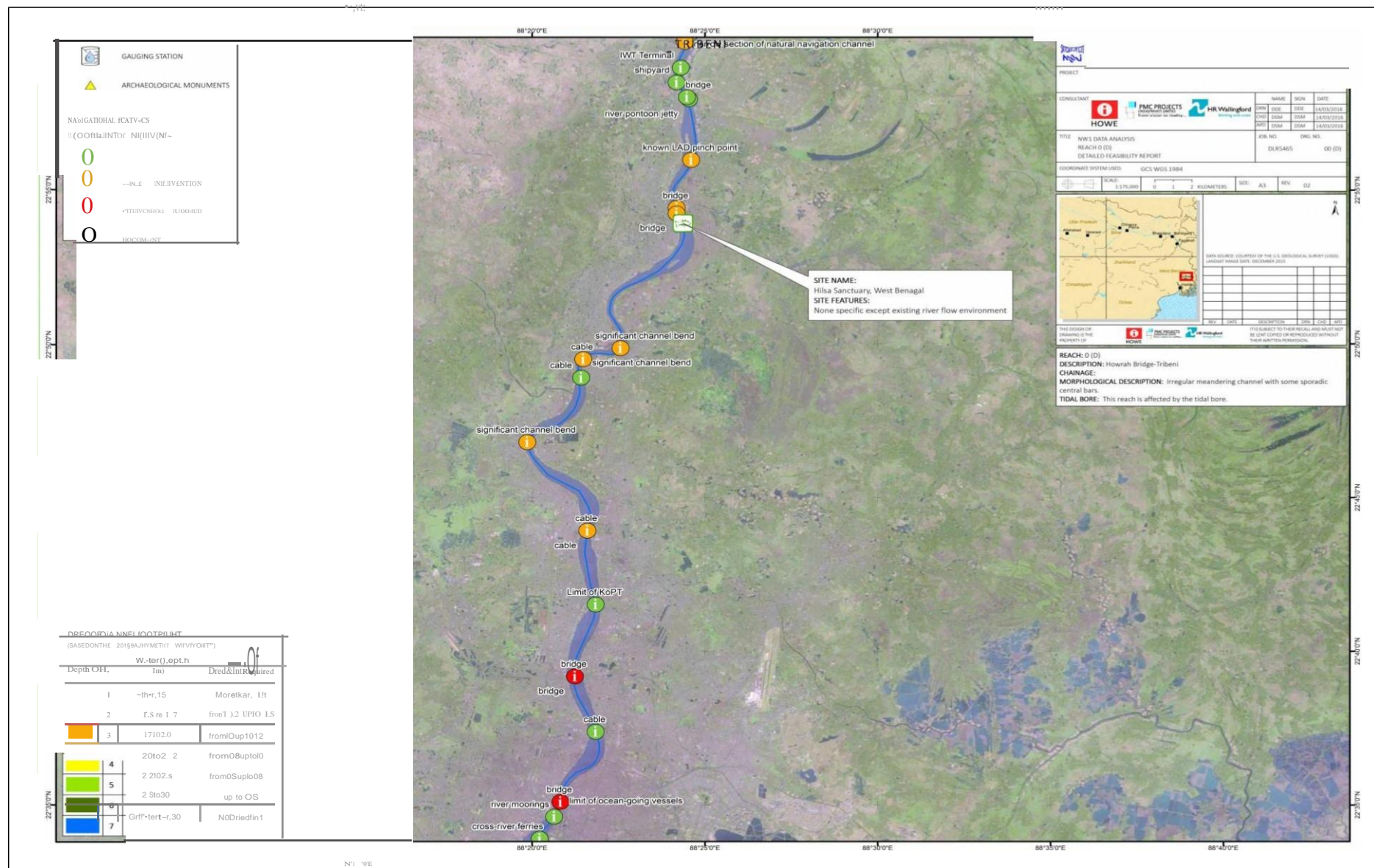
| | Name | Chainage (km) | Jan IFN | Jan IFN | Feb IFN | Feb IFN | Mar IFN | Mar IFN | Apr IFN | Apr IFN | May IFN | May IFN | Jun IFN | Jun IFN | Jul IFN | Jul IFN | Aug IFN | Aug IFN | Sep IFN | Sep IFN | Oct IFN | Oct IFN | Nov IFN | Nov IFN | Dec IFN | Dec IFN | | |
|----|-------------------------------|--------------------|--------------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|
| 1 | Tribeni - Balagarh | 193-221 | 2.8 | 2.8 | 3.1 | 2.4 | 2.4 | 2.5 | 2.1 | 2.9 | 2.9 | 2.7 | 3.1 | 3.4 | 3.1 | 4.9 | 4.9 | 4.6 | 3.7 | 5.6 | 3.7 | 2.9 | 2.8 | 2.9 | 2.9 | 2.7 | | |
| 2 | Balagarh - Kalna | 221-245 | 3.1 | 3.1 | 3.1 | 2.1 | 2.1 | 2.4 | 1.8 | 2.7 | 2.4 | 2.6 | 3.5 | 3.1 | 2.8 | 4.8 | 4.1 | 3.6 | 3.9 | 5.9 | 4.0 | 3.7 | 3.2 | 3.0 | 2.8 | 2.7 | | |
| 3 | Kalna - Samudragarh | 245-263 | 3.2 | 3.1 | 3.1 | 2.4 | 2.0 | 2.6 | 1.8 | 2.8 | 2.3 | 2.8 | 3.8 | 3.1 | 2.8 | 5.5 | 4.4 | 4.7 | 4.7 | 5.3 | 4.1 | 3.5 | 3.2 | 3.1 | 3.0 | 2.7 | | |
| 4 | Samudragarh - Nabadweep | 263-280 | 3.4 | 3.0 | 3.0 | 2.5 | 2.2 | 2.7 | 1.9 | 2.7 | 2.5 | 2.7 | 4.2 | 3.1 | 3.3 | 4.8 | 4.2 | 4.3 | 4.5 | 6.1 | 4.6 | 3.0 | 3.0 | 3.0 | 3.0 | 2.7 | | |
| 5 | Nabadweep - Patuli | 280-322 | 2.4 | 2.4 | 2.6 | 2.1 | 1.8 | 2.6 | 1.5 | 2.5 | 2.2 | 2.6 | 3.5 | 2.7 | 2.5 | 4.9 | 4.3 | 4.3 | 3.7 | 5.3 | 3.8 | 3.0 | 3.0 | 3.0 | 3.0 | 2.8 | | |
| 6 | Patuli - Katwa | 322-345 | 3.0 | 3.0 | 2.8 | 2.1 | 1.6 | 2.6 | 1.5 | 2.8 | 2.4 | 2.6 | 3.7 | 2.7 | 3.2 | 4.7 | 3.2 | 3.2 | 3.0 | 6.5 | 3.7 | 3.5 | 3.0 | 3.0 | 3.0 | 2.8 | | |
| 7 | Katwa - Palassey | 345-371 | 2.8 | 2.8 | 2.8 | 2.0 | 1.6 | 2.2 | 1.5 | 2.5 | 2.3 | 2.5 | 2.7 | 2.4 | 2.7 | 4.7 | 3.9 | 3.9 | 3.5 | 4.4 | 3.1 | 2.6 | 2.8 | 2.6 | 2.5 | 2.4 | | |
| 8 | Palassey - Chaurigacha | 371-400 | 3.2 | 3.2 | 3.2 | 2.0 | 2.2 | 2.7 | 2.2 | 3.1 | 2.5 | 2.7 | 2.9 | 2.6 | 2.8 | 4.5 | 3.7 | 3.4 | 3.3 | 4.9 | 3.2 | 3.1 | 3.0 | 3.0 | 2.8 | 2.8 | | |
| 9 | Chaurigacha - Berhampur | 400-421 | 3.5 | 3.1 | 3.0 | 2.5 | 2.5 | 2.7 | 1.8 | 3.0 | 2.5 | 2.9 | 3.4 | 3.1 | 3.3 | 4.0 | 3.3 | 3.7 | 3.8 | 5.0 | 3.5 | 3.6 | 3.5 | 3.5 | 3.2 | 3.0 | | |
| 10 | Berhampur – Mohammadpur | 421-449 | 3.8 | 3.2 | 3.0 | 2.5 | 2.4 | 3.5 | 2.2 | 3.5 | 3.1 | 3.9 | 3.2 | 3.0 | 3.3 | 3.7 | 3.1 | 4.4 | 3.7 | 3.8 | 3.6 | 3.8 | 3.7 | 3.7 | 3.3 | 3.5 | | |
| 11 | Mohammadpur - Nasirpur | 449-479 | 3.8 | 3.8 | 3.1 | 2.6 | 2.5 | 3.3 | 2.1 | 3.0 | 2.7 | 3.7 | 3.4 | 3.5 | 3.7 | 4.1 | 4.0 | 4.2 | 3.7 | 4.2 | 4.0 | 4.5 | 4.2 | 4.4 | 4.1 | 3.6 | | |
| 12 | Nasirpur – Jangipur Lock | 479-505 | 4.5 | 4.8 | 3.3 | 3.0 | 3.2 | 3.3 | 2.9 | 3.6 | 3.5 | 3.1 | 4.2 | 4.0 | 4.3 | 4.7 | 4.7 | 4.8 | 4.2 | 4.7 | 4.6 | 4.4 | 4.4 | 4.4 | 4.4 | 4.7 | | |
| 13 | Jangipur Lock – Farrakka Lock | 505-544 | 2.7 | 2.7 | 1.4 | 1.5 | 0.9 | 0.7 | 0.8 | 2.2 | 2.2 | 2.5 | 2.4 | 2.1 | 2.7 | 2.8 | 2.6 | 2.6 | 2.7 | 2.6 | 2.9 | 2.8 | 3.0 | 3.0 | 2.8 | 2.7 | | |
| | Key ; | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3.0m =< LAD | 2.5m =< LAD < 3.0m | 2.2m =< LAD < 2.5m | LAD < 2.2m | | | | | | | | | | | | | | | | | | | | | | | | |

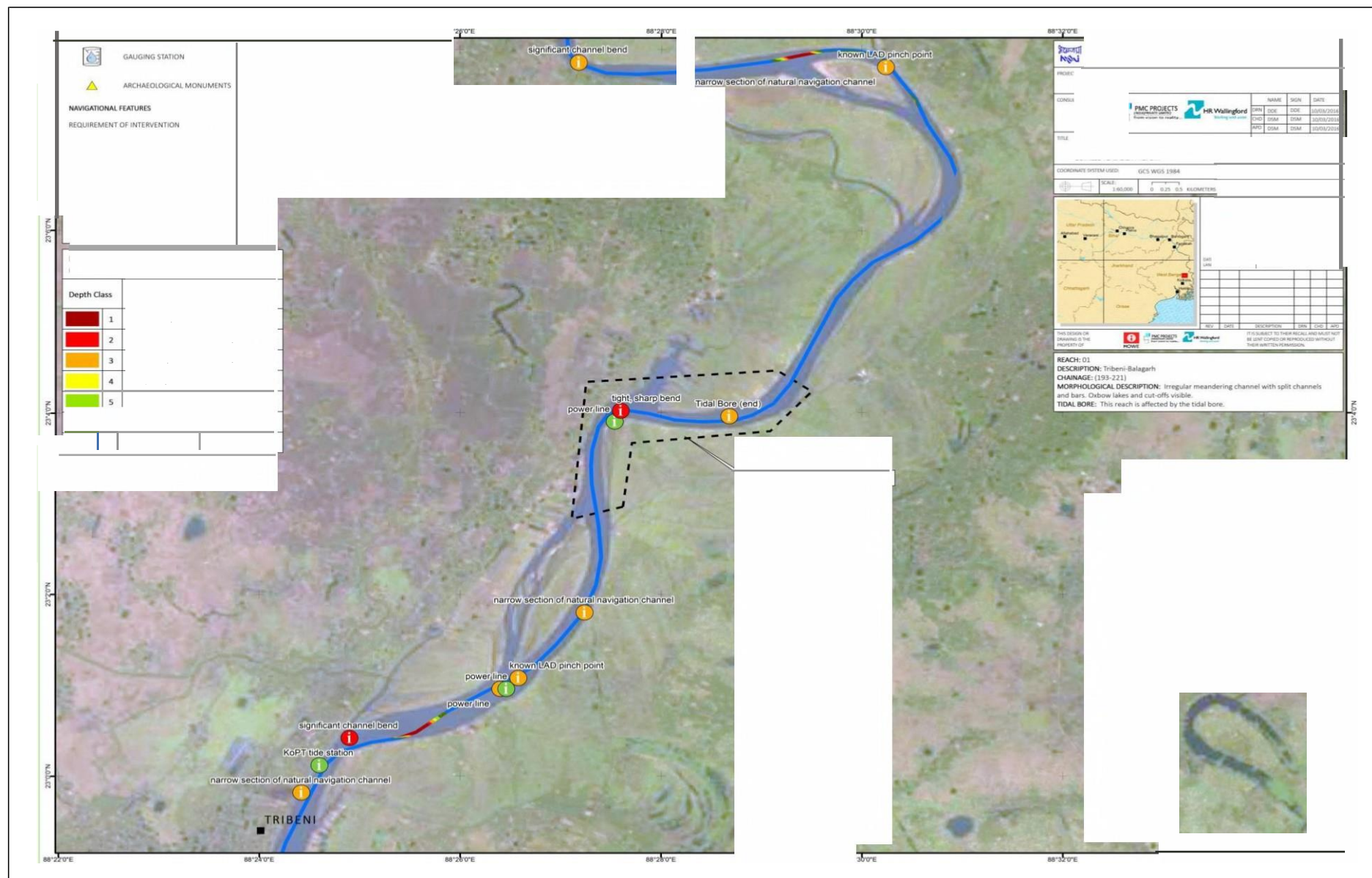
AnnexureC River Reach Figures: Farraka - Tribeni 351 Km

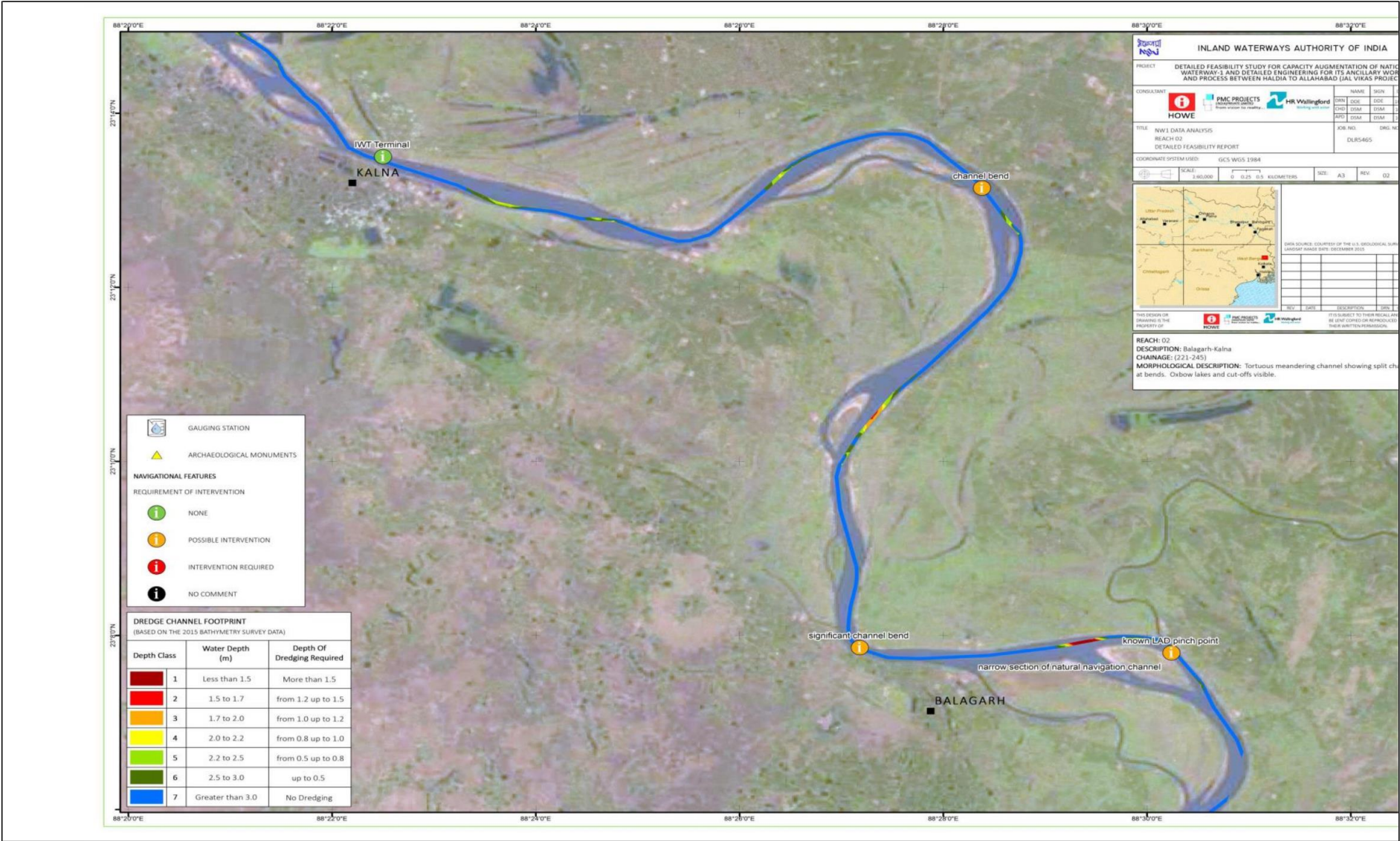


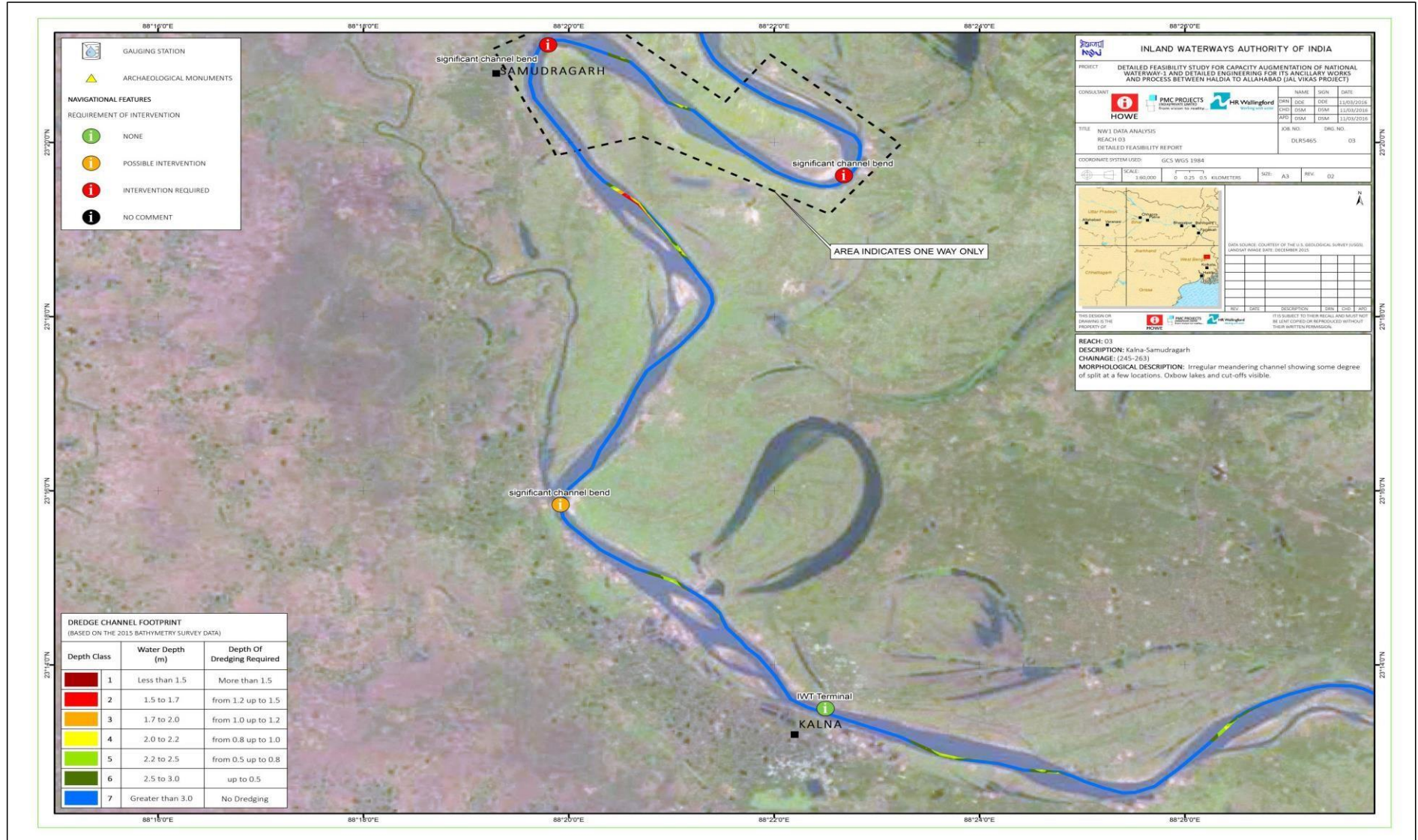


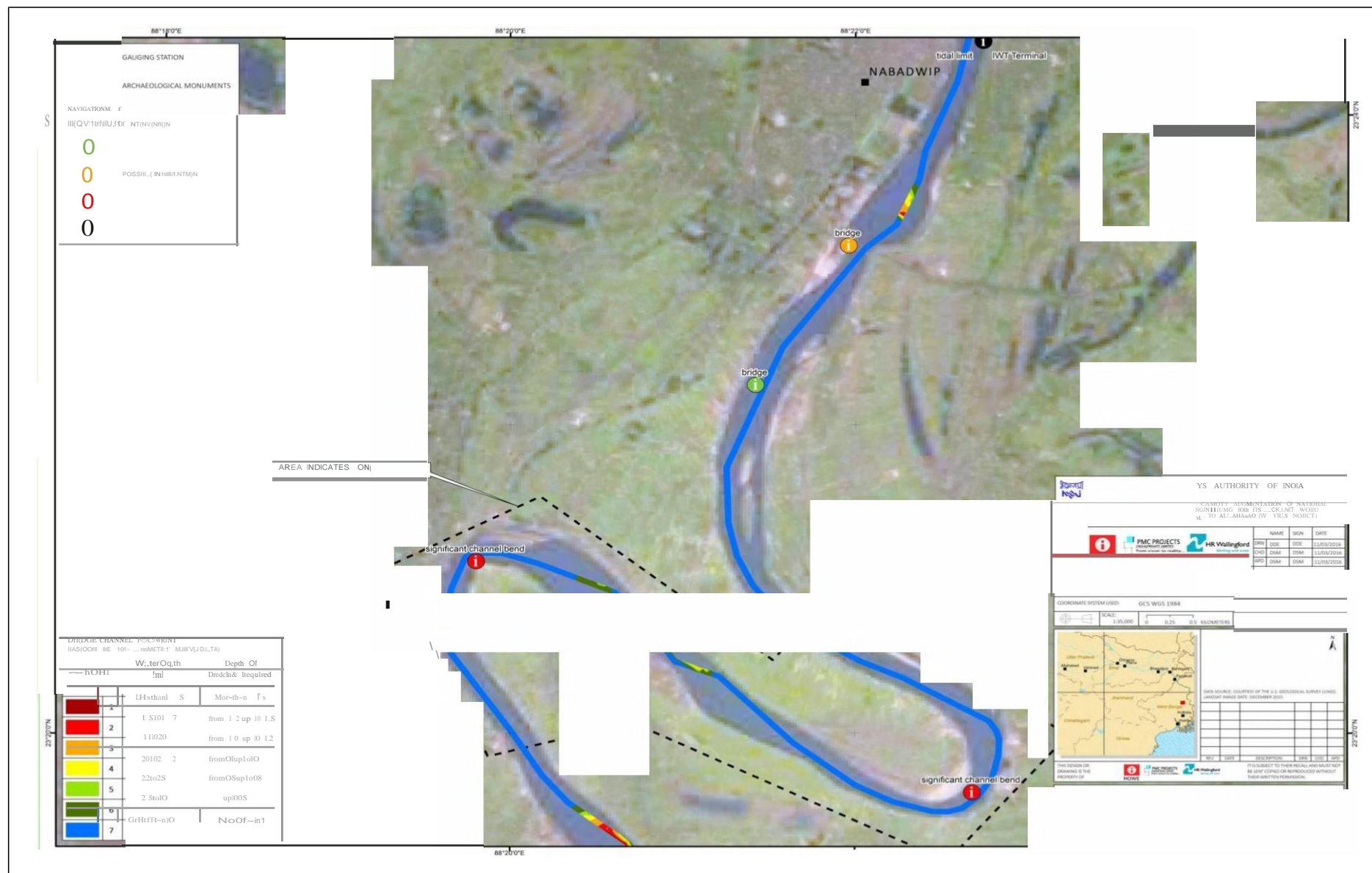


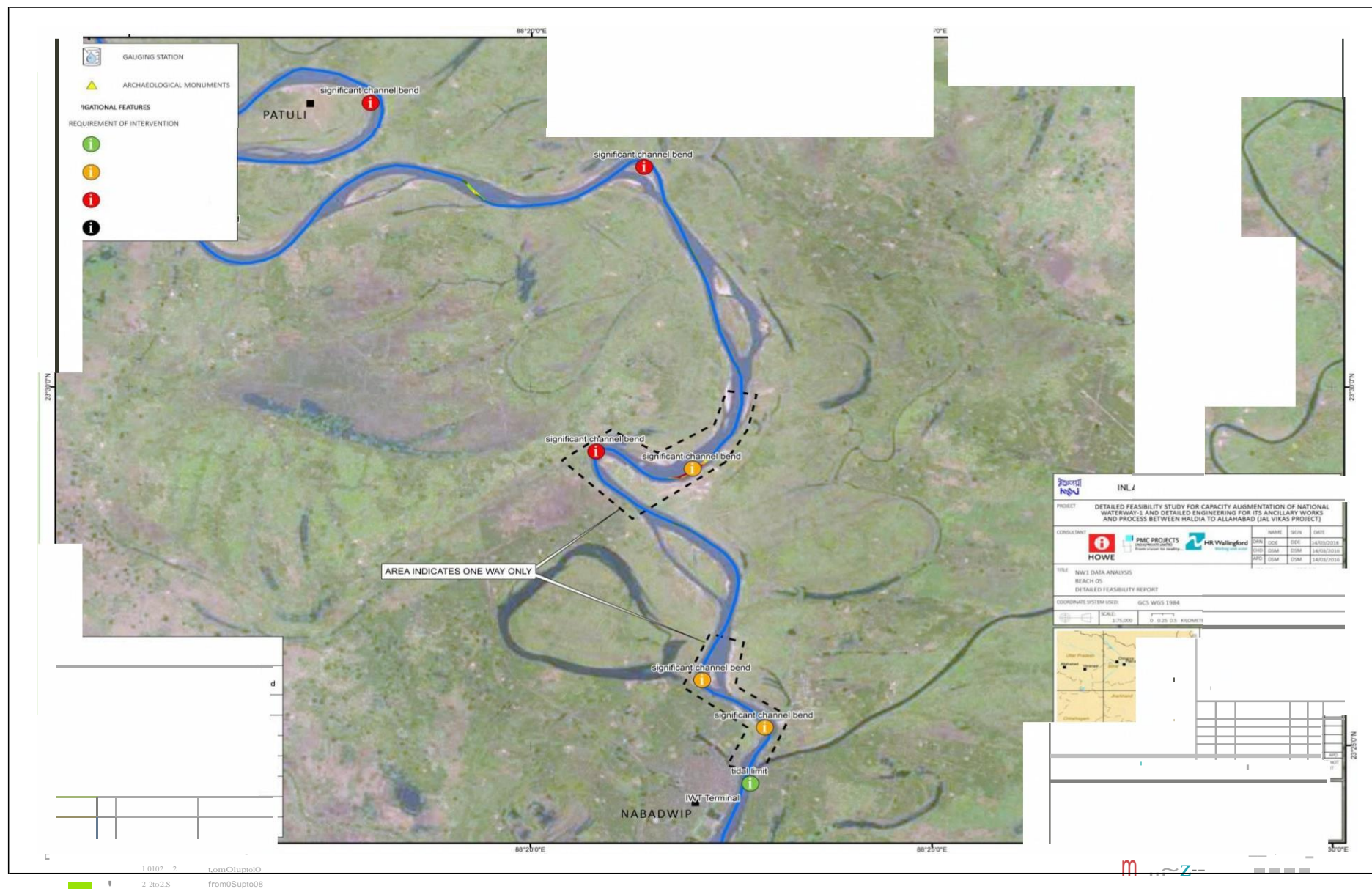












Section-VII Part III – Conditions of Contract and Forms

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Section VII. General Conditions of Contract

A. General Provisions

- 1.1 Definitions Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:
- The Adjudicator is the person appointed jointly by the Employer and the Service Provider to resolve disputes in the first instance, as provided for in Sub-Clause 8.2 hereunder.
- “Activity Schedule” is the priced and completed list of items of Services to be performed by the Service Provider forming part of his Bid;
- (c) “Bank” means the International Bank for Reconstruction and Development, Washington, D.C., U.S.A.;
- or
- (c) “Association” means the International Development Association, Washington, D.C., U.S.A.;
- (d) “Completion Date” means the date of completion of the Services by the Service Provider as certified by the Employer
- (e) “Contract” means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of the Chairman, Inland Waterways Authority of India and the Service Provider, together within the documents referred to therein including these General Conditions of Contract (GCC), the specifications, designs, drawings and instructions issued from time to time by the Engineer-in-charge and all these documents taken together shall be deemed to form one contract and shall be complementary to one another;
- (f) “Contract Price” means the price to be paid for the performance of the Services, in accordance with Clause 6 of GCC;
- (g) “Date of Commencement of Service” means the date as defined in SCC 2.2.2
- (h) “Day works” means varied work inputs subject to payment on a time basis for the Service Provider’s employees and equipment, in addition to payments for associated materials and administration.

- (i) “Employer” means the Project Director, Inland Waterways Authority of India
- (j) “GCC” means these General Conditions of Contract;
- (k) “Government” means the Government of the Employer’s country;
- (l) “Local Currency” means the currency of the country of the Employer;
- (m) “Member,” in case the Service Provider consist of a joint venture of more than one entity, means any of these entities; “Members” means all these entities, and “Member in Charge” means the entity specified in the SC to act on their behalf in exercising all the Service Provider’ rights and obligations towards the Employer under this Contract;
- (n) “Party” means the Employer or the Service Provider, as the case may be, and “Parties” means both of them;
- (o) “Personnel” means persons hired by the Service Provider or by any Sub Service Provider as employees and assigned to the performance of the Services or any part thereof;
- (p) “Service Provider” is a person or corporate body whose Bid to provide the Services has been accepted by the Employer;
- (q) “Service Provider’s Bid” means the completed bidding document submitted by the Service Provider to the Employer
- (r) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented;
- (s) “Specifications” means the specifications of the service included in the bidding document submitted by the Service Provider to the Employer
- (t) “Services” means the work to be performed by the Service Provider pursuant to this Contract, as described in Appendix A to the Contract and in the Specifications there in.
- (u) “Sub Service Provider” means any entity to which the Service Provider subcontracts any part of the Services in accordance with the provisions of Sub-Clauses 3.5 and 4.

1.2 Applicable
Law

The Contract shall be interpreted in accordance with the laws of the Employer’s country, unless otherwise specified in the Special Conditions of Contract (SCC).

-
- 1.3 Language This Contract has been executed in the language specified in the SCC, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.
- 1.4 Notices Any notice, request, or consent made pursuant to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram, or facsimile to such Party at the address specified in the SCC.
- 1.5 Location The Services shall be performed at such locations as are specified in Appendix A, in the specifications and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Employer may approve.
- 1.6 Authorized Representatives Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Employer or the Service Provider may be taken or executed by the officials specified in the SCC.
- 1.7 Inspection and Audit by the Bank The Service Provider shall permit the Bank to inspect its accounts and records relating to the performance of the Services and to have them audited by auditors appointed by the Bank, if so required by the Bank.
- 1.8 Taxes and Duties The Service Provider, Sub Service Providers, and their Personnel shall pay such taxes, duties, fees, and other impositions as may be levied under the Applicable Law, the amount of which is deemed to have been included in the Contract Price.
2. Commencement, Completion, Modification, and Termination of Contract
- 2.1 Effectiveness of Contract This Contract shall come into effect on the date the Contract is signed by both parties or such other later date as may be stated in the SCC.
- 2.2 Commencement of Services
- 2.2.1 Program Before commencement of the Services, the Service Provider shall submit to the Employer for approval a Program showing the general methods, arrangements, order and timing for all activities. The Services shall be carried out in accordance with the approved Program as updated.
- 2.2.2 Starting Date The Service Provider shall start carrying out the Services thirty (30) days after the date the Contract becomes effective, or at such other date as may be specified in the SCC.

-
- 2.3 Intended
Completion Date Unless terminated earlier pursuant to Sub-Clause 2.6, the Service Provider shall complete the activities by the Intended Completion Date, as is specified in the SCC. If the Service Provider does not complete the activities by the Intended Completion Date, it shall be liable to pay liquidated damage as per Sub-Clause 3.8. In this case, the Completion Date will be the date of completion of all activities.
- 2.4 Modification Modification of the terms and conditions of this Contract, including any modification of the scope of the Services or of the Contract Price, may only be made by written agreement between the Parties and shall not be effective until the consent of the Bank or of the Association, as the case may be, has been obtained.
- 2.5 Force
Majeure
- 2.5.1 Definition For the purposes of this Contract, “Force Majeure” means an event which is beyond the reasonable control of a Party and which makes a Party’s performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.
- 2.5.2 No Breach of
Contract The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.
- 2.5.3 Extension of
Time Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.
- 2.5.4 Payments During the period of their inability to perform the Services as a result of an event of Force Majeure, the Service Provider shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period.
- 2.6 Termination
-

2.6.1 By the Employer the Employer may terminate this Contract, by not less than thirty (30) days' written notice of termination to the Service Provider, to be given after the occurrence of any of the events specified in paragraphs (a) through (d) of this Sub-Clause 2.6.1:

- (a) if the Service Provider does not remedy a failure in the performance of its obligations under the Contract, within thirty (30) days after being notified or within any further period as the Employer may have subsequently approved in writing;
 - (b) if the Service Provider become insolvent or bankrupt;
 - (c) if, as the result of Force Majeure, the Service Provider is unable to perform a material portion of the Services for a period of not less than sixty (60) days; or
 - (d) if the Service Provider, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- For the purposes of this Sub-Clause:
- (i) "corrupt practice"¹⁸ is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - (ii) "fraudulent practice"¹⁹ is 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) "collusive practice"²⁰ is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

¹⁸ For the purpose of this Contract, "another party" refers to a public official acting in relation to the procurement process or contract execution. In this context, "public official" includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

¹⁹ For the purpose of this Contract, "party" refers to a public official; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution.

²⁰ For the purpose of this Contract, "parties" refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non-competitive levels.

(iv) “coercive practice”²¹ is 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;

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under para. 1.14 (e) of the Bank’s Procurement Guidelines.

2.6.2 By the Service Provider The Service Provider may terminate this Contract, by not less than thirty (30) days’ written notice to the Employer, such notice to be given after the occurrence of any of the events specified in paragraphs (a) and (b) of this Sub-Clause 2.6.2:

(a) if the Employer fails to pay any monies due to the Service Provider pursuant to this Contract and not subject to dispute pursuant to Clause 8 within forty-five (45) days after receiving written notice from the Service Provider that such payment is overdue; or

(b) if, as the result of Force Majeure, the Service Provider is unable to perform a material portion of the Services for a period of not less than sixty (60) days.

(.C) However, till resolution of the issue by DRB, the Service Provider shall continue to provide the Services as per terms & conditions of the Contract.

2.6.3Suspension of Loan or Credit In the event that the World Bank suspends the loan or Credit to the Employer, from which part of the payments to the Service Provider are being made:

(a) The Employer is obligated to notify the Service Provider of such suspension within 7 days of having received the World Bank’s suspension notice.

²¹ For the purpose of this Contract, “party” refers to a participant in the procurement process or contract execution.

- 2.6.4 Payment upon Termination Upon termination of this Contract pursuant to Sub-Clauses 2.6.1 or 2.6.2, the Employer shall make the following payments to the Service Provider:
- (a) remuneration pursuant to Clause 6 for Services satisfactorily performed prior to the effective date of termination;
 - (b) Except in the case of termination pursuant to paragraphs (a), (b), (d) of Sub-Clause 2.6.1, reimbursement of any reasonable cost incident to the prompt and orderly termination of the Contract, including the cost of the return travel of the Personnel.

3. Obligations of the Service Provider

- 3.1 General The Service Provider shall perform the Services in accordance with the Specifications and the Activity Schedule, and carry out its obligations with all due diligence, efficiency, and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe methods. The Service Provider shall always act, in respect of any matter relating to this Contract or to the Services, as faithful adviser to the Employer, and shall at all times support and safeguard the Employer's legitimate interests in any dealings with Sub Service Providers or third parties.

3.2 Conflict of Interests

- 3.2.1 Service Provider Not to Benefit from Commissions and Discounts. The remuneration of the Service Provider pursuant to Clause 6 shall constitute the Service Provider's sole remuneration in connection with this Contract or the Services, and the Service Provider shall not accept for their own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations under the Contract, and the Service Provider shall use their best efforts to ensure that the Personnel, any Sub Service Providers, and agents of either of them similarly shall not receive any such additional remuneration. The
- 3.2.2 Service Provider and Affiliates Not to be Otherwise Interested in Project Service Provider agree that, during the term of this Contract and after its termination, the Service Provider and its affiliates, as well as any Sub Service Provider 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 closely related to the Services.

- 3.2.3 Prohibition of Conflicting Activities Neither the Service Provider nor its Sub Service Providers nor the Personnel shall engage, either directly or indirectly, in any of the following activities:
- (a) during the term of this Contract, any business or professional activities in the Government's country which would conflict with the activities assigned to them under this Contract;
 - (b) during the term of this Contract, neither the Service Provider nor their Sub Service Providers shall hire public employees in active duty or on any type of leave, to perform any activity under this Contract;
 - (c) after the termination of this Contract, such other activities as may be specified in the SCC.
- 3.3 Confidentiality The Service Provider, its Sub Service Providers, and the Personnel of either of them shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relating to the Project, the Services, this Contract, or the Employer's business or operations without the prior written consent of the Employer.
- 3.4 Insurance to be Taken Out by the Service Provider The Service Provider
- (a) shall take out and maintain, and shall cause any Sub Service Providers to take out and maintain, at its (or the Sub Service Providers', as the case may be) own cost but on terms and conditions approved by the Employer, insurance against the risks, and for the coverage, as shall be specified in the SCC; and
 - (b) at the Employer's request, shall provide evidence to the Employer showing that such insurance has been taken out and maintained and that the current premiums have been paid.
- 3.5 Service Provider's Actions Requiring Employer's Prior Approval The Service Provider shall obtain the Employer's prior approval in writing before taking any of the following actions:
- (a) entering into a subcontract for the performance of any part of the Services,
 - (b) appointing such members of the Personnel not listed by name in Appendix C ("Key Personnel and Sub Service Providers"),
 - (c) changing the Program of activities; and
 - (d) any other action that may be specified in the SCC.

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| 3.6 Reporting Obligations | The Service Provider shall submit to the Employer the reports and documents specified in Appendix B in the form, in the numbers, and within the periods set forth in the said Appendix. |
| 3.7 Documents Prepared by the Service Provider to Be the Property of the Employer | All plans, drawings, specifications, designs, reports, and other documents and software submitted by the Service Provider in accordance with Sub-Clause 3.6 shall become and remain the property of the Employer, and the Service Provider shall, not later than upon termination or expiration of this Contract, deliver all such documents and software to the Employer, together with a detailed inventory thereof. The Service Provider may retain a copy of such documents and software. Restrictions about the future use of these documents, if any, shall be specified in the SCC. |
| Liquidated Damages | DELETED |
| 3.8.1 Payments of Liquidated Damages | The Service Provider shall pay liquidated damages to the Employer at the rate per day stated in the SCC for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the SCC. The Employer may deduct liquidated damages from payments due to the Service Provider. Payment of liquidated damages shall not affect the Service Provider's liabilities. |
| 3.8.2 Correction for Over-payment | If the Intended Completion Date is extended after liquidated damages have been paid, the Employer shall correct any overpayment of liquidated damages by the Service Provider by adjusting the next payment certificate. The Service Provider shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in Sub-Clause 6.5. |
| 3.8.3 Lack of performance penalty | If the Service Provider has not corrected a Defect within the time specified in the Employer's notice, a penalty for Lack of performance will be paid by the Service Provider. The amount to be paid will be calculated as a percentage of the cost of having the Defect corrected, assessed as described in Sub-Clause 7.2 and specified in the SCC. |
| 3.9 Performance Security | The Service Provider shall provide the Performance Security to the Employer no later than the date specified in the Letter of acceptance. The Performance Security shall be issued in an amount and form and by a bank or surety acceptable to the Employer, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The performance |

Security shall be valid until a date 28 days from the Completion Date of the Contract in case of a bank guarantee, and until one year from the Completion Date of the Contract in the case of a Performance Bond.

4. Service Provider's Personnel

4.1 Description of Personnel The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Service Provider's Key Personnel are described in Appendix C. The Key Personnel and Sub Service Providers listed by title as well as by name in Appendix C are hereby approved by the Employer.

4.2 Removal and/or Replacement of Personnel (a) Except as the Employer may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Service Provider, it becomes necessary to replace any of the Key Personnel, the Service Provider shall provide as a replacement a person of equivalent or better qualifications.

(b) If the Employer finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Service Provider shall, at the Employer's written request specifying the grounds thereof, provide as a replacement a person with qualifications and experience acceptable to the Employer.

(c) The Service Provider shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

5. Obligations of the Employer

5.1 Assistance and Exemptions The Employer shall use its best efforts to ensure that the Government shall provide the Service Provider such assistance and exemptions as specified in the SCC.

5.2 Change in the Applicable Law If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost of the Services rendered by the Service Provider, then the remuneration and reimbursable expenses otherwise payable to the Service Provider under this Contract shall be increased or decreased accordingly by agreement between

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| | the Parties, and corresponding adjustments shall be made to the amounts referred to in Sub-Clauses 6.2 (a) or (b), as the case may be. |
| 5.3 Services and Facilities | The Employer shall make available to the Service Provider the Services and Facilities listed under Appendix F. |
| 6. Payments to the Service Provider | |
| 6.1 Lump-Sum Remuneration | The Service Provider's remuneration shall not exceed the Contract Price and shall be a fixed lump-sum including all Sub Service Providers' costs, and all other costs incurred by the Service Provider in carrying out the Services described in Appendix A. Except as provided in Sub-Clause 5.2, the Contract Price may only be increased above the amounts stated in Sub-Clause 6.2 if the Parties have agreed to additional payments in accordance with Sub-Clauses 2.4 and 6.3. |
| 6.2 Contract Price | (a) The price payable in local currency is set forth in the SCC. (b) The price payable in foreign currency is set forth in the SCC. |
| 6.3 Payment for Additional Services, and Performance Incentive Compensation | For the purpose of determining the remuneration due for additional Services as may be agreed under Sub-Clause 2.4, a breakdown of the lump-sum price is provided in Appendices D and E. If the SCC so specify, the service provider shall be paid performance incentive compensation as set out in the Performance Incentive Compensation appendix. |
| 6.4 Terms and Conditions of Payment | Payments will be made to the Service Provider according to the payment schedule stated in the SCC. Unless otherwise stated in the SCC, the advance payment (Advance for Mobilization, Materials and Supplies) shall be made against the provision by the Service Provider of a bank guarantee for the same amount, and shall be valid for the period stated in the SCC. Any other payment shall be made after the conditions listed in the SCC for such payment have been met, and the Service Provider have submitted an invoice to the Employer specifying the amount due. |
| 6.5 Interest on Delayed Payments | If the Employer has delayed payments beyond forty (45) days after the due date stated in the SCC, interest shall be paid to the Service Provider for each day of delay at the rate stated in the SCC. |

6.6 Price Adjustment Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the PC. If so provided, the amounts certified in each payment certificate, after deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type indicated below applies to each Contract currency:

$$P_c = A_c + B_c I_{mc}/I_{oc}$$

where:

P_c is the adjustment factor for the portion of the Contract Price payable in a specific currency “c”

A_c and B_c are coefficients¹ specified in the PC, representing the nonadjustable and adjustable portions, respectively, of the Contract Price payable in that specific currency “c”, and

I_{mc} is the index prevailing at the end of the month being invoiced and I_{oc} is the index prevailing twenty-eight (28) days before Bid opening for inputs payable; both in the specific currency “c”.

If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

6.7 Day works 6.7.1 If applicable, the Day work rates in the Service Provider’s Bid shall be used for small additional amounts of Services only when the Employer has given written instructions in advance for additional services to be paid in that way.

6.7.2 All work to be paid for as Day works shall be recorded by the Service Provider on forms approved by the Employer. Each completed form shall be verified and signed by the Employer representative as indicated in Sub-Clause 1.6 within two days of the Services being performed.

6.7.3 The Service Provider shall be paid for Day works subject to obtaining signed Day works forms as indicated in Sub-Clause 6.7.2

7. Quality Control

7.1 Identifying Defects The principle and modalities of Inspection of the Services by the Employer shall be as indicated in the SCC. The Employer shall check the Service Provider’s performance and notify him of any Defects that are found. Such

checking shall not affect the Service Provider's responsibilities. The Employer may instruct the Service Provider to search for a Defect and to uncover and test any service that the Employer considers may have a Defect. Defect Liability Period is as defined in the SCC.

Correction of DELETED
Defects, and

Lack of Performance (a) The Employer shall give notice to the Service Provider of any Defects before the end of the Contract. The Defects liability period shall be extended for as long as Defects remain to be corrected.

Penalty (b) Every time notice a Defect is given, the Service Provider shall correct the notified Defect within the length of time specified by the Employer's notice.

(c) If the Service Provider has not corrected a Defect within the time specified in the Employer's notice, the Employer will assess the cost of having the Defect corrected, the Service Provider will pay this amount, and a Penalty for Lack of Performance calculated as described in Sub-Clause 3.8.

8. Settlement of
Disputes

8.1 Amicable Settlement The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

8.2 Dispute Settlement 8.2.1 If any dispute arises between the Employer and the Service Provider in connection with, or arising out of, the Contract or the provision of the Services, whether during carrying out the Services or after their completion, the matter shall be referred to the Adjudicator within 14 days of the notification of disagreement of one party to the other.

8.2.2 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.

8.2.3 The Adjudicator shall be paid by the hour at the rate specified in the BDS and SCC, together with reimbursable expenses of the types specified in the SCC, and the cost shall be divided equally between the Employer and the Service Provider, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator's written decision. If neither party refers the dispute to

arbitration within the above 28 days, the Adjudicator's decision will be final and binding.

8.2.4 The arbitration shall be conducted in accordance with the arbitration procedure published by the institution named and, in the place, shown in the SCC.

8.2.5 Should the Adjudicator resign or die, or should the Employer and the Service Provider agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator will be jointly appointed by the Employer and the Service Provider. In case of disagreement between the Employer and the Service Provider, within 30 days, the Adjudicator shall be designated by the Appointing Authority designated in the SCC at the request of either party, within 14 days of receipt of such request.

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| Number of | Section VIII. Special Conditions of Contract |
| GCC Clause | Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
| 1.1 | The words “in the Government’s country” are amended to read “in India.” |
| 1.1(a) | The Adjudicator is _____ |
| 1.1(e) | <p>The name and identification number of the Contract is</p> <p><i>Fairway Maintenance Contract for providing Assured Least Available Depth of 3.0 m with 45 m width including River Conservancy works, channel marking etc in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga).</i></p> <p>The identification number of the Contract is <i>IN-IWAI -..... -CW-RFB</i></p> <p>The Intended Completion Date is <i>3 years from the Date of Commencement of Service. and Extendable by another 2 years</i></p> |
| 1.1(h) | <p>The Employer is</p> <p><i>Vice Chairman & Project Director, (JMVP)</i> <i>Inland Waterways Authority of India,</i> <i>Ministry of Ports, Shipping & Waterways</i> <i>Government of India.</i></p> |
| 1.1(m) | The Member in Charge is _____ |
| 1.1(p) | The Service Provider is _____ |
| 1.1 (v) | The EIC / Project Manager will be Director, IWAI, Kolkata. |
| 1.2 | The Laws governing the contract are Laws of Union of India & jurisdiction is New-Delhi |
| 1.3 | The language is English |
| 1.4 | <p>The addresses are:</p> <p>Employer: Vice Chairman and Project Director, JMV. Project Inland Waterways Authority of India, A-13, Secot-1, Noida – 201301, Uttar Pradesh, India Telex: +91 120 2544004 : Facsimile:+91 120 2543976</p> <p>Service Provider: Attention: Telex: Facsimile:</p> |
| 1.6 | <p>The Authorized Representatives are:</p> <p>For the Employer: Engineer in Charge & Director (IWAI) – Kolkata Inland Waterways Authority of India</p> <p>For the Service Provider:</p> |
| 2.1 | The date on which this Contract shall come into effect is date of signing of the contract. |

| Number of GCC Clause | Section VIII. Special Conditions of Contract Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
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| 2.2.2 | <p>GCC 2.2.2 is revised to read as under</p> <ul style="list-style-type: none"> (i) Within 28 days from the date of signing of the Contract, the Employer shall issue a Notice to the Contractor for commencing operations to meet the requirements of Works and Services stipulated in Part A to the Contract. (ii) The Contractor shall commence its activities immediately on receipt of the said Notice and notify the Employer within a period not exceeding 30 days from the date of receipt of said Notice that the Assured Least Available depth (LAD) of 3.0 m and channel bottom width of minimum 45 m have been fully complied along with other related activities including provision of navigational aids. (iii) The date on which the Engineer-in-charge or his representative, after receiving notification of readiness of Navigation Channel from the Contractor and after joint inspection of the channel with the Contractor, confirms that the entire stretch of the channel Farakka – Tribeni satisfies the requirement of LAD of 3.0m and channel bottom width of 45m shall be referred to as the “Date of Commencement of Services (iv) Engineer-in-charge shall inspect jointly with Contractor within a week of the said notification to confirm that the entire stretch of the channel Farakka – Tribeni satisfies the requirement of LAD of 3 m and Channel bottom width of 45 m. (v) If the outcome of joint inspection is not satisfactory, Contractor will commence the required further activities immediately on receipt of Engineer-in-charge’s intimation to this effect to meet the specified requirements. Within a period not exceeding 30 days from the date of receipt of said intimation from the Engineer-in-charge, or 60 days from the date of Employer’s Notice to the Contractor for commencing operations, whichever is later, The Contractor shall complete the required activities for making the Navigation Channel ready as specified. The Contractor shall then issue a revised Notification of readiness of Navigation Channel with LAD of 3.0 m and Channel bottom width of 45 m to the Engineer-in-charge. (vi) The date of revised Notification referred to above will count as the “Date of Commencement of Services” (in supersession of the date arrived at earlier) provided joint inspection by the Engineer-in-charge with the Service Provider confirms that the entire stretch of the channel Farakka – Tribeni satisfies the requirement of LAD of 3.0 m and Channel bottom width of 45 m. (vii) Contractor’s failure to achieve LAD of 3.0 m and Channel bottom width of 45 m within the time limit prescribed in the paragraph (v) above shall be treated as breach of the contract, requiring re-determining of the Date of Commencement of Services based on the third round of Joint Survey. (viii) In such an event, the Contractor shall submit a proposal to the Employer with justification seeking additional time for carrying out further activities to achieve the specified LAD of 3.0 m and Channel bottom width of 45 m. Based on |

| Number of GCC Clause | Section VIII. Special Conditions of Contract |
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| | Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
| | <p>Engineer-in-charge's recommendation, the Employer will consider the proposal and if extension of time is considered justified.</p> <p>(ix) The Employer may allow Contractor further time as may be considered reasonable under the circumstances, provided, however, that no further extension shall be considered. If the Joint Survey done on Contractor's Notification of readiness of the Navigation Channel, establishes that the entire stretch of the channel Farakka – Tribeni satisfies the requirement of LAD of 3.0 m and Channel bottom width of 45 m, the date of Notification referred to herein shall be counted as the Date of Commencement of Services.</p> <p>(x) If the Joint Survey referred to in (vii) above reveals that the service provider has failed to achieve the specified LAD of 3.0m and channel bottom width of 45m then in such case, the employer may consider LAD of 2.7m depth and width has been of 45 and the day when such LAD and width has been achieved shall be considered as "Date of commencement of services".</p> <p>(xi) It is clarified that LAD of 2.7m may be considered only after 3rd joint survey for the purpose of defining "date of commencement of services", the overall LAD to be maintained by the service provider as per contract still remains 3.0m during the contract period of 3 years</p> |
| 2.3.1 | Intended Completion Date: The Intended Completion Date is Three years from the "Date of Commencement of Services". |
| 2.3.2 | <p>Extension of Contract beyond 3 years</p> <p>The Contract is extendable for further period of 2 Years based on satisfactory performance. For the purpose of rates, the same shall be worked out based on the average of the lump sum quoted amounts for three years in the awarded cost (their bid) with existing Terms and Conditions. Price Adjustment shall be payable as per existing Terms & Conditions for this extended period.</p> |
| 3.0 | <p>Obligation of the service Provider</p> <p>The Contractor shall carry out the following Dredging /Bandalling Works, which are detailed in the Specifications – Section VI Part A:</p> <ol style="list-style-type: none"> i. To Provide and maintain assured LAD of 3.0 m and Channel bottom width of 45 m with naturally side slopes during the Contract period of 3 years from the date of commencement of services. ii. To install and maintain the Day Channel Marking (Navigational Aids) throughout the Contract Period. iii. Assistance to Normal barge and vessels / crafts movement in the channel during dredging operation. |
| 3.4 | The risks and coverage by insurance shall be: |

| Number of GCC Clause | Section VIII. Special Conditions of Contract | | |
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| | Amendments of, and Supplements to, Clauses in the General Conditions of Contract | | |
| | (i) Third Party motor vehicle: INR 4,000,000/- (ii) Third Party liability: as per vessel Inland Act. (iii) Group Insurance Cover for the persons on Vessel / Board. (iii) Employer's liability and workers' compensation: Nil (iv) Professional liability: Twice the value of contract for the entire period of the contract (v) Loss or damage to equipment and property: Minimum INR 10,000,000/- for each accident for the currency of the contract | | |
| 3.5 | The contractor should satisfy, whether the Subcontractor so proposed for the work possess the necessary experience, qualifications and equipment for the job proposed. | | |
| 3.7 | The Contractor may subcontract under his own responsibility and without prior approval of the Employer the following Works and Services provided they do not represent more than 10 percentage of the contract value: <div><div>a. Bandalling</div><div>c. Erection of Aids to Navigation</div></div> | | |
| 3.8. | If in any stretch of the channel, available depth or bottom width of channel is found to be less than that specified in Section VI, Part A – Description of Works and Services, as determined during the course of weekly joint surveys conducted in accordance with SCC 7.0, deduction shall be made from the Contractor's monthly bills as following. | | |
| 3.8.3 Lack of Performance Penalty | Sl.no | Deductions for the Assured Depth Period of services from the Date of Commencement of Service LAD 3.0 M & CBW 45 M | Deduction to be applied as percentage of monthly bill for each non-compliance found in a joint weekly survey during the month |
| | 1 | On achieving the assured depth of 3.0 m & width of 45 m | Nil |
| | 2 | On achieving the assured depth of 2.9 m & width of 45 m | 20% for each weekly default |
| | 3 | On achieving the assured depth of 2.8m & width of 45 m | 30% for each weekly default |
| | 4 | On achieving the assured depth of 2.7 m & width of 45 m | 50% for each weekly default |
| | 5 | For a depth less than 2.7 m & width of 45 m | 100% for each weekly default |
| | 6. | If a weekly joint survey establishes that the Service Provider failed to maintain the navigational marks according to stipulations in Section VII, Part A Description of Services to the Contract, deductions shall also be made from the respective monthly bill @ 1% of the verified payable amount for each such weekly default. | |
| | As an Example: - The Operation of the Table shall be as under Monthly payment (Mp) = %age of contract Price Weekly Default Deductions (Wd)1,2,3,4 = = [Mp/4] * %age] where %age of default Formulae: 1) Monthly amount payable (MAp) = MAp = Mp - [Wd1+Wd2+Wd3+Wd4] | | |

| Number of GCC Clause | Section VIII. Special Conditions of Contract Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
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| | <p>2) Monthly Due = $M_d = M_{Ap}$ (In case of No default) = $[M_{Ap} - 1\% \text{ of } M_{Ap}]$ (In case of default)</p> <p>Example: Suppose a. Contract price for full year is ₹100 Cr (excl. taxes) and b. For Operating Month of November with 10%</p> <p>Therefore, in case of</p> <p>A) No Default Condition (with LAD of 3.0 m and width of 45 m with sufficient day channel marks) Amount Payable for month of November = $M_p = M_{Ap} = M_d = ₹10 \text{ Cr}$</p> <p>B) Default with following LAD: Deduction Week1 = 3.2 m @ 0% deduction Week2 = 2.9 m @ 20% deduction Week3 = 3.0 m @ 0% deduction Week4 = 2.7 m @ 50%</p> <p>Using Formulae-1</p> <p>M_{Ap} for November = $M_p - [0 + (M_p/4 * 20\%) + 0 + (M_p/4) * 50\%]$ = ₹10 Cr - $[0 + 20\% \text{ of } ₹(10/4) \text{ Cr} + 0 + 50\% \text{ of } ₹(10/4) \text{ Cr}]$ = ₹10 Cr - ₹1.75 Cr = ₹8.25 Cr</p> <p>Using Formulae-2 (Default in providing of day channel marks) Monthly Due to Contractor (M_d) = $[M_{Ap} - 1\% \text{ of } M_{Ap}]$</p> <p>So, Payment due to the Contractor for the month of November in default condition (Less nos. of Day channel marks) will be: M_d for November = $[M_{Ap} \text{ for November} - 1\% \text{ of } M_{Ap} \text{ for November}]$ = ₹8.25 Cr - 1% of ₹8.25 Cr</p> |
| Additional Penalty on account of Lack of Performance | <p>a. In the event, if the Dredging Contractor does not provide the minimum 2.7m LAD & 45M channel bottom width (CBW) in all four weeks in a month then, apart from the above deductions as per SCC 3.8.3, an additional penalty @ 1% of the maximum bill that would have been claimed in that month (i.e., if no default condition) shall be recovered in next RA bill of the dredging contractor.</p> <p>b. The penalty effected & deduction made on account of Lack of Performance shall not be refundable. in case the amount to be recovered falls short same will be recovered from the next months bill.</p> <p>c. In the event, the above condition persists continuously for three months, then, penalty applicable shall be @ 2% of the maximum bill that would have been claimed in that month (i.e., if no default condition) shall be recovered in next RA bill of the dredging contractor and this shall be continued to be deducted until the default condition persists.</p> |
| 4.0 | Service Providers Persons (To be added at the time of contract signing) |

| Number of GCC Clause | Section VIII. Special Conditions of Contract | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | Amendments of, and Supplements to, Clauses in the General Conditions of Contract | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.2 | The Payment of the Contract Price will be made in - INR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.1 | <p>Replace the existing GC Sub-clause 6.1 with the following:</p> <p>The Contractor shall submit monthly Bills for performing the works & services, from the Date of Commencement of Works which will be verified by the Engineer-in-charge subject to deduction as applicable in terms and recovery towards repayment of Mobilization Advance & other recoveries, if any. Verified bills would be forwarded by the Engineer-in-Charge to the Employer for making payment of the amount certified by him.</p> <p>The Contractor shall be eligible to claim payments for services rendered by him as a percentage of the contract price for the respective month of the year of operation in accordance with the details tabulated below.</p> <table><tr><th>Sl N.</th><th>Month</th><th>% age of Contract Price applicable for the relevant months of service</th></tr><tr><td>1</td><td>January</td><td>10</td></tr><tr><td>2</td><td>February</td><td>10</td></tr><tr><td>3</td><td>March</td><td>10</td></tr><tr><td>4</td><td>April</td><td>10</td></tr><tr><td>5</td><td>May</td><td>10</td></tr><tr><td>6</td><td>June</td><td>7.5</td></tr><tr><td>7</td><td>July</td><td>5</td></tr><tr><td>8</td><td>August</td><td>5</td></tr><tr><td>9</td><td>September</td><td>5</td></tr><tr><td>10</td><td>October</td><td>7.5</td></tr><tr><td>11</td><td>November</td><td>10</td></tr><tr><td>12</td><td>December</td><td>10</td></tr><tr><td colspan="2">Total</td><td>100</td></tr></table> | Sl N. | Month | % age of Contract Price applicable for the relevant months of service | 1 | January | 10 | 2 | February | 10 | 3 | March | 10 | 4 | April | 10 | 5 | May | 10 | 6 | June | 7.5 | 7 | July | 5 | 8 | August | 5 | 9 | September | 5 | 10 | October | 7.5 | 11 | November | 10 | 12 | December | 10 | Total | | 100 |
| Sl N. | Month | % age of Contract Price applicable for the relevant months of service | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | January | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | February | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | March | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | April | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | May | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | June | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | July | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | August | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | September | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | October | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | November | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | December | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.2(a) | The amount, exclusive of GST which will be payable extra by the Employer as legally applicable, in local currency. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.2(b) | The amount, exclusive of GST which will be payable extra by the Employer as legally applicable, in foreign currency or currencies. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.4 Terms & conditions of Payment | <p>The amount of the Advance Payment is <i>ten (10) percent of Contract Price</i>.</p> <p>The Advance payment will be made after successful verification of the submitted Advance Bank Guarantee.</p> <p>The total advance shall be recovered within 24 months from the monthly Running Account bills in equal instalments from 6th RA Bill onwards from the Date of Commencement, irrespective of the RA bill amount.</p> <p>In case, the monthly RA bill for any month is less than the advance amount to be recovered, then the same shall be recovered from the subsequent RA bill along with the recovery of advance for that month.</p> <p>If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination of the Contract, the whole of the balance then outstanding shall immediately become due and payable by the Contractor to the Employer.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Number of GCC Clause | Section VIII. Special Conditions of Contract | | | |
| | Amendments of, and Supplements to, Clauses in the General Conditions of Contract | | | |
| | Running Account (RA) Bills shall be prepared in 3 copies and submitted along with the Engineer-in-charge’s Inspection Report and approved charts generated during Joint Survey | | | |
| 6.6 Price Adjustment | The amounts certified in each Running Account Bill/payment certificate, after deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the amounts due to the Operator. The Price adjustment factor for the Works & Services rendered in a month shall be determined using the coefficients/weightings of relevant Indices as under: | | | |
| | Index | Index Description | Source of Index | Weightage |
| | L | Labour – All India Consumer Price Index (CPI) for Industrial Workers | Labour Bureau, Ministry & Employment, Government of India | 0.278 |
| | F | High Speed Diesel. -All India Wholesale Price Index | Office of the Economic Advisor to the Govt of India. Ministry of Commerce & Industry | 0.50 |
| | Price Adjustment Factor $P_c = 0.222 + 0.278 \times L_m/L_0 + 0.50 \times F_m/F_0$ Price Adjustment for Works & Services rendered in a month = R x (Pc – 1) Where, Lm = CPI for the month in which the Works & Services have been provided L0 = CPI for the month preceding the deadline for bid submission Fm = WPI for the month in which the Works & Services have been provided F0 = WPI for the month preceding the deadline for bid submission R = Running Account Bill amount for Works & Services rendered in a month after making deductions (a) as stipulated in SCC 3.8.3 for failure to achieve LAD and Channel Bottom Width & day channel marks, and (b) towards repayment of Advance Payment. | | | |
| 7.0 Inspections & Approvals | Inspection and Approvals Existing GCC 7 is substituted by the following: Services provided by the Service Provider shall be checked every week through a Joint Survey by Engineer-in-Charge / Employer’s Representative and Service Provider in the manner tabulated below: | | | |
| | SN | Inspection schedule | Employer’s representative | Service Provider’s Representative |
| | 1 | 1st Week of every month | JHS / TA / SUPERVISOR | One Hydrographic Surveyor & one supervisor / Engineer |
| | 2 | 2nd Week of every month | AD / AHS / TA / JHS | One Hydrographic Surveyor & One Engineer |
| | 3 | 3rd Week of every month | JHS / TA / SUPERVISOR / FA | One Hydrographic Surveyor & One supervisor / Engineer |
| | 4 | 4th Week of every month | DD / AHS / AD / JHS / One Officer from HQ | One Hydrographic Surveyor & One senior level officer by the Project Manager |
| | TA - Technical Assistant, JHS - Junior Hydrographic Surveyor, FA - Field Assistant, DD - Deputy Director, AHS - Assistant Hydrographic Surveyor, AD - Assistant Director | | | |

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| Number of GCC Clause | Section VIII. Special Conditions of Contract |
| | Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
| 7.2 Measurements | <p>Measurements</p> <p>The measurement of depth and day channel marks in the navigation channel shall be carried out by conducting bathymetric survey every week jointly as detailed above & its chart should be plotted by the Contractor in presence of Employer's representative. <i>However, Contractor shall also ensure measurement of width in each survey and shall carry out the surveys in order to define the minimum width of 45 m as specified in Scope / ToR</i></p> <p>In case shortcomings in maintaining the specified LAD and width of channel are observed by the Employer's representative, the cross-sectional survey shall be carried out and the cross-sectional interval shall be 10 m apart and soundings shall be taken continuously and plotted at 4 m interval on the cross section. The cross-section shall be extended, if necessary, up to 20 m beyond the limits of the channel on each side with a view to determining the remedial measures to be taken by the Service Provider.</p> <p>Sounding vessel/ boat, equipment, personal & other logistics required for conducting surveys/ inspection shall be arranged by the Service Provider at his cost. Generally, recording type multi-beam echo-sounder with digital output shall be used in all survey work. However, keeping in view the site conditions and practicability/prevaling weather conditions, the Engineer-in-Charge shall after consulting the Service Provider decide and advise the Service Provider as to the method of measurement to be adopted. Joint surveys shall be conducted in Automatic Hydrographic Survey System (HYPACK) and recorded data in soft copy shall be submitted to the Employer.</p> <p>The scale of surveys should be 1:5000 for weekly surveys in a month. Service Provider will prepare the survey charts and submit to Employer for approval along with Soft copy, Echo roll, Measurement Book etc. related to the measurement. Employer will issue the approved charts to the Service Provider.</p> <p>Works & Services provided by the Contractor shall be checked every week through a Joint Survey by Engineer-in-Charge / Employer's Representative, Technical Support Services Consultant – III and Contractor in the manner tabulated at Table 7.0 above</p> |
| 8.2.3 | The Adjudicator is [Name should be filled in at the time of signing of the contract.] He will be paid @ Rs.10,000/- per day of effective hearing, exclusive of boarding, lodging and transportation expenses which shall be reimbursed as per actuals. |
| 8.2.4 | <p>The arbitration procedures of as defined below will be used.</p> <p>For domestic Consultant, Arbitration proceedings shall be conducted in accordance with procedure of the Arbitration & Conciliation Act 1996, of India. For foreign consultants (including JV where lead partner is foreign), arbitration shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract.</p> <p>The arbitration venue shall be New Delhi for domestic Service Providers. For foreign Service Providers, the arbitration venue shall be a neutral venue or a venue mutually agreed at the time of signing of contract agreement.</p> |
| 8.2.5 | The designated Appointing Authority for a new Adjudicator is Chairman, Inland Waterways Authority of India |
| 8.2.6 | <p>Dispute Resolution Method used: DRB</p> <p>The Appointing Authority is: <i>Chairman, Inland Waterways Authority of India</i></p> <p>"In the event of death, disability, or resignation of the DRE, the latter shall be replaced by agreement between the Employer and the Contractor. Any replacement made by the</p> |

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| Number of | Section VIII. Special Conditions of Contract |
| GCC Clause | Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
| Dispute Resolution Method | <p>parties shall be completed within 28 days after the event giving rise to the need for a replacement, failing which the replacement shall be made by the same appointing authority as above.”</p> <p>“The agreement between the Parties and either the sole member or each of the three members shall incorporate by reference the General Conditions of Dispute Review Board Agreement contained in the Appendix B to these General Conditions, with such amendments as are agreed between them.</p> <p>The Fee & other expenses payable to the Dispute Review Board Members shall be as per Annexure-I; the Proceedings to be issued to the Dispute Review Board Members is as shown in the Annexure- I (A); and the Recommendation of the Dispute Review Board shall be in the format shown in the Annexure – I (B).”</p> <p>“1. The procedure for adhoc arbitration will be as under: Any dispute in respect of which the Recommendation(s), if any, of the Board has not become final and binding shall be finally settled by arbitration as set forth below. The arbitral tribunal shall have full power to open-up, review and revise any decision, opinion, instruction, determination, certificate or valuation of the Engineer (or equivalent) and any Recommendation(s) of the Board related to the dispute.</p> <p>(i) (a) A dispute with an Indian Contractor shall be finally settled by arbitration in accordance with the Arbitration & Conciliation Act, 1996, or any statutory amendment thereof. The arbitral tribunal shall consist of 3 arbitrators, one each to be appointed by the Employer and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding arbitrator. In case the two appointed arbitrators fail to agree on the third arbitrator within 30 days from the date of their appointment, the appointment shall be made upon the request of a party, by the court. For the purposes of this Sub-Clause, the term “Indian Contractor” means a contractor who is registered in India and is a juridic person created under Indian law as well as a joint venture between such a contractor and a Foreign Contractor.</p> <p>(b) In the case of a dispute with a foreign Contractor, the dispute shall be finally settled in accordance with the provisions of UNCITRAL Arbitration Rules. The arbitral tribunal shall consist of three Arbitrators one each to be appointed by the Employer and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties, and shall act as presiding arbitrator. In case the two appointed arbitrators fail to agree on the third arbitrator within 30 days from the date of their appointment, the appointment shall be made upon the request of a party, by the court. For the purposes of this Clause, the term “Foreign Contractor” means a contractor who is not registered in India and is not a juridical person created under Indian Law.</p> <p>The venue of arbitration with a foreign bidder shall be a neutral venue or as mutually agreed venue at the time of signing of the contract agreement.</p> |
| | In addition to be above mentioned in the SCC / PC, the following Shall also form part of SCC / PC. |
| | <p>Added New Clause</p> <p>“If the Contractor was, or is, failing to perform any ESHS obligations or work under the Contract, the value of this work or obligation, as determined by the Project Manager, may be withheld until the work or obligation has been performed, and/or the cost of rectification or replacement, as determined by the Project Manager, may be withheld until rectification or replacement has been completed. Failure to perform includes, but is not limited to the following:</p> |

| Number of GCC Clause | Section VIII. Special Conditions of Contract |
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| | Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
| | <p>a. failure to comply with any ESHS obligations or work described in the Works' and Services' Requirements which may include: working outside site boundaries, excessive dust, failure to keep public roads in a safe usable condition, damage to offsite vegetation, pollution of water courses from oils or sedimentation, contamination of land e.g. from oils, human waste, damage to archaeology or cultural heritage features, air pollution as a result of unauthorized and/or inefficient combustion;</p> |
| SCC 9.1 ESHS Compliance | <p>b. failure to regularly review C-ESMP and/or update it in a timely manner to address emerging ESHS issues, or anticipated risks or impacts;</p> <p>c. failure to implement the C-ESMP e.g. failure to provide required training or sensitization;</p> <p>d. failing to have appropriate consents/permits prior to undertaking Works or related activities;</p> <p>e. failure to submit ESHS report/s (as described in Appendix A), or failure to submit such reports in a timely manner;</p> <p>f. failure to implement remediation as instructed by the Project Manager within the specified timeframe (e.g. remediation addressing non-compliance/s).</p> <p>g. Failure to implement ESHS obligations or works described in the Works and Services requirements – the Employer may implement the ESHS obligations itself while recovering the cost from the Contractor's payment(s) along with forfeiting the Performance Bank Guarantees.</p> |
| SCC 9.2 Bank Guarantees for Performanc e security & ESHS | <p>Added New Clause</p> <p>The Contractor shall, within twenty eight (28) days of the notification of contract award, provide a Performance Security and an Environmental, Social, Safety and Health (ESHS) Performance Security for the due performance of the Contract.</p> <p>a. <i>The Performance Security will be in the form of a 'demand guarantee' in the amount of 5 % of the contract amount 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]</i></p> <p>b. <i>The ESHS Performance Security will be in the form of a "demand guarantee" in the amount(s) of 1.5% of the Contract Amount and in the same currency(ies) of the Accepted Contract Amount.</i></p> <p>c. <i>Plus, additional security for unbalanced bids (if any) to be decided during evaluation of bids and informed to Bidders at the time of Pre-award discussions.</i></p> <p>The Performance Security shall be issued by a reputable bank or financial institution selected by the Contractor, and shall be in the Performance Security Form included in Section IX, Annex to the Particular Conditions - Contract Forms, or in another form approved by the Employer. The ESHS Performance Security shall be issued by a reputable bank selected by the Contractor, and shall be in the ESHS Performance Security Form included in Section IX, Annex to the Particular Conditions - Contract Forms, or in another form approved by the Employer. A foreign institution providing a Performance Security or ESHS Performance Security shall have a correspondent</p> |

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| Number of GCC Clause | Section VIII. Special Conditions of Contract |
| | Amendments of, and Supplements to, Clauses in the General Conditions of Contract |
| | <p>financial institution located in the Employer's Country. The performance security and the ESHS performance security, of a Joint Venture shall be in the name of the Joint Venture specifying the names of all the members.</p> <p>The Contractor shall ensure that the Performance Security and the ESHS Performance Security are valid and enforceable until the Contractor has executed and completed the Works and Services and other obligations (including defect liability and satisfactory performance of the ESHS obligations) under the Contract. If the terms of the Performance Security and ESHS Performance Security specify expiry dates, and the Contractor has not yet executed and completed the Works and Services and other obligations under the Contract, by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the Performance Security and the ESHS Performance Security until the Works and Services and all other obligations under the Contract have been completed.</p> <p>The term 'performance security', unless the context clearly indicates otherwise or unless the ESHS performance security is not required to be submitted, means and includes both 'the performance security and the ESHS performance security' submitted by the successful bidder.</p> |
| Bank Guarantees for. Advance payment security | <p>The advance payment security (demand guarantee) shall be issued by a reputable bank or financial institution selected by the Contractor, and shall be in the Advance Payment Security Form included in Contract Forms, or in another form approved by the Employer. A foreign institution providing the Advance Payment Security shall have a correspondent financial institution located in the Employer's Country.</p> <p>The Contractor shall ensure that the guarantee is valid and enforceable until the advance payment has been repaid.</p> <p>The amount of the security shall be reduced in proportion to the value of the Works and Services executed by and paid to the Contractor from time to time, and shall automatically become null and void when the full amount of the advance payment has been recovered by the Employer. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment has been repaid. The security shall be returned to the Contractor immediately after its expiration</p> |
| SCC 9.3 Foreclosure of Contract | <p>Added New Clause</p> <p>Fore Closure of Contract : If at any time after acceptance of the tender the Authority decides to abandon or reduce the scope of the works for reasons whatsoever and hence does not require the whole or any part of the works to be carried out, the Engineer-in-Charge (with the prior approval of competent authority) shall give notice in writing to that effect to the contractor.</p> <p>The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he could not derive in consequence of the foreclosure of the whole or part of the works. However, pro-rata payment shall be made for the completed works, as agreed mutually</p> |

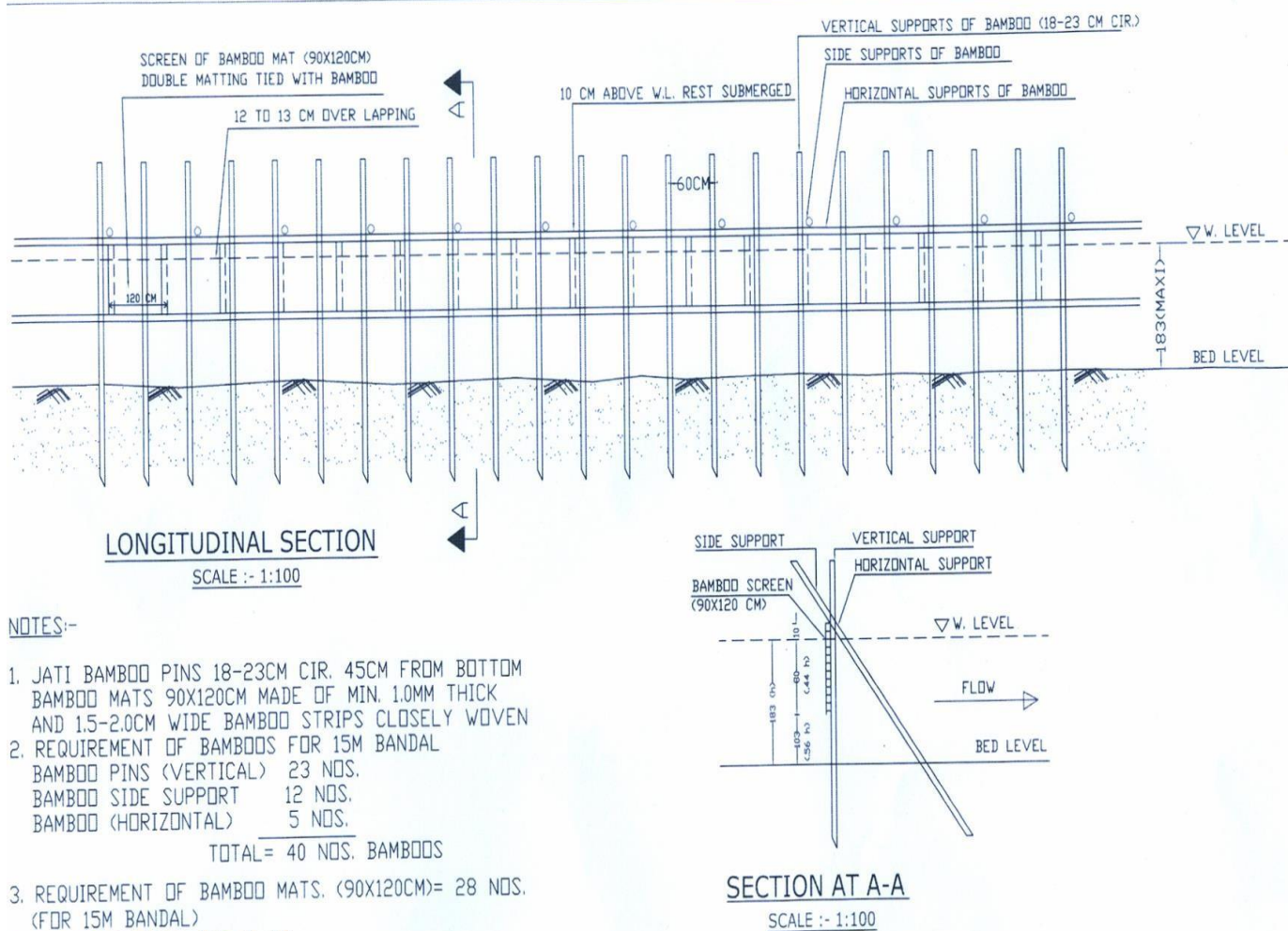
Section IX

Performance Specifications and Drawings

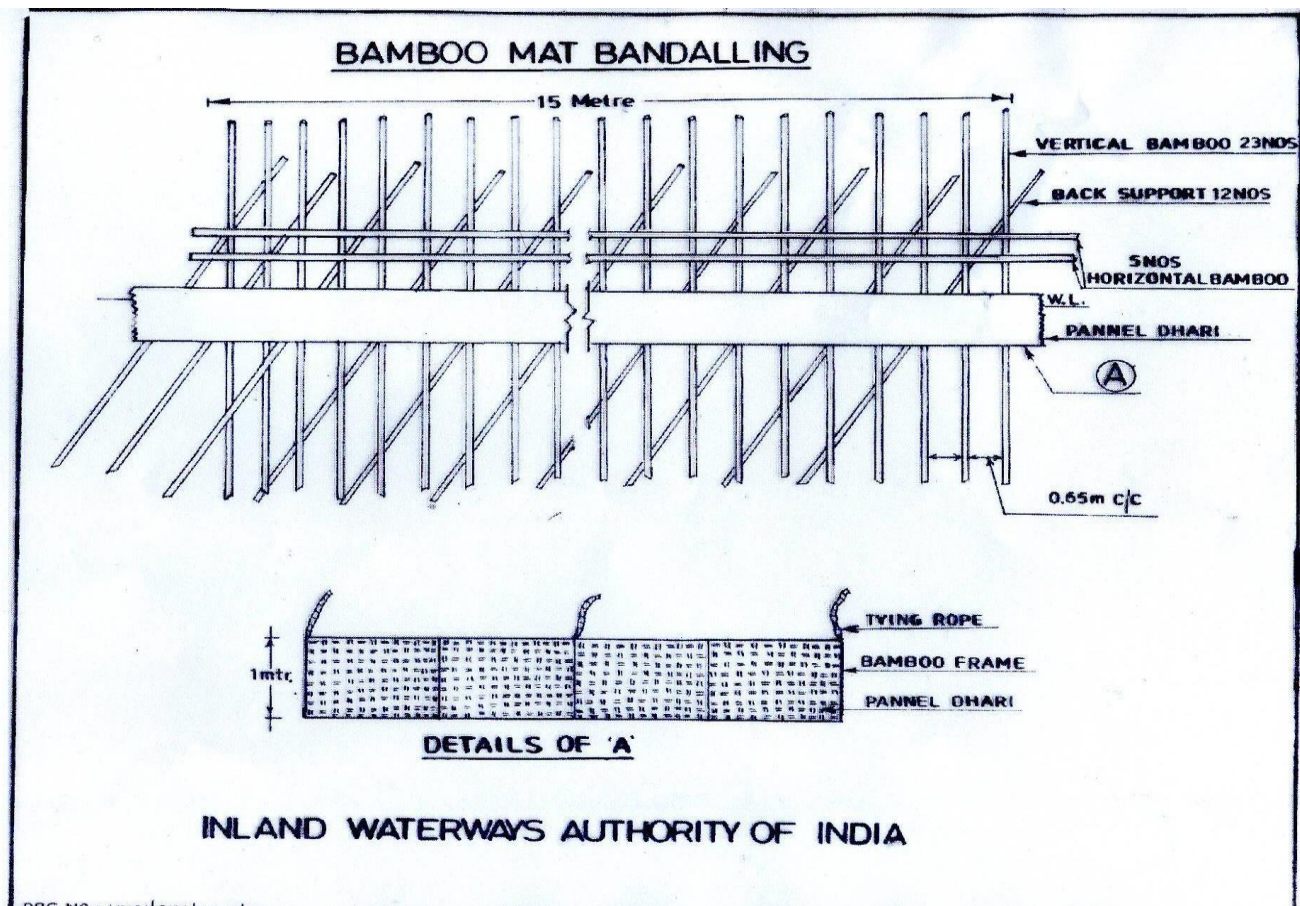
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| 1. Scope of work: | <p>Fairway Maintenance on performance-based dredging in Farakka – Tribeni (351 km) Stretch of National Waterway -1 (River Ganga) including River Conservancy and Channel marking</p> <p>The contract period is for a duration of 36 months including the monsoon period.</p> |
| 2 Schedule: | <p>Within 50 days from the date of signing of the Contract, Service Provider shall mobilise the equipment for commencing the dredging operations to meet the requirements of Services stipulated in Appendix A to this Contract.</p> <p>The Employer shall also issue a Notice to the Service Provider within 7 days of signing of the contract agreement to commence its activities.</p> <p>The service provider shall mobilise the equipment required for Dredging and Disposals at designated places, the Work shall be started with the Pre-Survey of the area jointly with the Engineer-In-Charge or his designated representative and TSSC-III.</p> |
| 3 Coordination of Work and Inspection: | <p>The service provider shall be responsible for coordinating all work including the joint Survey will be carried out to establish the amount of dredging undertaken on pre & post dredging basis in the initial 1 year during the period of Quantity based dredging and subsequently Joint Surveys on weekly basis during the performance-based maintenance period.</p> |
| 4. Protection of Property: | <p>The service provider shall continuously protect his work from damage, protect all persons from injury and protect all other property from damage, injury, or loss arising in connection with the work regardless of who the owner of said property may be. The contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, equipment, tools, and materials. The contractor shall be responsible for any damages which may result from their improper construction, maintenance or usage</p> |
| 5. Billing and Payment: | <p>The Service Provider shall submit monthly Bills for performing the services, from the Date of Commencement of Services which will be verified by the Engineer-in-charge subject to deduction as applicable in terms of SCC 3.8.3, and recovery towards repayment of Mobilization Advance & other recoveries, if any.</p> |

Enclosure-1

General Arrangement of Bandal

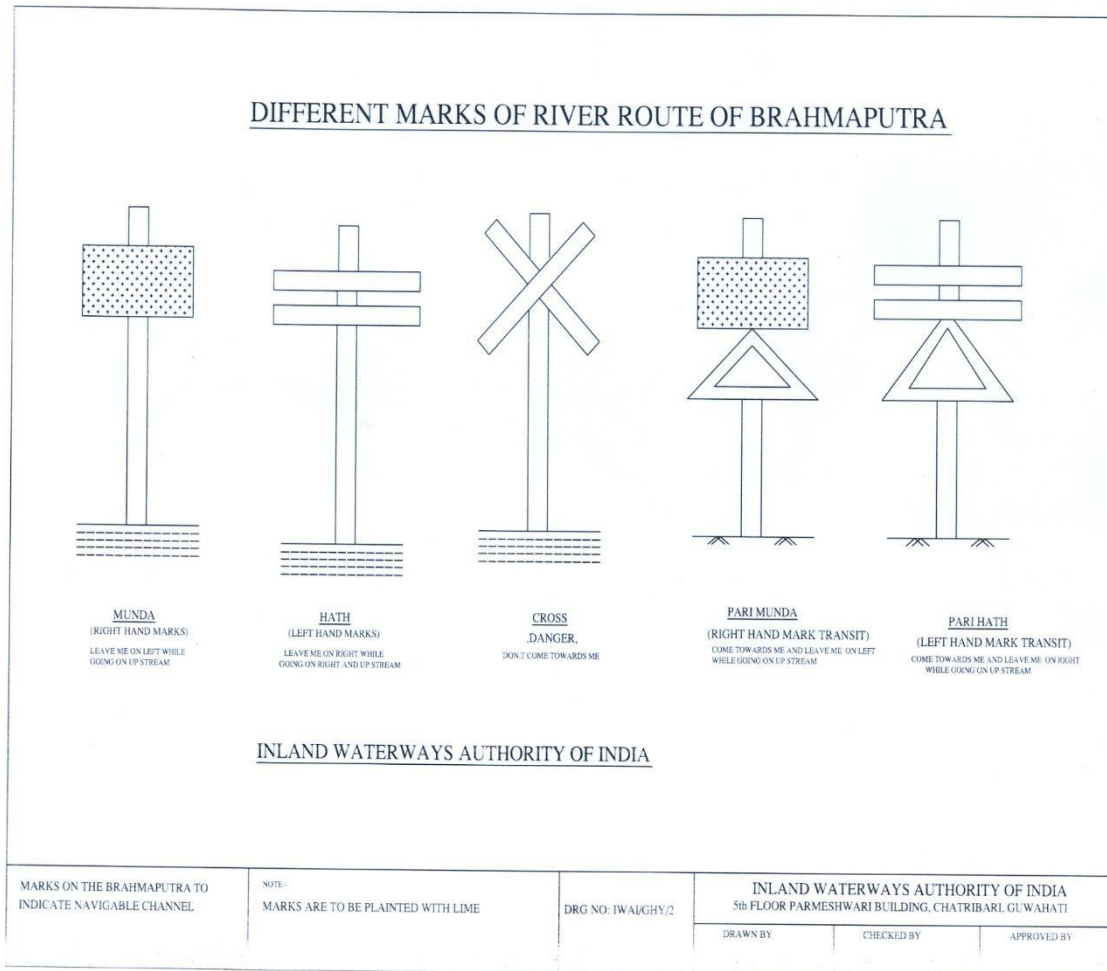


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| GENERAL ARRANGEMENT OF BANDAL (TYPE-A) | DRG NO: IWAI/GHY/3 | INLAND WATERWAYS AUTHORITY OF INDIA 5th FLOOR PARMESHWARI BUILDING, CHATTRIBARI, GUWAHATI | | |
| | | DRAWN BY | CHECKED BY | APPROVED BY |

Enclosure-2**Bamboo Mat Bandalling**

Enclosure-3

Various typical Navigational Channel Markers



APPENDIX A TO GENERAL CONDITIONS

Bank's Policy- Corrupt and Fraudulent Practices

(Text in this Appendix shall not be modified)

Guidelines for Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 Revised July 2014:

“Fraud and Corruption:

1.16 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, contractors and their agents (whether declared or not), sub-contractors, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts.²² In pursuance of this policy, the Bank:

- (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;²³;
 - (ii) “fraudulent practice” is 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;²⁴
 - (i) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;²⁵
 - (ii) “coercive practice” is 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;²⁶
- (v) “obstructive practice” is
- (aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from

²²In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

²³ For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

²⁴ For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

²⁵ For the purpose of this sub-paragraph, “parties” refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

²⁶ For the purpose of this sub-paragraph, “party” refers to a participant in the procurement process or contract execution.

- disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or
- (bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 1.16(e) below.
- (b) will reject a proposal for award if it determines that the bidder recommended for award, or any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- (c) will declare misprocurement and cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- (d) will sanction a firm or individual, at any time, in accordance with the prevailing Bank's sanctions procedures,²⁷ including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated²⁸;
- (e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and contractors, and their sub-contractors, agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank."

²⁷ A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

²⁸ A nominated sub-contractor, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

APPENDIX B

Environmental, Social, Health and Safety (ESHS)

Metrics for Progress Reports

Metrics for regular reporting:

- a. *environmental incidents or non-compliances with contract requirements, including contamination, pollution or damage to ground or water supplies;*
- b. *health and safety incidents, accidents, injuries and all fatalities that require treatment;*
- c. *interactions with regulators: identify agency, dates, subjects, outcomes (report the negative if none);*
- d. *status of all permits and agreements:*
 - iv. *work permits: number required, number received, actions taken for those not received;*
 - v. *status of permits and consents:*
 - *list areas/facilities with permits required (quarries, asphalt & batch plants), dates of application, dates issued (actions to follow up if not issued), dates submitted to resident engineer (or equivalent), status of area (waiting for permits, working, abandoned without reclamation, decommissioning plan being implemented, etc.);*
 - *list areas with landowner agreements required (borrow and spoil areas, camp sites), dates of agreements, dates submitted to resident engineer (or equivalent);*
 - *identify major activities undertaken in each area in the reporting period and highlights of environmental and social protection (land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation);*
 - *for quarries: status of relocation and compensation (completed, or details of activities and current status in the reporting period).*
- e. *health and safety supervision:*
 - v. *safety officer: number days worked, number of full inspections & partial inspections, reports to construction/project management;*
 - vi. *number of workers, work hours, metric of PPE use (percentage of workers with full personal protection equipment (PPE), partial, etc.), worker violations observed (by type of violation, PPE or otherwise), warnings given, repeat warnings given, follow-up actions taken (if any);*
- f. *worker accommodations:*
 - i. *number of expats housed in accommodations, number of locals;*
 - ii. *date of last inspection, and highlights of inspection including status of accommodations' compliance with national and local law and good practice, including sanitation, space, etc.;*
 - vii. *actions taken to recommend/require improved conditions, or to improve conditions.*
- g. *HIV/AIDS: provider of health services, information and/or training, location of clinic, number of non-safety disease or illness treatments and diagnoses (no names to be provided);*
- h. *gender (for expats and locals separately): number of female workers, percentage of workforce, gender issues raised and dealt with (cross-reference grievances or other sections as needed);*

i. training:

- i. number of new workers, number receiving induction training, dates of induction training;
- ii. number and dates of toolbox talks, number of workers receiving Occupational Health and Safety (OHS), environmental and social training;
- vi. number and dates of HIV/AIDS sensitization and/or training, no. workers receiving training (this reporting period and in the past); same questions for gender sensitization, flag person training.
- vii. number and date of GBV /SEA sensitization and/or training, number of workers receiving training on code of conduct (in the reporting period and in the past), etc.

j. environmental and social supervision:

- viii. environmentalist: days worked, areas inspected and numbers of inspections of each (road section, work camp, accommodations, quarries, borrow areas, spoil areas, swamps, forest crossings, etc.), highlights of activities/findings (including violations of environmental and/or social best practices, actions taken), reports to environmental and/or social specialist/construction/site management;
 - ix. sociologist: days worked, number of partial and full site inspections (by area: road section, work camp, accommodations, quarries, borrow areas, spoil areas, clinic, HIV/AIDS center, community centers, etc.), highlights of activities (including violations of environmental and/or social requirements observed, actions taken), reports to environmental and/or social specialist/construction/site management; and
 - x. community liaison person(s): days worked (hours community center open), number of people met, highlights of activities (issues raised, etc.), reports to environmental and/or social specialist /construction/site management.
- k. *Grievances*: list new grievances (e.g. allegations of GBV / SEA) received in the reporting period and unresolved past grievances by date received, complainant, how received, to whom referred to for action, resolution and date (if completed), data resolution reported to complainant, any required follow-up (Cross-reference other sections as needed):
- i. Worker grievances;
 - ii. Community grievances

l. Traffic and vehicles/equipment:

- i. traffic accidents involving project vehicles & equipment: provide date, location, damage, cause, follow-up;
- ii. accidents involving non-project vehicles or property (also reported under immediate metrics): provide date, location, damage, cause, follow-up;
- iii. overall condition of vehicles/equipment (subjective judgment by environmentalist); non-routine repairs and maintenance needed to improve safety and/or environmental performance (to control smoke, etc.).

m. Environmental mitigations and issues (what has been done):

- v. dust: number of working bowsers, number of waterings/day, number of complaints, warnings given by environmentalist, actions taken to resolve; highlights of quarry dust

control (covers, sprays, operational status); % of rock/spoil lorries with covers, actions taken for uncovered vehicles;

- vi. erosion control: controls implemented by location, status of water crossings, environmentalist inspections and results, actions taken to resolve issues, emergency repairs needed to control erosion/sedimentation;
- vii. quarries, borrow areas, spoil areas, asphalt plants, batch plants: identify major activities undertaken in the reporting period at each, and highlights of environmental and social protection: land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation;
- viii. blasting: number of blasts (and locations), status of implementation of blasting plan (including notices, evacuations, etc.), incidents of off-site damage or complaints (cross-reference other sections as needed);
- ix. spill cleanups, if any: material spilled, location, amount, actions taken, material disposal (report all spills that result in water or soil contamination);
- x. waste management: types and quantities generated and managed, including amount taken offsite (and by whom) or reused/recycled/disposed on-site;
- xi. details of tree plantings and other mitigations required undertaken in the reporting period;
- xii. details of water and swamp protection mitigations required undertaken in the reporting period.

n. compliance:

- iv. compliance status for conditions of all relevant consents/permits, for the Work, including quarries, etc.): statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance;
- v. compliance status of C-ESMP/ESIP requirements: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance
- vi. compliance status of GBV/SEA prevention and response action plan: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance
- vii. compliance status of Health and Safety Management Plan re: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance
- viii. other unresolved issues from previous reporting periods related to environmental and social: continued violations, continued failure of equipment, continued lack of vehicle covers, spills not dealt with, continued compensation or blasting issues, etc. Cross-reference other sections as needed.

| Following Environmental Safety Measures to be implemented by Contractor : | | | Appendix – I |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Sl. No. | Environmental Safety measures to be implemented | Responsibility | |
| i. | 'Consent to Establish' and 'Consent to Operate' shall be obtained from State Pollution Control Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974. | Contractor | |
| ii | The Project authority shall ensure that no rivers or tributaries are blocked due to any activities at the project site and free flow of water is maintained. | Contractor should ensure the same | |
| iii | Shoreline shall not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. | Contractor should ensure the same. | |
| iv | Dredging shall not be carried out during the fish/turtle breeding seasons. | Contractor | |
| v | All vessels used in the river will be fitted with noise control and animal exclusion devices so that aquatic life is not unduly disturbed. | Contractor should ensure. | |
| vi | Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts aquatic life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage. | Contractor | |
| vii | Construction waste including debris shall be disposed safely in the designated areas and in no case shall be disposed in the aquatic environment. | Contractor | |
| viii | Vessels shall not discharge oil or oily water such as oily bilge water containing more than 15ppm of oil. | Contractor shall ensure and maintain record | |
| ix | The project authority shall ensure that water traffic does not impact the aquatic wildlife sanctuaries that fall along the stretch of the river. | Contractor should ensure compliance of provisions for movement of vessel in the Wildlife Sanctuary as per statutory clearances | |
| x | All Vessels will also have to comply with 'Zero discharge' standards to prevent solid or liquid waste from flowing into the river and affecting its biodiversity. | Contractor | |
| xi | The Dredging shall be carried by integrated and systematic planning by selective grid method by allowing migratory movement of Benthic fauna. | Contractor | |
| xii | All required noise and vibration control measures are to be adopted in Dredgers. Cutter suction Dredgers should be avoided as much as possible which produces more noise and vibration. No Drilling and Blasting is to be carried out. | Contractor | |
| xiii | Pre geo-tectonic studies has to be completed and the strata to be dredged is predetermined with complete data pertaining to hardness, compressive and tensile strengths. | Contractor | |
| xiv | Dredger type and other strata loosening methods shall be preconceived. | Contractor | |
| xv | Staggered dredging shall be carried based on turbidity monitoring to minimize the impact of turbidity. | Contractor should comply and maintain record | |
| xvi | Threshold level of turbidity, which has a minimal effect on fauna, has to be predetermined and Dredging planned accordingly. | Contractor | |
| xvii | Further silt screens needs to be used for minimizing the spread of Turbidity. | Contractor | |
| xviii | Disposal places of Dredged sediments needs to be predetermined, along the shore by assessment of suitability, which will not affect the shoreline (erosion) and also causing impacts during monsoon and flooding. | Contractor | |
| xix | As much as possible, it shall not be disposed off in the river itself, and the site should be such that the dispersion is quicker by undertaking modelling studied. | Contractor | |
| xx | Ballast water control and management measures shall be implemented. | Contractor | |

| Appendix – I | | |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Following Environmental Safety Measures to be implemented by Contractor : | | |
| Sl. No. | Environmental Safety measures to be implemented | Responsibility |
| xxi | Waste and waste water reception facilities in Jetty shall be implemented. | Contractor should dispose the waste and wastewater at designated disposal place authorized by SPCB |
| xxii | The Risk and Disaster Management Plan has been prepared in consonance with the manual of terminals and harbours issued by the Ministry of Environmental and Forests dated 5 th May 2010. | Contractor should follow the risk and disaster management plan for the purpose of dredging in river accordance with the Statutory/regulatory guidelines. |
| xxiii | Standard Operating Procedures (SOP) and Emergency Response Plan (ERP) for onsite and offsite emergencies shall be prepared and implemented based on Hazard Identification and Risk Assessment to handle, process, store and transport of hazardous substances. | Contractor should prepare and follow the Standard Operating Procedures (SOP) and Emergency Response Plan (ERP) for onsite and offsite emergencies for dredging in river accordance with Statutory/regulatory guidelines and IWAI consent |
| xxiv | Oil spill contingency plan shall be prepared and part of DMP to tackle emergencies. The equipment and recovery of oil from a spill shall be assessed. Guidelines given in MARPOL and shipping Acts for oil spill management shall be followed. | Contractor should implement the Oil Spill Contingency Plan for dredging in river accordance with Statutory/regulatory guidelines. |
| xxv | No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources. | Contractor should ensure the same. |
| xxvi | All the erosion control measures shall be taken at water front facilities. | Contractor should ensure the same. |
| xxvii | Necessary Air Pollution Control measures shall be taken during loading, unloading, handling, transport of the material at the Berthing and water front facilities. | Contractor |
| xxviii | The Vessels shall comply the emission norms prescribed from time to time. | Contractor |
| xxiv | All safety measures are to be implemented in coordination with the respective state government departments such as State Forest Department, Public Works Department, State Pollution Control Board etc. | Contractor |

Appendices

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Appendix 1

Salient Features of Labour & Environment Protection Laws²⁹

SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK

- (a) Employees Compensation Act 1923: The Act provides for compensation in case of injury, disease or death arising out of and during the course of employment.
- (b) Payment of Gratuity Act 1972: gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more or on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- (c) Employees P.F. and Miscellaneous Provision Act 1952 (since amended): The Act provides for monthly contribution by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:
 - (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.
 - (iii) Payment of P.F. accumulation on retirement/death etc.
- (d) Maternity Benefit Act 1961: The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- (e) Sexual Harassment of Women at the Workplace (Prevention, Prohibition and Redressal) Act, 2013: This Act defines sexual harassment in the workplace, provides for an enquiry procedure in case of complaints and mandates the setting up of an Internal Complaints Committee or a Local Complaints Committee
- (f) Contract Labour (Regulation & Abolition) Act 1970: The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.
- (g) Minimum Wages Act 1948: The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.
- (h) Payment of Wages Act 1936: It lays down the mode, manner and by what date the wages are to be paid, what deductions can be made from the wages of the workers.

²⁹ This list is only illustrative and not exhaustive. Bidders and Contractors are responsible for checking the correctness and completeness of the list. The law as current on the date of bid opening will apply.

- (i) Equal Remuneration Act 1976: The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
- (j) Payment of Bonus Act 1965: The Act is applicable to all establishments employing 20 or more employees. Some of the State Governments have reduced this requirement from 20 to 10. The Act provides for payments of annual bonus subject to a minimum of 8.33% of the wages drawn in the relevant year. It applies to skilled or unskilled manual, supervisory, managerial, administrative, technical or clerical work for hire or reward to employees who draw a salary of Rs. 10,000/- per month or less. To be eligible for bonus, the employee should have worked in the establishment for not less than 30 working days in the relevant year. The Act does not apply to certain establishments.
- (k) Industrial Disputes Act 1947: the Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations, a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- (l) Trade Unions Act 1926: The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.
- (m) Child Labour (Prohibition & Regulation) Act 1986: The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in the Building and Construction Industry.
- (n) Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979: The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home upto the establishment and back, etc.
- (o) The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Building and Other Construction Workers Welfare Cess Act, 1996 (BOCWW Cess Act): All the establishments who carry on any building or other construction work and employ 10 or more workers are covered under these Acts. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be notified by the Government. The Employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as Canteens, First – Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.
- (p) Factories Act 1948: the Act lays down the procedure for approval of plans before setting up a factory engaged in manufacturing processes, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises

employing 10 persons or more with aid of power or 20 or more persons without the aid of power.

- (q) Weekly Holidays Act -1942
- (r) Bonded Labour System (Abolition) Act, 1976: The Act provides for the abolition of bonded labour system with a view to preventing the economic and physical exploitation of weaker sections of society. Bonded labour covers all forms of forced labour, including that arising out of a loan, debt or advance.
- (s) Employer's Liability Act, 1938: This Act protects workmen who bring suits for damages against employers in case of injuries endured in the course of employment. Such injuries could be on account of negligence on the part of the employer or persons employed by them in maintenance of all machinery, equipment etc. in healthy and sound condition.
- (t) Employees State Insurance Act 1948: The Act provides for certain benefits to insured employees and their families in case of sickness, maternity and disablement arising out of an employment injury. The Act applies to all employees in factories (as defined) or establishments which may be so notified by the appropriate Government. The Act provides for the setting up of an Employees' State Insurance Fund, which is to be administered by the Employees State Insurance Corporation. Contributions to the Fund are paid by the employer and the employee at rates as prescribed by the Central Government. The Act also provides for benefits to dependents of insured persons in case of death as a result of an employment injury.
- (u) The Personal Injuries (Compensation Insurance) Act, 1963: This Act provides for the employer's liability and responsibility to pay compensation to employees where workmen sustain personal injuries in the course of employment.
- (v) Industrial Employment (Standing Order) Act 1946: It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.

Appendix - II

**SALIENT FEATURES OF SOME OF THE MAJOR LAWS THAT ARE
APPLICABLE FOR PROTECTION OF ENVIRONMENT.**

1. The Environment (Protection) Act, 1986 and as amended: This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.
2. The Forest Conservation Act, 1980, as amended, and Forest (Conservation) Rules, 1981 as amended: These provides for protection of forests by restricting conversion of forested areas into non- forested areas and prevention of deforestation, and stipulates the procedures for cutting any trees that might be required by the applicable rules. Permissions under the Act also stipulates the norms and compliance requirements of the employer and any contractor on behalf of the employer.
3. State Tree Preservation Acts as may be in force: These provide for protection of trees of important species. Contractors will be required to obtain prior permission for full or partial cutting, uprooting, or pruning of any such trees.
4. The Wildlife (Protection) Act, 1972, and as amended: This provides for protection of wildlife through notifying National Parks and Sanctuaries and buffer areas around these zones; and to protect individuals of nationally important species listed in the Annex of the Act.
5. The Biological Diversity Act, 2002: This provides for conservation of biological diversity, sustainable use of components of biological diversity, and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith or incidental thereto.
6. The Public Liability Insurance Act, 1991 as amended and The Public Liability Insurance Rules, 1991 as amended: These provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.
7. The Ancient Monuments and Archaeological Sites and Remains Act, 1958 and the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010, the Ancient Monuments and Archaeological Sites and Remains Rules, 1959 amended 2011, the National Monuments Authority Rules, 2011 and the similar State Acts: These provide for conservation of cultural and historical remains found in India. Accordingly, area within the radii of 100m and 300m from the "protected property" are designated as "protected area" and "controlled area" respectively. No development activity (including building, mining, excavating, blasting) is permitted in the "protected area" and development activities likely to damage the protected property is not permitted in the "controlled area" without prior

permission of the Archaeological Survey of India (ASI) or the State Departments of Art and Culture or Archaeology as applicable.

8. The Environmental Impact Assessment Notification, 2006 and as amended: This provides for prior environmental clearance for new, modernization and expansion projects listed in Schedule 1 of the Notification. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any environmental management plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.
9. The Water (Prevention and Control of Pollution) Act, 1974 as amended, and the Water (Prevention and Control of Pollution) Rules, 1975 as amended: These provide for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates waste water, and observe the required standards of establishment and operation of these items of work or installations; as well as install and operate all required waste water treatment facilities.
10. The Water (Prevention and Control of Pollution) Cess Act, 1977 and The Water (Prevention and Control of Pollution) Cess Rules, 1978: These provide for the levy and collection of a cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution under the Water (Prevention and Control of Pollution) Act, 1974.
11. The Air (Prevention and Control of Pollution) Act, 1981 as amended, and the Air (Prevention and Control of Pollution) Rules, 1982: These provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates air pollution such as batching plants, hot mix plants, power generators, backup power generation, material handling processes, and observe the required standards of establishment and operation of these items of work or installations.
12. Noise Pollution (Control and Regulation) Rules, 2000, and as amended: This provides for standards for noise for day and night for various land uses and specifies special standards in and around sensitive receptors of noise such as schools and hospitals. Contractors will need to ensure compliance to the applicable standards, and install and operate all required noise control devices as may be required for all plants and work processes.

13. Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996: This provides for Requirement of preparation of on-site and off-site Disaster Management Plans for accident-prone areas.
14. The Explosives Act 1884 and the Explosives Rules, 2008: These provide for safe manufacture, possession, sale, use, transportation and import of explosive materials such as diesel, Oil and lubricants etc.; and also for regulating the use of any explosives used in blasting and/or demolition. All applicable provisions will need compliance by the contractors.
15. The Petroleum Rules, 2002: This provides for safe use and storage of petroleum products, and will need to be complied by the contractors.
16. The Gas Cylinder Rules 2004 and amendments: This provides for regulations related to storage of gas, and possession of gas cylinder more than the exempted quantity. Contractors should comply with all the requirements of this Rule.
17. Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 and as amended: These provide for use and storage of hazardous material such as highly inflammable liquids like HSD/LPG. Contractors will need to ensure compliance to the Rules; and in the event where the storage quantity exceeds the regulated threshold limit, the contractors will be responsible for regular safety audits and other reporting requirements as prescribed in the Rules.
18. Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016: These provide for protection of general public from improper handling storage and disposal of hazardous waste. The rules prescribe the management requirement of hazardous wastes from its generation to final disposal. Contractors will need to obtain permission from the State Pollution Control Boards and other designated authorities for storage and handling of any hazardous material; and will to ensure full compliance to these rules and any conditions imposed in the permit.
19. The Bio Medical Waste Management Rules, 2016: This provides for control, storage, transportation and disposal of bio-medical wastes. As and where the contractor has any first aid facility and dispensaries, established in either temporary or permanent manner, compliance to these Rules are mandatory.
20. Construction and Demolition Waste Management Rules, 2016: This provides for management of construction and demolition waste (such as building materials possible to be reused, rubble and debris or the like); and applies to all those waste resulting from construction, re-modelling, repair or demolition of any civil structure. Contractor will need to prepare a waste disposal plan and obtain required approval from local authorities, if waste generation is more than 20 tons in any day or 300 tons in any month during the contract period; and ensure full compliance to these rules and any conditions imposed in the regulatory approval.
21. The E-Waste (Management) Rules, 2016: This provides for management of E-wastes (but not covering lead acid batteries and radio-active wastes) aiming to enable the recovery and/or reuse of useful material from e-waste, thereby reducing the hazardous wastes destined for disposal and to ensure the environmentally sound management of all types of waste of electrical and electronic equipment. This Rule applies to every manufacturer, producer, consumer, bulk consumer, collection centers, dealers, e-retailer, refurbisher, dismantler and

recycler involved in manufacture, sale, transfer, purchase, collection, storage and processing of e-waste or electrical and electronic equipment listed in Schedule I, including their components, consumables, parts and spares which make the product operational.

22. Plastic waste Management Rules, 2016: This provides for control and management of the plastic waste generated from any activity. Contractors will ensure compliance to this Rule.
23. The Batteries (Management and Handling) Rules 2001: This provides for ensuring safe disposal and recycling of discarded lead acid batteries likely to be used in any equipment during construction and operation stage. Rules require proper control and record keeping on the sale or import of lead acid batteries and recollection of the used batteries by registered recyclers to ensure environmentally sound recycling of used batteries. Contractors will ensure compliance to this Rule.
24. The Ozone Depleting Substances (Regulation and Control) Rules, 2000 and as amended: This provides for regulation of production and consumption of ozone depleting substances in the country, and specifically prohibits export to or import from countries not specified in the Rules, and prohibits unless specifically permitted, any use of ozone depleting substance.
25. The Coastal Regulation Zone Notifications, 1991 and as amended: This provides for regulation of development activities within the 500m of high tide line in coastal zone and 100m of stretches of rivers and estuaries influenced by tides. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.
26. The Motor Vehicle Act 1988 as amended (and State Motor Vehicle Acts as may be in force) and the Motor Vehicle Rules, 1989, and as amended (and State Motor Vehicle Rules as may be in force): To minimize the road accidents, penalizing the guilty, provision of compensation to victim and family and check vehicular air and noise pollution. Contractors will be required to ensure full compliance to these rules.
27. Easement Act, 1882: This provides for the rights of landowners on groundwater. Contractors will need to ensure that other landowners' rights under the Act is not affected by any groundwater abstraction by the contractors.
28. State Groundwater Acts and Rules as may be in force and the Guidelines for Groundwater Abstraction for drinking and domestic purposes in Notified Areas and Industry/Infrastructure project proposals in Non-Notified areas, 2012: These provide for regulating extraction of ground water for construction/industrial and drinking and domestic purposes. Contractors will need to obtain permission from Central/State Groundwater Boards prior to groundwater abstraction through digging any bore well or through any other means; and will to ensure full compliance to these rules and any conditions imposed in the permit.
29. The Mines Act, 1952 as amended; the Minor Mineral and concession Rules as amended; and the State Mineral (Rights and Taxation) Acts as may be in force: These provide for for safe and sound mining activity. The contractors will procure aggregates and other building materials from quarries and borrow areas approved under such Acts. In the event the contractors open any new quarry and/or borrow areas, appropriate prior permission from the

State Departments of Minerals and Geology will need to be obtained. Contractors will also need to ensure full compliance to these rules and any conditions imposed in the permit.

30. The Insecticides Act, 1968 and Insecticides Rules, 1971 and as amended: These provide for regulates the manufacture, sale, transport, distribution, export, import and use of pesticides to prevent risk to human beings or animals, and for matters connected therewith. No one should import or manufacture; sell, stock or exhibit foe sale; distribute, transport, use: (i) any misbranded insecticides, (ii) any insecticide the sale, distribution or use of which is for the time being prohibited under the Act; and (iii) any insecticide except in accordance with the condition on which it was registered under the Act.
31. National Building Codes of India, 2005 and as amended: This provides guidelines for regulating the building construction activities in India. The code mainly contains administrative regulations, development control rules and general building requirements; stipulations regarding materials, structural design and construction; and building and plumbing services. Contractors will be required to comply with all Bureau of Indian Standards Codes dealing with: (i) use and disposal of asbestos containing materials in construction; (ii) paints containing lead; (iii) permanent and temporary ventilations in workplace; (iv) safety, and hygiene at the workplace; (v) prevention of fire; (vi) prevention of accidents from faulty electrical gadgets, equipment and accessories; and all other such codes incidental to the Contract.

Appendix -3 Appointment of Adjudicator

Suggested Draft of **Letter of Appointment of Adjudicators** in civil works contracts

Sub: _____ (Name of the Contract)

To

Name and address of the Adjudicator

We hereby confirm your appointment as Adjudicator for the above contract to carry out the assignment specified in this Letter of Appointment.

For administrative purpose _____ (*name of the officer representing the Employer*) has been assigned to administer the assignment and to provide the Adjudicator with all relevant information needed to carry out the assignment on behalf of both the Employer and the contractor. The services will be required during the period of contract for the work of (Name of the Contract) _____.

The Adjudicator shall visit the worksite once in 3 (three) months till the completion of the work indicated above or as specifically requested by Employer/ Contractor for the period upto the end of defects liability period with prior intimation to the Employer and the contractor. The duration of each visit shall ordinarily be for one day only. These durations are approximate and (*Name of the Employer and Name of the Contractor*) may find it necessary to postpone or cancel the assignment and/or shorten or extend the duration.

The appointment will become effective upon confirmation of letter by you. The appointment of Adjudicator shall be liable for termination under a 30 (thirty) days written notice from the date of issue of the notice, if both Employer and the Contractor so desire. Also the appointment shall automatically stand terminated 14 days after the defect notice / correction period as stated in Clauses 23 and 24 of the Conditions of Contract is over.

The Adjudicator will be paid a fee of Rs. _____ (Rupees _____ only) per each day of visit at the worksite. The actual expenses for boarding and traveling in connection with the assignment will be reimbursed to the Adjudicator. The Adjudicator will submit a pre-receipted bill in triplicate to the Employer indicating the date of the visit, fees for the visit and a proof in support of the actual expenditure [only for items valued above Rs. 200 each] incurred by him against boarding, lodging and traveling expenses after performing the visit on each occasion. The Employer will make the admissible payment (both the Employer's and the Contractor's share) to the Adjudicator within 30 days of the receipt of the bill. The Contractor's share on this account (half the paid amount) will be recovered by the Employer from the Contractor's bills against the work.

In accepting this assignment, the Adjudicator should understand and agree that he is responsible for any liabilities and costs arising out of risks associated with travel to and from the place of emergency repatriation, loss or damage to personal/professional effects and property. The Adjudicator is advised to effect personal insurance cover in respect of such risks if he does not already have such cover in place. In this regard, the Adjudicator shall maintain appropriate

medical, travel, accident and third-party liability insurance. The obligation under this paragraph will survive till termination of this appointment.

Procedures for resolution of disputes by the Adjudicator is described in the contract of _____ (name of the contract) between the Employer and the contractor vide clause no.24 of the General Conditions of Contract. Your recommendation should be given in the format attached, within 28 days of receipt of a notification of dispute.

The Adjudicator will carry out the assignment in accordance with the highest standard of professional and ethical competence and integrity, having due regard to the nature and purpose of the assignment, and will conduct himself in a manner consistent herewith. After visiting the worksite, the Adjudicator will discuss the matter with the Employer and if necessary with the Contractor before arriving at any decision.

The Adjudicator will agree that all knowledge and information not within the public domain, which may be acquired while carrying out this service shall be all time and for all purpose, regarded as strictly confidential and held in confidence, and shall not be directly or indirectly disclosed to any party whatsoever, except with the permission of the Employer and the contractor. The Adjudicator's decision should be communicated in the form of a speaking order specifying the reasons.

The Adjudicator will agree that any manufacturing or construction firm with which he might be associated with, will not be eligible to participate in bidding for any goods or works resulting from or associated with the project of which this consulting assignment forms a part

Read and Agreed

Name of Adjudicator
Signature

Place:

Date:

Name of Employer

Signature of authorized representative of Employer

Name of the Contractor

Signature of authorized representative of Contractor

Attachment: Copy of contract document between the Employer and contractor and format for recommendation.

SUMMARY OF ADJUDICATOR'S RESPONSIBILITIES

The Adjudicator has the following principal responsibilities:

1. Visit the site periodically.
2. Keep abreast of job activities and developments.
3. Encourage the resolution of disputes by the parties.
4. When a dispute is referred to it, conduct a hearing (no legal presentation), complete its deliberations, and prepare a recommendations in a professional and timely manner(as per sample format)

Sample Format of Adjudicator's Recommendation

[Project Name] Recommendation of Adjudicator

Dispute No. XX [NAME OF DISPUTE]

Hearing Date: _____

Dispute

Description of dispute. A one or two sentence summation of the dispute.

Contractor's Position

A short summation of the contractor's position as understood by the Adjudicator.

Employer's Position

A short summation of the Employer's position as understood by the Adjudicator.

Recommendation

The Adjudicator's specific recommendation for settlement of the dispute. (*The recommended course is consistent with the explanation*).

Explanation

(*This section could also be called Considerations, Rationale, Findings, Discussion, and so on.*)

The Adjudicator's description of how each recommendation was reached.

Respectfully submitted,

Date : _____

Date : _____

Date : _____

Section X - Contract Forms

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

Table of Forms

Letter of Acceptance

Issue of Notice to Proceed with the Work

Contract Agreement

Performance Security

Environmental, Social, Health and Safety (ESHS) Performance Security.....
Advance Payment Security

Retention Money Security

Letter of Acceptance

[letterhead paper of the Employer]

[The Letter of Acceptance shall be the basis for formation of the Contract as described in ITB Clause 43. This Standard Form of Letter of Acceptance shall be filled in and sent to the successful Bidder only after evaluation of bids has been completed, subject to any review by the World Bank required under the Loan Agreement.]

[insert date]

Identification No and Title of Contract: *[insert identification number and title of the Contract]*

To: *[insert name and address of the Contractor]*

This is to notify you that your Bid dated *[insert date]* for execution of the *[insert name of the Contract and identification number, as given in the PCC]* for the Contract Price *[insert amount in numbers and words]* as corrected and modified³⁰ in accordance with the Instructions to Bidders is hereby accepted by our Agency.

[insert one of the following (a) or (b) options]

- (a) We accept that *[insert name proposed by bidder]* be appointed as the Adjudicator.³¹
- (b) We do not accept that *[insert name proposed by bidder]* be appointed as Adjudicator, and by sending a copy of this Letter of Acceptance to *[insert name of the Appointing Authority]*, we are hereby requesting *[insert name]*, the Appointing Authority, to appoint the Adjudicator in accordance with GCC 23.³²

We note that as per your bid, you do not intend to subcontract any component of work.

[OR]

We note that as per your bid, you propose to employ M/s. as sub-contractor for executing

[Delete whatever is inapplicable]

You are hereby requested to furnish Performance Security, plus additional security for unbalanced bids in terms of ITB clause 40, and ESHS Performance Security ***[Delete ESHS Performance Security if it is not required under the contract]*** in the form detailed in ITB

³⁰ Delete "corrected and" or "and modified" if not applicable. See Notes on Standard Form of Agreement, next page.

³¹ To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the Instructions to Bidders, and has accordingly offered another candidate.

³² To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the ITB, has accordingly offered another candidate, and the Employer does not accept the counterproposal.

Clause 45 for amounts³³ of Rs. ____ and Rs. ____ within 21 days of the receipt of this letter of acceptance, and visit this office to sign the contract, failing which action as stated in ITB Clause 45.2 will be taken. The securities shall be valid upto 28 days from the date of completion i.e. upto and shall be as per the Performance Security Form and the ESHS Performance Security Form *[Delete reference to the ESHS Performance Security Form if it is not required under the contract]*, included in Section X - Contract Forms, of the bidding document.

We have reviewed the construction methodology submitted by you alongwith the bid in response to ITB Clause 16 and our comments are given in the attachment. You are requested to submit a revised Program including ESHS requirements as per Clause 26 of General Conditions of Contract within 14 days of receipt of this letter of acceptance.

Yours faithfully,

Authorized Signature.....

Name and Title of Signatory.....

Name of Agency.....

³³ Insert amounts for (i) Performance Security, plus additional security for unbalanced bids; and (ii) ESHS Performance Security respectively.

Issue of Notice to proceed with the work

(letterhead of the Employer)

_____ (date)

To

_____ (name and address of the Contractor)

Dear Sirs:

Pursuant to your furnishing the requisite securities as stipulated in ITB clause 45.1, insurance policy as per GCC 13, construction methodology as stated in letter of acceptance and signing of the contract agreement for the construction of _____ @ a Bid Price of Rs. _____, you are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of
signatory authorized to sign on
behalf of Employer)

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made the day 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 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 Agreement. This Agreement shall prevail over all other Contract documents.
 - (a) this Agreement
 - (b) the Letter of Acceptance
 - (c) the Contractor’s Bid including completed schedules and priced bill of quantities,
 - (d) the Addenda No’s *[insert addenda numbers if any]*.
 - (e) the Particular Conditions of contract
 - (f) the General Conditions of contract;
 - (g) the Specifications
 - (h) the Drawings; and
 - (i) Construction Program, Methodology, Quality Assurance Program, ESHS Management Strategies and Implementation Plans, and Code of Conduct (ESHS)
 - (j) Joint Venture Agreement [for JVs only]
 - (k) Any other document listed in PCC as 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 India on the day, month and year indicated above.

Signed by:
for and on behalf of the Employer
in the presence of:
Witness, Name, Signature, Address, Date

Signed by:
for and on behalf the Contractor
in the presence of:
Witness, Name, Signature, Address, Date

**Performance Security - Bank Guarantee [including
Additional Performance Security for unbalanced bids]**

[Guarantor letterhead or SWIFT identifier code]

Performance Guarantee No.....*[insert guarantee reference number]*

Date.....*[insert date of issue of the guarantee]*

To: _____ *[name of Employer]*
 _____ *[address of Employer]*

WHEREAS _____ *[name and address of Contractor³⁴]*
 (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. _____ dated
 _____ to execute _____ *[name of Contract and brief
 description of Works]* (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, upto a total of _____ *[amount of guarantee³⁵]*

_____ *[in words]*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ *[amount of guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until³⁶, and any demand for payment under it must be received by us at this office on or before that date.

Signature and seal of the guarantor _____

Name of Bank _____

Address _____ Date

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

³⁴ In the case of a JV, insert the name of the Joint Venture

³⁵ An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract less provisional sum if any, plus additional performance security for unbalanced bids if any, and denominated in Indian Rupees.

³⁶ Insert the date twenty-eight days after the expected completion date as described in GC Clause 53.1. The Employer should note that in the event of an extension of this date 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"

Environmental, Social, Health and Safety (ESHS) Performance Security - Bank Guarantee *[Guarantor*

letterhead or SWIFT identifier code]

ESHS Performance Guarantee No.....*[insert guarantee reference number]*

Date.....*[insert date of issue of the guarantee]*

To: _____ *[name of Employer]*

_____ *[address of Employer]*

WHEREAS _____ *[name and address of Contractor³⁷]*
(hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. _____ dated
_____ to execute _____ *[name of Contract and brief*
description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with Environmental, Social, Health and/or Safety (ESHS) obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, upto a total of _____ *[amount of guarantee³⁸]*

_____ *[in words]*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ *[amount of guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until³⁹, and any demand for payment under it must be received by us at this office on or before that date.

Signature and seal of the guarantor _____

Name of Bank _____

Address _____ Date

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

³⁷ In the case of a JV, insert the name of the Joint Venture

³⁸ An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract less provisional sum if any, and denominated in Indian Rupees.

³⁹ Insert the date twenty-eight days after the expected completion date as described in GC Clause 53.1. The Employer should note that in the event of an extension of this date 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 -- Demand Guarantee*[Guarantor letterhead or SWIFT identifier code]*Advance Payment Guarantee No.....*[insert guarantee reference number]*Date.....*[insert date of issue of the guarantee]*

To: _____ *[name of Employer]*
_____ *[address of Employer]*
_____ *[name of Contract]*

Gentlemen:

In accordance with the provisions of the Conditions of Contract, Sub-clause 49.1 ("Advance Payment") of the above-mentioned Contract, _____ *[name and address of Contractor⁴⁰]* (hereinafter called "the Contractor") shall deposit with _____ *[name of Employer]* a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of _____ *[amount of guarantee⁴¹]* _____ *[in words]*.

We, the _____ *[bank or financial institution]*, as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to _____ *[name of Employer]* on his first demand without whatsoever right of objection on our part and without his first claim to the Contractor, in the amount not exceeding _____ *[amount of guarantee]* _____ *[in words]*.

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed thereunder or of any of the Contract documents which may be made between _____ *[name of Employer]* and the Contractor, shall in any

way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until _____ *[name of Employer]* receives full repayment of the same amount from the Contractor. Consequently any demand for payment under this guarantee must be received by us at this office on or before that date.

Yours truly,

Signature and seal: _____

Name of Bank: _____

Address: _____

Date: _____

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

⁴⁰ In the case of a JV, insert the name of the Joint Venture

⁴¹ An amount shall be inserted by the bank representing the amount of the Advance Payment, and denominated in Indian Rupees.

Retention Money Security – NOT APPLICABLE**Demand Guarantee***[Guarantor letterhead or SWIFT identifier code]*

_____ *[Bank's name and address of issuing branch or office]*

Beneficiary: _____ *[Name and Address of Employer]*

Date: _____

RETENTION MONEY GUARANTEE NO.: _____

We have been informed that _____ *[name of contractor⁴²]* (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, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment, payment of _____ *[insert the second half of the Retention Money]* is to be made against a Retention Money guarantee.

At the request of the contractor, we _____ *[name of Bank]* hereby irrevocably

undertake to pay you the sum or sums not exceeding in total an amount of _____ *[amount in Rupees]* (_____ *[amount in words⁴³]*) 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 without cavil or argument.

It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Contractor on its account number _____ at _____ *[name and address of Bank]*.

This guarantee shall expire, at the latest, 21 days after the date when the Employer has received a copy of the Defects Liability Certificate issued by the Project Manager. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

[Signature(s) and seal of the guarantor]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

⁴² In the case of a JV, insert the name of the Joint Venture

⁴³ The Guarantor shall insert an amount representing the amount of the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security.

ANNEXURE-1

Fee & other expenses payable to the Dispute Review Board Members including Chairman⁴⁴ (the figures are indicative-Amend as appropriate for each case)

| S. No. | Particulars of fee & other charges | Amount Payable |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Retainership fee, Secretarial assistance and incidental charges (Telephone, Fax, Postage etc.) during construction and maintenance services period | Rs. 10,000/- per month for one package and maximum of Rs. 20,000/- per month for 2 or more packages. |
| 2 | Daily fee during site visit | Rs. 5,000/- |
| 3 | Travelling Expenses | Economy Class by Air, A.C. First Class by train and A.C. Taxi by road |
| 4 | Lodging | (i) Upto Rs. 10,000/- per day (Metro cities) (ii) Upto Rs. 5,000/- per day (Other cities) (iii) Rs. 2000/- per day (Own arrangement) |
| 5 | Extra charges for days other than hearing/ meeting days (travel upto a maximum of 2 days on each occasion) | Rs. 2,000/- per day |
| 6 | Escalation | The retainership fee shall remain fixed for the term of each Board Member. |
| 7 | Retainership fee, Secretarial assistance and incidental charges (Telephone, Fax, Postage etc.) during Defects Notification Period (DNP) | With effect from the first day of the calendar month following in which the Taking-over-Certificate, referred to in Cl. 28 of GC and Specific Provisions of the contract, is issued for the whole of the works, the Board Members shall receive only one-third (1/3 rd) of the monthly retainership fee mentioned at S.No.1 above. |

Note: 1. Lodging, boarding and travelling expenses shall be allowed only for those members who are residing 100 kms away from place of meeting.

Delhi, Mumbai, Chennai, Kolkata, Bangalore and Hyderabad shall be considered as Metro cities.

⁴⁴ If DRB Members have been nominated by or have been identified from the list provided by an Institution, the fee and other expenses payable to the members shall be as per the rules of the Institution. The entries in the Annexure should be accordingly modified in such cases.

ANNEXURE – 1 (A)**Draft Letter of Appointment of Dispute Review Board Members**

GOVERNMENT OF
.....Department

Date:

To

- 1. Sri Chairman of the Dispute Review Board.**
- 2. Sri Member of the Dispute Review Board.**
- 3. Sri Member of the Dispute Review Board.**

Sir,

Sub: - Widening and Strengthening of..... for contract package

- 1.** We, hereby confirm your appointment for the Dispute Review Board for the above contract to carry out the assignment specified in this Letter of Appointment.
- 2.** For Administrative purposes Project Director,, has been assigned to administer the assignment, to carry out the assignment on behalf of both the Employer and the Contractor. The services will be required during the period of contract for the work of
- 3.** The conditions of services for functioning of the Board Members and the rules and procedures to be followed by Dispute Review Board in resolution of Disputes are given in detail in the contract agreement vide Clause 6 of General Conditions of Contract read alongwith Appendix B (General Conditions of DRB agreement and Procedural Rules).
- 4.** The appointment will become effective, upon confirmation of this letter by you. The appointment shall be liable for termination under a 30 (Thirty) days written notice from the date of issue of the notice, if both Employer and the Contractor so desire. The appointment of any member may be terminated by mutual agreement of both parties, but not by the Employer or the Contractor acting alone. Unless otherwise agreed by both parties, the appointment of the DRB (including each member) shall expire when the discharge referred to in GC clause 56 (Discharge) shall have become effective.
- 5.** The payments for your services shall be made as per Annexure-I enclosed alongwith this letter:
 - a) Escalation.** The retainership fees shall remain fixed for the period of each Board Member's term.
 - b)** With effect from the first day of the calendar month following in which the Taking Over Certificate referred to in Clause 28 of GC and Specific Provisions is issued for the whole of the works, the Board Members shall receive only one-third of the monthly retainer fee. Beginning with the next month after the Defects Notification Period expires; the Board Members shall no longer receive any monthly retainer fee.
 - c)** The members shall submit invoices for payment of the monthly retainer fee and air fares quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a site visit or hearing. All invoices shall be

accompanied by a brief description of the activities performed during the relevant period and shall be addressed to the Contractor. The Contractor(or the Employer as may be mutually agreed between contractor and Employer) shall pay each of the Members' invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the statements under the contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract.

- d) Failure of either the Employer or the Contractor to make payment in accordance with this Agreement shall constitute an event of default under the contract, entitling the non-defaulting party to take the measures set forth, respectively, in Clause 6 of the Appendix B.
 - e) Notwithstanding such event of default, and without waiver of rights there from, in the event that either the Employer or the Contractor fails to make payment in accordance with these Rules and Procedures, the other party may pay whatever amount may be required to finance the operation of the Board. The party making such payments, in addition to all other rights arising from such default shall be entitled to reimbursement of all sums paid in excess of one-half of the amount required to maintain operation of the Board, plus all costs of obtaining such sums.
6. In accepting this assignment, you should understand and agree that you are responsible for any liabilities and costs arising out of risks associated with travel to and from the place of assignment. This includes (but is not limited to) risks such as accident (death and injury), illness, emergency repatriation, loss or damage to personal/ professional effects and property. You are advised to effect personal, insurance cover in respect of such risks, if you do not already have such cover in place. In this regard, you shall maintain appropriate medical, travel, accident and third-party liability insurance. The obligation under this paragraph will survive till termination of this appointment.
 7. You will carry out the assignment in accordance with the highest standard of professional and ethical competence and integrity, having due regard to the nature and purpose of the assignment, and will conduct yourself in a manner consistent herewith. The format for submission of recommendations is given in Annexure-1(B).
 8. You agree that all knowledge and information not within the public domain, which may be acquired while carrying out this service shall be, for all time and for all purpose, regarded as strictly confidential and held in confidence, and shall not be directly or indirectly disclosed to any party whatsoever, except with the permission of the Employer and the Contractor.
 9. You agree that any manufacturing or construction firm, with which you are associated with, will not be eligible to participate in bidding for any goods or works resulting from or associated with the project of which this consulting assignment forms a part.
 10. Kindly sign two copies of this letter and return one copy each of the both to Employer and to the Contractor.

Read and Agreed

Place:

Date:

Name of Employer

Signature of authorized

Representative of Employer.

Name of the Member of Dispute Review Board

Signature

Name of the Contractor

**Signature of authorized Representative of
Contractor**

ANNEXURE – 1 (B)
[Project Name]

Recommendation of Dispute Review Board

Dispute No. (NAME OF DISPUTE).

Hearing Date....., 20.....

Dispute

Description of dispute. A one or two sentence summation of the dispute.

Contractor's Position

A Short summation of the Contractor's position as understood by the board.

Owner's Position

A Short summation of the Contractor's position as understood by the board.

Recommendation

The board's specific recommendation for settlement of the dispute. (The recommended course is consistent with the explanation).

Explanation

This section could also be called Considerations, Rationale, Findings, Discussion, and so on
 The Board's description of how each recommendation was reached.

Respectfully submitted,

Date: _____
 Date: _____
 Date: _____

ENVIRONMENT MANAGEMENT PLAN:
FARAKKA TO TRIBENI STRETCH

**“CAPACITY AUGMENTATION OF NATIONAL
WATERWAY.1”**

(Jal Marg Vikas Project)

**ENVIRONMENTAL IMPACT ASSESSMENT
REPORTS**

VOLUME - 8:
Environmental Management Plan (EMP)
for
Maintenance Dredging

May 2016
(Revised September 2016)



**EQMS India Pvt. Ltd. In JV IRG Systems South Asia Pvt. Abnaki Infrastructure Applications
with & Integrated Development Pvt. Ltd.**

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CHAPTER 1. EMP FOR MAINTENANCE DREDGING

1.1. Introduction

Inland waterways Authority of India (IWAI) has proposed to augment the navigation capacity of waterway NW-1 (Haldia to Allahabad) and continue to maintain the entire stretch. To improve the navigation in national waterways-1 IWAI has proposed a project “Capacity Augmentation of the Nation Waterway 1 (1620 kms, with minimum water depth of 2.5-3 m) between Haldia and Allahabad”. For which dredging is required at different locations along the NW-1 and to be carried out so as to maintain the least available depth (LAD).

Under this project IWAI is developing Fairway development of Farakka – Tribeni stretch which is critical component for ensuring 24 hrs. navigation of vessels in the NW-1 under JMVP. The sensitive areas on the stretch are given in table 1.1. There are no separate sensitive area falling in Farakka-Tribeni stretch.

Location map of NW-1 is given in Figure 1.1.

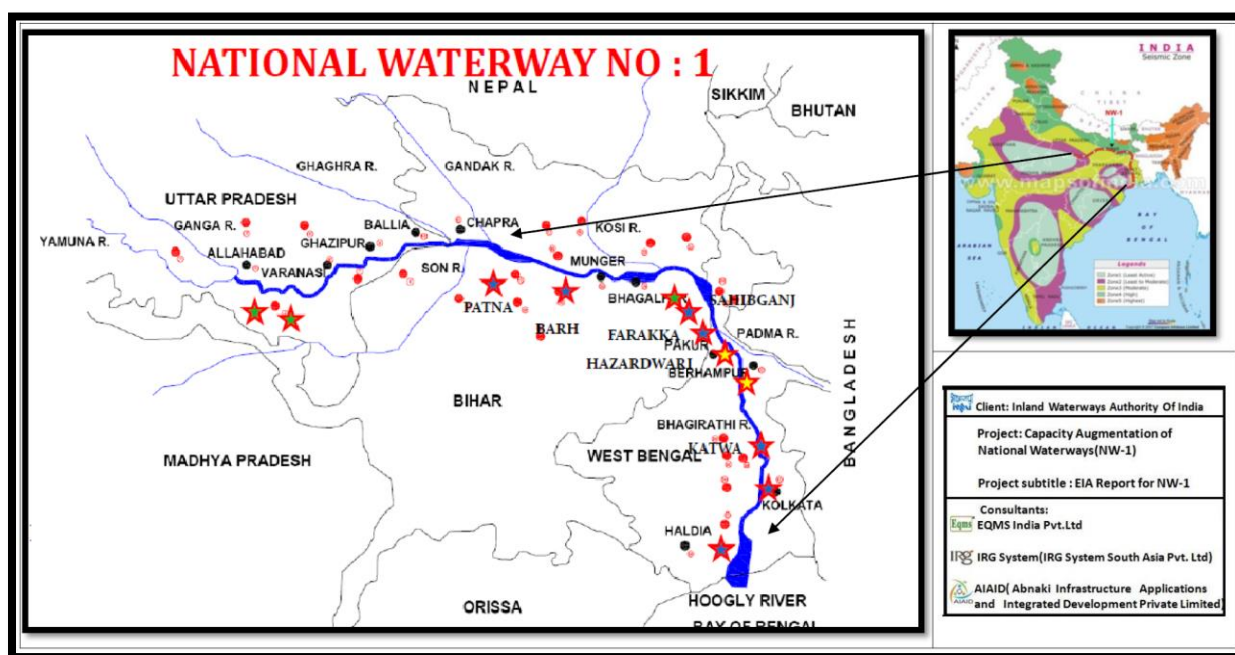


Figure 1.1 : Location Map

1.2. Description of Environment

The NW-1 stretch starts from Haldia to Allahabad (1620 KM long) on Ganga - Bhagirathi - Hooghly river system. The Hooghly river portion of the waterway from Haldia to Nabadwip is under tidal influence. From Nabadwip to Jangipur the NW-1 stretch is formed by Bhagirathi river. Bhagirathi river flow is regulated through barges at Farakka and Jangipur. From Farakka upstream the navigable route depends upon the main Ganga river flow. The Feeder Canal and the navigation lock at Farakka become the link between the Bhagirathi and main Ganga upstream of Farakka Barrage. NW-1 is passing through four states namely UP, Bihar, Jharkhand and West Bengal. The salient environmental features around NW-1 within, 500m, 2km and 10km stretches are summarised in **Table 1.1**.

Table 1.1 : Salient Environmental Features along NW-1 Alignment

| S. No. | Environmental Features | Within NW-1 (500 M) | Within 2 km area around NW-1 | Within 10 km area around NW-1 |
|--------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1 | Ecological Environment | | | |
| A | Presence of National Park/Biosphere Reserves, Tiger reserve etc. | None | None | None |
| | Presence of Wildlife Sanctuary | Yes 1. Kashi Turtle Sanctuary at Varanasi 2. Vikramshila Dolphin Sanctuary Kahalgaon to Sultanganj 3. Hilsa Sanctuary stretch in west Bengal | None | Yes Udhwa lake sanctuary in Jharkhand (about 9 km away from NW-1) |
| B | Reserved /Protected Forests | None | None | Yes (Bethuadahari RF, Bahadurpur RF & RF near Rajmahal Hills) |
| C | Wetland of state and national interest | None | None | Yes (Udhwa Bird sanctuary) |
| D | Migratory route for wild terrestrial animals | None | None | None |
| E | Presence of Schedule-I Terrestrial Fauna | None | Yes Migratory birds near Farakka Barrage and surrounding | Yes Migratory birds at important birds' areas |
| F | Presence of Schedule-I Aquatic Fauna | Yes Dolphin, and Turtle | None | None |
| G | Important Bird Area | Vikramshila sanctuary area | Yes 1. Danapur Cantonment area 2. Mokama tal 3. Kurseala river course and diyara floodplain. 4. Farakka Barrage and surround area | Yes Udhwa lake sanctuary |

| S. No. | Environmental Features | Within NW-1 (500 M) | Within 2 km area around NW-1 | Within 10 km area around NW-1 |
|--------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------|
| H | Seismicity | NW-1 falls in Zone-III (moderate risk) and zone IV (high damage risk zone) as per Seismic Zoning Map of India | | |
| B. | Social Environment | | | |
| I | Physical Setting | Rural, Industrial and Urban | | |
| | Densely populated area | Allahabad, Sirsa, Mirzapur, Chunar, Varanasi, Zamania, Ghazipur, Gahmar, Buxar, Ballia, Chappra, Patna, Barh, Bihat, Munger, Bhgalpur, Kahalgaon, Sahibganj, Farakka, Berhampore, Katwa, Kalna, Kolkatta and Haldia are densely populated areas. | | |
| J | Physical Sensitive Receptors | Yes Ghats, Temples, Schools, Colleges and Hospitals are present all along the NW-1. | | |
| K | Archaeological Monuments | Yes There are 9 archaeological sites located within 300 m area of the NW-1 and these are Kardmeshwar Mahadeva Mandir, Ramnagar fort, archaeological excavation site, Varanasi, Manmahal and observatory, St. John's Church, Temple of Gour Chandra and Krishnachandra at Chatra (Gaur Chandra Ghat), Hazardwari Palace, Sindhi Dalan and Jami Masjid. | | |

1.3. Environmental Management Plans

Major activities associated with the project are construction and operation of the civil interventions, barge movement and maintenance dredging. Barge movement and maintenance dredging will be carried out during the operation phase of the project only whereas development of civil interventions will have components distributed during design, construction and operation phases. Civil interventions include construction of jetty, terminals, river training works, bend corrections, barge maintenance facility, and RO-RO jetties. A detailed environmental management plan for each associated development for all the three phases of the project, i.e. design/pre-construction, construction and operation phase is prepared as applicable. EMP lists the activities involved, associated impact with each activity on environment, suggestive mitigation measures, allocated environment budget for impact mitigation, implementation plan covering monitoring, reporting and implementation and supervisory responsibility.

1.3.1. *Environmental Management Plan for Maintenance Dredging*

Maintenance dredging will be carried out during operation phase of the project to maintain LAD for navigation. Maintenance dredging will be carried out as per the availability of the depth naturally and depth required for movement of the cargo depending on the size of the cargo planned to ply in the stretch. The design consultant estimates estimation of the required amount of maintenance dredging in different stretch of the waterway. An analysis has been done during EIA study to establish the environmental, biological and social sensitivity of the waterway and a dredging and dredge disposal management plan is prepared which is presented in **Table 1.2**. Environment Management Plan for Dredging Activity is given in **Table 1.3**.

Table 1.2 :Dredging and Disposal Management Plan for NW-1

| Stretch/Dredging Quantity & Quality/Proposed Disposal Location | Biological, cultural, social and religious Sensitivity | Aquatic sensitivity | | Management Measures |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Sensitive zone | Breeding & Spawning Period and grounds* | |
| Stretch: Haldia to Farakka Dredged Qty: 3620000 cum between Tribeni to Farakka Dredged Quality: Not contaminated Disposal Location: In river/shoals/scours | Imp. Bird area- Farakka Barrage and adjoining area (Surrounding NW-1) Archaeological locations- St. John's Church (300 m, E), Temple of Gour Chandra and Krishna Chandra at Chatra-Gaur Chandra Ghat (0 m, W) & Hazardwari Palace (30 m, E) Fest & Festivals: Ganga Sagar Mela at Sagar (January) | Hilda Sanctuary (Within NW-1)- 4 locations | Peak spawning season for Hilsa is July-August Breeding & Spawning grounds for Hilsa: Stretch between Nischintpur (Kolkata) & Diamond Harbour, Hoogly ghat & Kalna and Lalbagh to Farakka1 | Dredging should be regulated during July-August Dredge disposal should not be carried out within Sanctuary area and other defined sensitive locations Dredge disposal should be carried out at minimum distance of 100 m from bank Dredging & disposal should not be carried out during time & location of festivals |
| Stretch: Farakka to Barh Dredged Qty: 3960000 cum Dredged Quality: Not contaminated Disposal Location: In river/shoals/scours | Imp. Bird Area- Udhwa Lake Bird Sanctuary (9 km, W), Vikramshila Gangetic Dolphin Sanctuary-VGDS (within NW-1), Mokama Taal (Barah) Wetlands (Along NW-1) & Kurseala River Course and Diyara Flood Plains (Along NW-1) Archaeological locations- Sindhi Dalan (300 m, W) & Jama Masjid (140 m, W) Religious locations: Community Temple at Sahibganj Terminal site (to be shifted) Fest & Festivals: Chatt (Oct-Nov) | Vikramshila Gangetic Dolphin Sanctuary (within NW-1) | Major Birth season for Dolphin is October to March2 Breeding Ground: Very shallow waters for giving birth | Dredging should be stopped if Dolphins are sighted Dredge disposal should not be carried out within Sanctuary area and other defined sensitive locations Dredge disposal should be carried out at minimum distance of 100 m from bank Dredging & disposal should not be carried out during time & location of festivals |
| Stretch: Barh to Patna Dredged Qty: 16,00,000 cum Dredged Quality: Not contaminated Disposal Location: In river/shoals/scours | Fest & Festivals: Chat (Oct-Nov) | None | Peak spawning season for Indian Major Carps is May-August Breeding & Spawning grounds: Shallow waters and areas inundated during monsoon season3 | Dredging should be stopped if any dolphin or big aquatic species is sighted Dredging should be avoided during May-August Dredge disposal should be carried out at minimum distance of 100 m from bank Dredging & disposal should not be carried out during time & location of festivals |
| Stretch: Patna to Buxar Dredged Qty: 27,70,000 cum Dredged Quality: Not contaminated | Imp. Bird Area- Danapur cantonment area (2 km, S) Fest & Festivals: Chatt (Oct-Nov) | None | Peak spawning season for Indian Major Carps is May-August Breeding & Spawning | Dredging should be stopped if any dolphin or big aquatic species is sighted Dredging should be avoided during May-August |

¹Perspectives of reproductive biology and spawning behavior of Indian shad (*Tenuulosa ilisha*)-A global review, Utpal Bhaumik, Former Divisional Head, Riverine Ecology and Fisheries, Central Inland Fisheries Research Institute, Barrackpore, India

²Ganges River Dolphins, WWF

(http://wwf.panda.org/what_we_do/endangered_species/cetaceans/about/river_dolphins/ganges_river_dolphin/)

³ Genetic Resources of Indian Major Carps, Their Distribution and Characterization, FAO
(<http://www.fao.org/docrep/006/x3850e/X3850E02.htm>)

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| Stretch/Dredging Quantity & Quality/Proposed Disposal Location | Biological, cultural, social and religious Sensitivity | Aquatic sensitivity | | Management Measures |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Sensitive zone | Breeding & Spawning Period and grounds* | |
| Disposal Location: In river/shoals/scours | | | grounds: Shallow waters and areas inundated during monsoon season | Dredge disposal should be carried out at minimum distance of 100 m from bank Dredging & disposal should not be carried out during time & location of festivals |
| Stretch: Buxar to Varanasi Dredged Qty: 29,00,000 cum Dredged Quality: Not contaminated Disposal Location: In river/shoals/scours | Archaeological locations- Kardmeshwar Mahadeva Mandir (240 m, W), Ramnagar, fort (40 m, E), archaeological excavation site, Varanasi (130 m, E) & Manmahal and observatory (40 m, W) Cultural locations: Ghats Fest & Festivals: Ganga Mahotsav at Varanasi (Oct-Nov) & Dhrupad Mela at Tulsi Ghat of Varanasi (Feb to March) | None | Peak spawning season for Indian Major Carps is May-August Breeding & Spawning grounds: Shallow waters and areas inundated during monsoon season | Dredging should be stopped if any dolphin or big aquatic species is sighted Dredging should be avoided during May-August Dredge disposal should be carried out at minimum distance of 100 m from bank Dredging & disposal should not be carried out during time & location of festivals |
| Stretch: Varanasi to Allahabad Dredged Qty: Nil Dredged Quality: NA Disposal Location: NA | Fest & Festivals: Ganga Mahotsav at Varanasi (Oct-Nov), Dhrupad Mela at Tulsi Ghat of Varanasi (Feb to March) & kumbh at Allahabad (Jan-Feb) | Kashi Turtle Sanctuary (within NW-1) | Spawning season for River Turtles: March-April Breeding & Spawning grounds: Wetlands/River banks | Dredging should be regulated during July-August Dredge disposal should not be carried out within Sanctuary area and other defined sensitive locations Dredge disposal should be carried out at minimum distance of 100 m from bank Dredging & disposal should not be carried out during time & location of festivals |

*Map Showing locations of breeding 7 spawning grounds is given in **Figure 1.2-1.6**

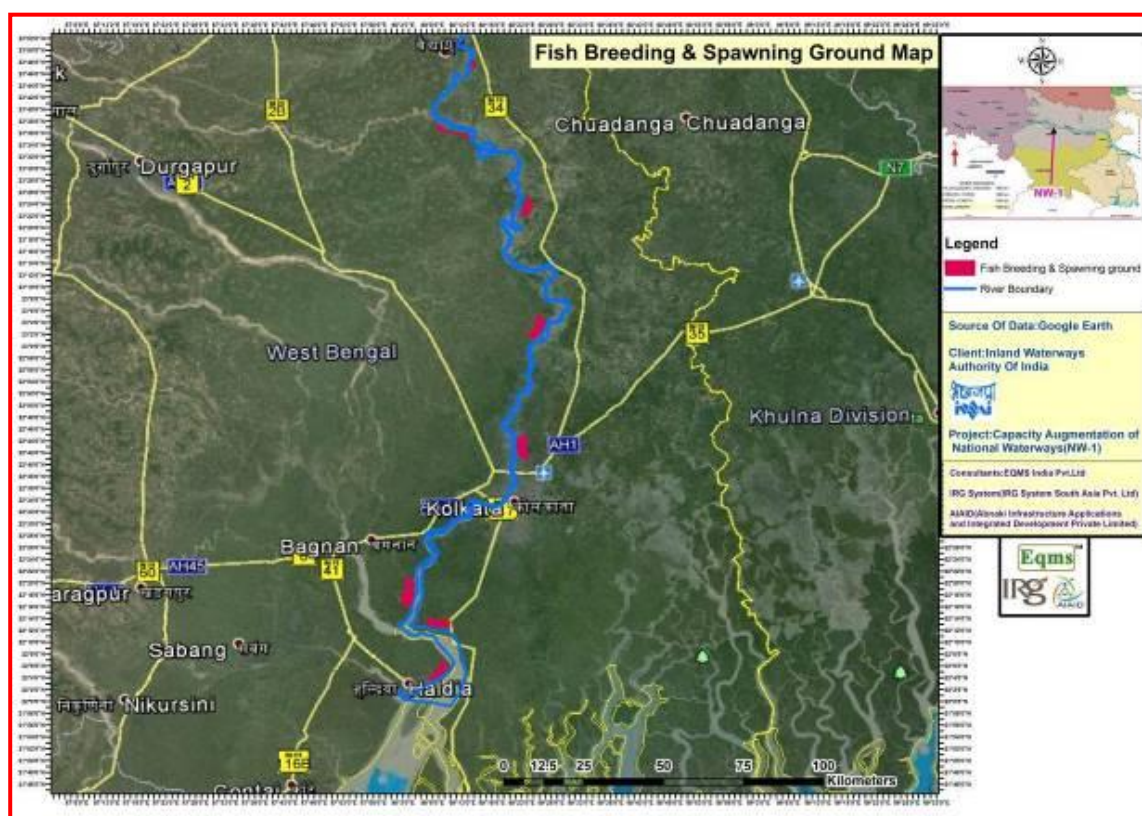


Figure 1.2 : Fish Breeding and Spawning Grounds along NW-1 (Haldia to Baidyapur Stretch)



Figure 1.3 : Fish Breeding and Spawning Grounds along NW-1 (Baidyapur to Sahibganj Stretch)

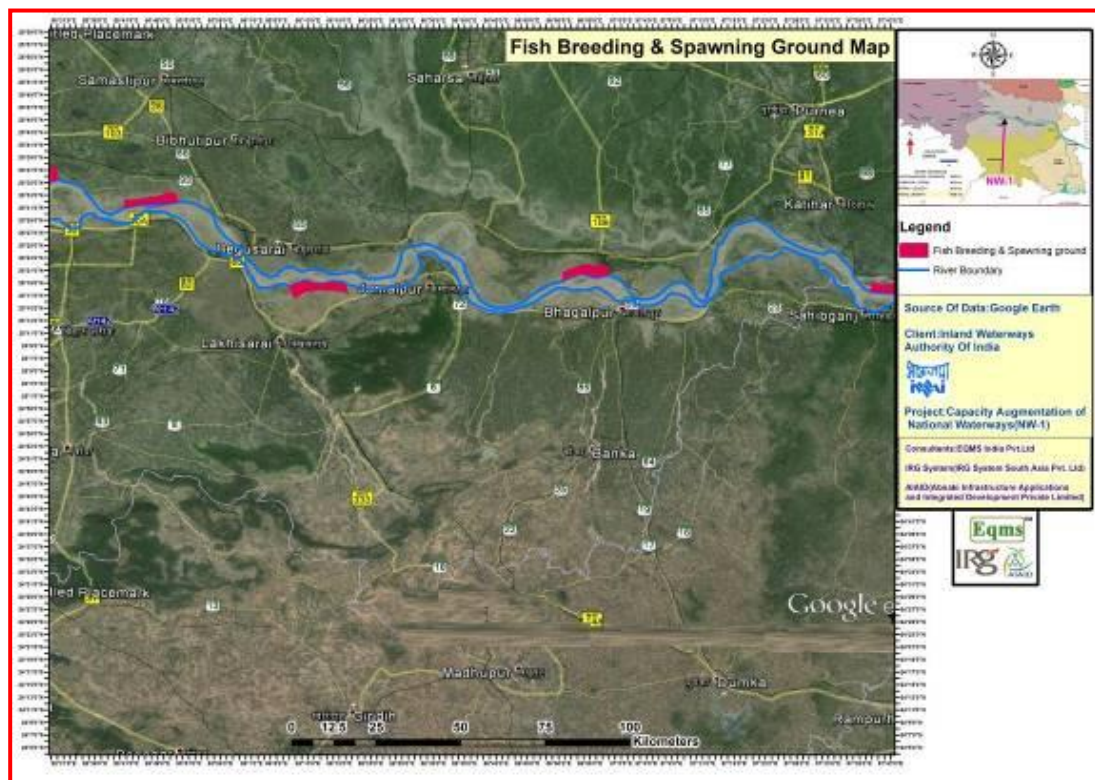


Figure 1.4 : Fish Breeding and Spawning Grounds along NW-1 (Sahibganj to Patna Stretch)

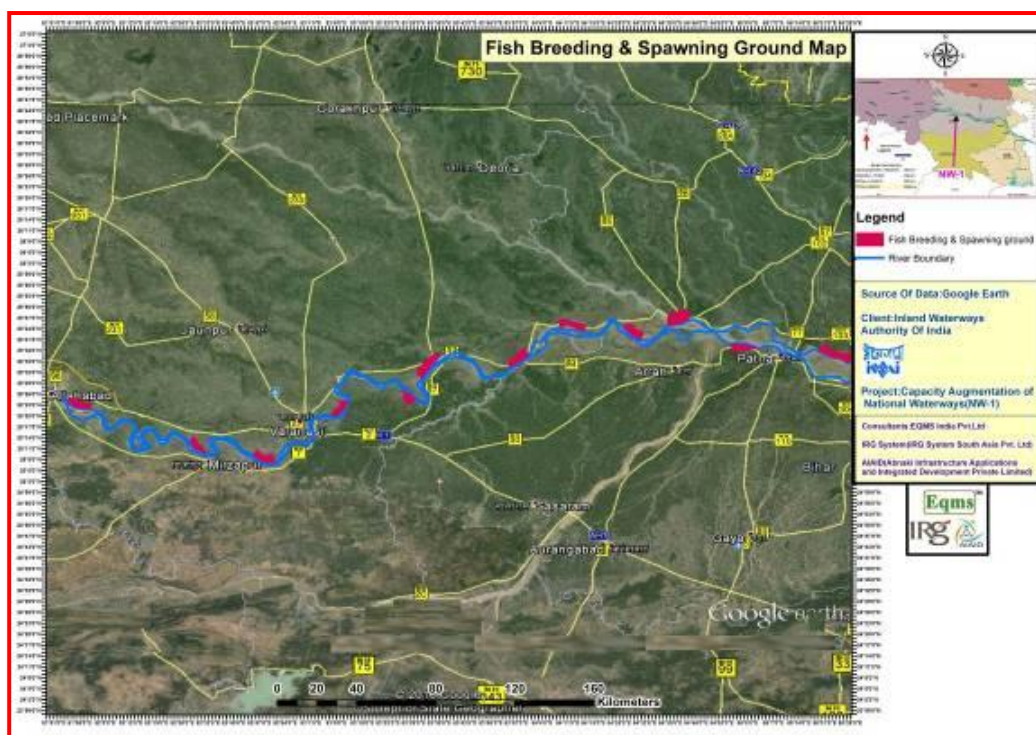


Figure 1.5 : Fish Breeding and Spawning Grounds along NW-1 (Patna to Allahabad Stretch)

: Environmental Management Plan for Maintenance Dredging

| Environmental Management Plan for Maintenance Dredging | | | | | | | |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|------------|------------------------------|------------------------------|-------------|
| Environmental Issue /Component | Remedial Measure | Reference to laws and Contract Documents | Approximate Location | Time Frame | Indicative / Mitigation Cost | Institutional Responsibility | |
| | | | | | | Implementation | Supervision |
| 1. Physical Environment | | | | | | | |
| Impact on Soil quality & River Bed sediments | <ul style="list-style-type: none">Standards should be developed by concerned authorities for onshore and off-shore dredged material disposal and development of the process to ensure its complianceDredged material shall be checked for toxicity and contamination prior its disposal for prevention of contamination of water and its impacts on aquatic life. International standards for judging onshore & off-shore disposal of dredged material are given in Annexure 1.1.If any stage on land disposal of dredge material is planned, then dewatering of the dredged sediments should be carried out prior to on land disposal.If dredge material is found contaminated at any particular location, then it should be disposed on land after decontamination. On land disposal of dredged material should be carried out only at approved TSDF site such as | | | | | | |

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| Environmental Issue /Component | Remedial Measure | Reference to laws and Contract Documents | Approximate Location | Time Frame | Indicative / Mitigation Cost | Institutional Responsibility | |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|---------------------------|------------------------------------------|------------------------------|---------------------------|
| | | | | | | Implementation | Supervision |
| | <p>approved TSDF site of Haldia Dock Complex at Sagar. The contaminated dredge material shall be collected in the leak proof container for decontamination and disposal to the landfill site.</p> <ul style="list-style-type: none"> The disposal facilities should be designed with adequate liners to contain the leachate and also should have provision of leachate collection and testing to periodically check the functionality of the disposal site. Dredge material should not be disposed in river banks, Disposal should be inline with the dredging sensitivity analysis defined at Table 1.2 above . If dredged material is disposed on land, then the care should be taken that the tail water is collected and made free from sediments prior to its discharge back to surface water body. | | | | | | |
| Water Quality | <ul style="list-style-type: none"> Attempt shall be made to minimizing and optimizing the dredging requirements by effective assessment and study of the Thalweg profiles of the river. This can be achieved some of the following measures: <ul style="list-style-type: none"> Increase use of bandalling which helps in diverting the flow of river towards the channel and reduces the quantity of dredging Low draft vessels should be deployed which will reduce the requirement of dredging Dredged material shall be checked for toxicity and contamination prior its disposal onshore for prevention of contamination of water and its impacts on aquatic life. Standards for judging onshore & off-shore disposal of dredged material are given in Annexure 1.1. Dredging should not be carried out during very low flow seasons so as to minimize the dispersion of fine sediments Usage of silt or air bubble screens/curtains should be | Water Act, 1974 | Within River | During Dredging Operation | Part of Project Cost (IWAI & Contractor) | Contractor | IWAI/PMU/PMC ⁴ |

⁴ It is proposed to set up Project Unit (PMU) in IWAI to manager social and environmental aspect of NW1 augmentation. PMC (Project Management Consultants) anticipated to be appointed for project management and quality check.

EMP Fairway maintenance of Farakka-Tribeni stretch.-r1

| Environmental Issue /Component | Remedial Measure | Reference to laws and Contract Documents | Approximate Location | Time Frame | Indicative / Mitigation Cost | Institutional Responsibility | |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|------------|------------------------------|------------------------------|-------------|
| | | | | | | Implementation | Supervision |
| | <p>explored to minimize the sediment release during dredging operations. Silt/air bubble screens can hang from surface floats or stands attached to the bottom and held upright by sub-surface floats (PIANC). The use of silt curtains is reported to considerably reduce the loss of suspended sediments from the dredge area, by up to 75% where current velocities are very low. However, they are generally ineffective in areas with high current velocities which exceed 0.5 m/s (UK Marine SACs Projects).</p> <ul style="list-style-type: none"> • To minimize the sediment dispersal during disposal of dredge sediments, it should be placed as close to the bed possible preferable at a level of 1m above the bed to minimise the dispersal of sediments. • Provision shall be made of emergency response equipment like floating blooms to deal with any emergency of oil spills or leakages. Regular servicing and maintenance of dredgers should be taken up so as to prevent any leakage of the dredged material. Leakage detection of the sediment transportation pipe shall be carried out regularly to prevent any sediment loss and water pollution at leakage location. Corrective actions should be taken immediately after detection of such leaks. • Cutter head of CSD should be selected according to material to be dredged so as to maximize the dredged material transport from dredging point to suction mouth and prevention of sediment loss and re-suspension. • Ratio of cutter revolutions and pump velocity should be adjusted to ensure that cutter advancement rate is not greater than the ability of the suction pump to remove the material that is cut. This will prevent the suspension of the dredged material. • Dredge cuts and lifts should be designed so as to prevent undercutting of material and hence a collapse of material locally at the cutter head, | | | | | | |

EMP Fairway maintenance of Farakka-Tribeni stretch.-r1

| Environmental Issue /Component | Remedial Measure | Reference to laws and Contract Documents | Approximate Location | Time Frame | Indicative / Mitigation Cost | Institutional Responsibility | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------|-----------------|------------------------------------------|------------------------------|--------------|
| | | | | | | Implementation | Supervision |
| | <p>leading to an increase in the sediment being disturbed by dredging.</p> <ul style="list-style-type: none"> • If dredge material is found contaminated at any particular location that it should be disposed off-shore. Off-shore disposal of dredged material should be carried out only at approved TSDF site such as approved TSDF site of Haldia Dock Complex at Sagar. • Dredge material if disposed on river banks or on land caution should be exercised as per the Dredging and Disposal Management Plan for NW-1 given at Table 1.2 above. • <i>If dredged material is disposed at land, then the care should be taken that the tail water is collected and made free from sediments prior its discharge back to surface water body. Regular monitoring of the excess water should be done in case dredged material is disposed on land. This will help in assessing the efficiency of sediment trap system provided at site and controlling contamination of water by minimizing the sediments.</i> • Sensitivity along NW-1 for dredge disposal is discussed in Table 1.2 above. Dredge material if disposed on river banks or on land caution should be exercised as per the Dredging and Disposal Management Plan is prepared for entire for NW-1 considering the sensitivities discussed in Table 1.2 | | | | | | |
| 2. Biological Environment | | | | | | | |
| Aquatic Ecology-Removal of benthic communities, increasing underwater noise levels, increasing sediments/turbidity, release of locked pollutants in sediment, | <ul style="list-style-type: none"> • Dredging plan including timeframe should be prepared for each stretch prior initiating dredging activity. No dredging should be undertaken within VGDS, Turtle sanctuary. No dredging shall be carried out in winter season (November to February) along Mokama Taal to minimize impact on aquatic species and avifauna. • Dredging operations should not be carried out during the breeding and spawning season of the valued aquatic species which is from June to August (Monsoon season). Bends and meandering locations are the | Wildlife Protection Act, 1972 & 1993 and Bio-diversity Act, 2002 | Within River | During Dredging | Part of Project Cost (IWAI & Contractor) | Contractor | IWAI/PMU/PMC |

EMP Fairway maintenance of Farakka-Tribeni stretch.-r1

| Environmental Issue /Component | Remedial Measure | Reference to laws and Contract Documents | Approximate Location | Time Frame | Indicative / Mitigation Cost | Institutional Responsibility | |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------|---------------------------|------------------------------------------|------------------------------|--------------|
| | | | | | | Implementation | Supervision |
| disposal of dredged material, increasing depth | <p>most potential breeding grounds and are indicated at Figure No. 1.2-1.6</p> <ul style="list-style-type: none"> Dredging if required to be taken at critical stretches (Turtle and Dolphin Sanctuaries) as mentioned above then dredgers should be provided with turtle and Dolphin deflectors. This would prevent the sucking of the animals (fish or turtle) swimming nearby. But such dredgers are inefficient and costly. Measures like provision of bubble curtains or creation of agitation in water should be carried out prior carrying out dredging operations so as to provide avoidance time and let the species move away from dredging point. and to prevent any injury/mortality. Dredging operations should be halted in case of sighting of aquatic mammal in adjacent locations. Contractors should submit SOPs and action time chart with risk management plan prior to any dredging work. Dredging subcontractor should follow the defined safety procedures to avoid accidents and spills, and IWAI should ensure that other vessel users are provided with adequate information and instruction to avoid conflict with the dredgers. | | | | | | |
| Avifauna (Migratory & water birds) | <ul style="list-style-type: none"> Dredging operations should be restricted to day time only, i.e. 6:00 Am-10:00 Pm only to minimize noise impacts on the avifauna near Important Bird Areas listed at Table 1.2 and located close to river. Dredgers should be equipped with the noise reduction/masking equipment to reduce the noise generation inside and outside water. Noise from dredgers can be reduced at source (dredger) by isolation of exhaust system, by keeping engine room doors shut and by shielding. | Wildlife Protection Act, 1972 & 1993 and Bio-diversity Act, 2002 | Within River & bird areas along NW-1 | During Dredging | Part of Project Cost (IWAI & Contractor) | Contractor | IWAI/PMU/PMC |
| 3. Socio-Economic Environment | | | | | | | |
| Location of Socio-economic importance and socio-economic | <ul style="list-style-type: none"> Dredging operations should be restricted to day time only, i.e. 6:00 Am-10:00 Pm only to minimize noise impacts on the residents of nearby settlements. Dredgers should be equipped with the noise | -- | Area near the dredging operations and | During dredging operation | Part of project cost (IWAI/Contractor) | Contractor | IWAI/PMU/PMC |

EMP Fairway maintenance of Farakka-Tribeni stretch.-r1

| Environmental Issue /Component | Remedial Measure | Reference to laws and Contract Documents | Approximate Location | Time Frame | Indicative / Mitigation Cost | Institutional Responsibility | |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|------------|------------------------------|------------------------------|-------------|
| | | | | | | Implementation | Supervision |
| environment | <p>reduction/masking equipment to reduce the noise generation</p> <ul style="list-style-type: none"> Dredgers should be placed in consultation with the fishermen so as to minimize the impact on their equipment/gears and their fishing activities Dredging should not be carried out in the areas close to Ghats in Varanasi and buffer of 2 km should be maintained for dredging during time of religious gatherings during Chat and Kumbh festivals. In case contaminated dredged material is disposed on land, then it should be disposed at approved TSDF sites to prevent any harm to community residing in nearby areas. One of such approved TSDF site is located Sagar (Haldia Dock Complex site) Material to be disposed on land may create nuisance odour due to exposure of anaerobic sediments with air. Thus if land disposal is involved then disposal site should not be in upwind direction of any settlement area or sensitive locations like hospitals, schools etc. Log book should be maintained for recording the accidents at site/mortality of the any marine mammal should be maintained. Analysis shall be carried out to assess the reason for the accident/mortality and measures should be taken to prevent repetition of the event. Contractors having experience of dredging and well trained staff should only be allowed to carry out dredging. This will help in prevention of spillage of dredged material or any accidents during the dredging operations Dredging plan should be prepared by contractor and submitted to IWAI for approval prior to carrying out dredging operations. Dredging plan should be reviewed considering its location w.r.t environmental sensitive locations/archaeological locations/cultural festival/pollution influx in the area/dredged material quality & texture/available depth etc. as given in this EIA report and through local sources and past experience. Contractors should submit method statement & risk assessment plan prior to carrying out any dredging work. Dredger should follow the defined safety procedures to avoid accidents and spills, and IWAI should ensure that other vessel users are provided with adequate information and instruction to avoid conflict with the dredgers. | | dredging locations | | | | |

EMP Fairway maintenance of Farakka-Tribeni stretch.-r1

| Environmental Issue /Component | Remedial Measure | Reference to laws and Contract Documents | Approximate Location | Time Frame | Indicative / Mitigation Cost | Institutional Responsibility | |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|------------|------------------------------|------------------------------|-------------|
| | | | | | | Implementation | Supervision |
| | <ul style="list-style-type: none"> • Post-dredging monitoring of the sediment nature, rate of sedimentation shall be made part of contractor's job as best dredging practise. This will provide information which can be taken into consideration before the next maintenance dredge is carried out. • Re-use of dredged material should be explored if dredged material is not contaminated. Economically and environmentally feasible options can be adopted to minimize the dredge spoil burdens. Some of such measures include • Dredged sediment can be used for beach nourishment/development of artificial beach/deposition on shoal & thus enrichment of habitat <ul style="list-style-type: none"> ○ Dredged material can be explored for its usage for coast/bank protection purpose/flood protection ○ Use of dredged material can be explored for land filling, as construction material for road foundations, dikes, mounds, noise/wind barriers. | | | | | | |

Appendix 3.1**Annexure 1.1: Standards for onshore & off-shore disposal of dredged material**

Criteria for Disposal of Harmful Bottom Sediments: No specific standards are defined in India for disposal of dredged material. If dredged material is toxic / harmful then these sediments should either be disposed off in landfill or in Sea. Criteria followed in Japan are given in the **Table 1**.

Table 1: Criteria for Harmful Bottom Sediments, Japan (unit: mg/l)

| Contaminated Material | Dumping in Landfills (mg/l) | Dumping at sea (mg/l) |
|----------------------------|-----------------------------|-----------------------|
| Alkyl mercuric compounds | Not detectable | Not detectable |
| Mercury and its compounds | 0.005 | 0.005 |
| Cadmium and its compounds | 0.1 | 0.1 |
| Lead and its compounds | 1 | 1 |
| Organophosphorus compounds | 1 | 1 |
| Chromium (VI) compounds | 0.5 | 0.5 |
| Arsenic and its compounds | 0.5 | 0.5 |
| Cyanogen compounds | 1 | 1 |
| PCB | 0.003 | 0.003 |
| Copper and its compounds | - | 3 |
| Zinc and its compounds | - | 5 |
| Fluoride | - | 15 |

Note: Criteria are based on the examination of dissolution of contaminated materials

Source: Assessment of the Environmental Impact of Port Development, United Nations, New York, 1992

Criteria for Off-shore dumping of Dredged material: No criteria are defined for off-shore disposal of dredged material in India, thus reference to the UN standards can be made and is given in **Table 2**.

Table 2: Criteria for Off-Shore Dumping of Dredged Material (unit: ppm or ppb)

| Substance | Canada | USA |
|--------------------------------|-----------------------------|----------------------------------------------------------------------------------|
| PCB (ppb) | 100 | 380 |
| Hg (ppm) | 0.5 | 0.15 |
| Cd (ppm) | 0.60 | 0.7 |
| Zn (ppm) | 169 | 105 |
| Cu (ppm) | 45 | 68 |
| As (ppm) | (5 – 25) | 12.5 |
| Pb (ppm) | 45 | 33 |
| Organochlorine pesticide (ppb) | 10 for any compound | 5.0 Sum of DDT, DDE and DDD |
| Polyaromatic hydrocarbon (ppb) | (1,000) Sum of 16 compounds | 680 Sum of six low mol. Wt. compounds 2,690 Sum of 10 high mol. Wt. compounds |

Source: Assessment of the Environmental Impact of Port Development, United Nations, New York, 1992

Appendix – I

Following Environmental Safety Measures to be implemented by Contractor :

| Sl. No. | Environmental Safety measures to be implemented | Responsibility |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| i. | 'Consent to Establish' and 'Consent to Operate' shall be obtained from State Pollution Control Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974. | Contractor |
| ii | The Project authority shall ensure that no rivers or tributaries are blocked due to any activities at the project site and free flow of water is maintained. | Contractor should ensure the same |
| iii | Shoreline shall not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. | Contractor should ensure the same. |
| iv | Dredging shall not be carried out during the fish/turtle breeding seasons. | Contractor |
| v | All vessels used in the river will be fitted with noise control and animal exclusion devices so that aquatic life is not unduly disturbed. | Contractor should ensure. |
| vi | Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts aquatic life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage. | Contractor |
| vii | Construction waste including debris shall be disposed safely in the designated areas and in no case shall be disposed in the aquatic environment. | Contractor |
| viii | Vessels shall not discharge oil or oily water such as oily bilge water containing more than 15ppm of oil. | Contractor shall ensure and maintain record |
| ix | The project authority shall ensure that water traffic does not impact the aquatic wildlife sanctuaries that fall along the stretch of the river. | Contractor should ensure compliance of provisions for movement of vessel in the Wildlife Sanctuary as per statutory clearances |
| x | All Vessels will also have to comply with 'Zero discharge' standards to prevent solid or liquid waste from flowing into the river and affecting its biodiversity. | Contractor |
| xi | The Dredging shall be carried by integrated and systematic planning by selective grid method by allowing migratory movement of Benthic fauna. | Contractor |
| xii | All required noise and vibration control measures are to be adopted in Dredgers. Cutter suction Dredgers should be avoided as much as possible which produces more noise and vibration. No Drilling and Blasting is to be carried out. | Contractor |
| xiii | Pre geo-tectonic studies has to be completed and the strata to be dredged is predetermined with complete data pertaining to hardness, compressive and tensile strengths. | Contractor |
| xiv | Dredger type and other strata loosening methods shall be preconceived. | Contractor |
| xv | Staggered dredging shall be carried based on turbidity monitoring to minimize the impact of turbidity. | Contractor should comply and maintain record |
| xvi | Threshold level of turbidity, which has a minimal effect on fauna, has to be predetermined and Dredging planned accordingly. | Contractor |
| xvii | Further silt screens needs to be used for minimizing the spread of Turbidity. | Contractor |
| xviii | Disposal places of Dredged sediments needs to be predetermined, along the shore by assessment of suitability, which will not affect the shoreline (erosion) and also causing impacts during monsoon and flooding. | Contractor |

EMP Fairway maintenance of Farakka-Tribeni stretch.-r1

Appendix – I

Following Environmental Safety Measures to be implemented by Contractor :

| Sl. No. | Environmental Safety measures to be implemented | Responsibility |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xix | As much as possible, it shall not be disposed off in the river itself, and the site should be such that the dispersion is quicker by undertaking modelling studied. | Contractor |
| xx | Ballast water control and management measures shall be implemented. | Contractor |
| xxi | Waste and waste water reception facilities in Jetty shall be implemented. | Contractor should dispose the waste and wastewater at designated disposal place authorized by SPCB |
| xxii | The Risk and Disaster Management Plan has been prepared in consonance with the manual of terminals and harbours issued by the Ministry of Environmental and Forests dated 5 th May 2010. | Contractor should follow the risk and disaster management plan for the purpose of dredging in river accordance with the Statutory/regulatory guidelines. |
| xxiii | Standard Operating Procedures (SOP) and Emergency Response Plan (ERP) for onsite and offsite emergencies shall be prepared and implemented based on Hazard Identification and Risk Assessment to handle, process, store and transport of hazardous substances. | Contractor should prepare and follow the Standard Operating Procedures (SOP) and Emergency Response Plan (ERP) for onsite and offsite emergencies for dredging in river accordance with Statutory/regulatory guidelines and IWAI consent |
| xxiv | Oil spill contingency plan shall be prepared and part of DMP to tackle emergencies. The equipment and recovery of oil from a spill shall be assessed. Guidelines given in MARPOL and shipping Acts for oil spill management shall be followed. | Contractor should implement the Oil Spill Contingency Plan for dredging in river accordance with Statutory/regulatory guidelines. |
| xxv | No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources. | Contractor should ensure the same. |
| xxvi | All the erosion control measures shall be taken at water front facilities. | Contractor should ensure the same. |
| xxvii | Necessary Air Pollution Control measures shall be taken during loading, unloading, handling, transport of the material at the Berthing and water front facilities. | Contractor |
| xxviii | The Vessels shall comply the emission norms prescribed from time to time. | Contractor |
| xxiv | All safety measures are to be implemented in coordination with the respective state government departments such as State Forest Department, Public Works Department, State Pollution Control Board etc. | Contractor |
