



EXPRESSION OF INTEREST (EOI)

NAME OF THE WORK:

“EMPANELMENT OF SURVEY AGENCIES FOR UNDERTAKING VARIOUS SURVEY UNDER IRRIGATION & WATERWAYS DEPARTMENT, GOVERNMENT OF WEST BENGAL FOR COLLECTION, ANALYSIS AND STORING OF VARIOUS DATA (RELATED TO HYDROGRAPHIC SURVEYS) FOR RIVERS, KHALS CANALS, CREEKS, CHANNELS, DAM, RESERVIORS, WATERBODIES, ETC. FOR 3 (THREE) YEARS.”

Released on: 01-07-2025 (Date of Publication)

**Office of the Director
River Research Institute
Irrigation & Waterways Directorate,
Government of West Bengal
Mohanpur, West Bengal, Nadia, Pin 741246**

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NOTICE FOR EOI

**Office of the Director
River Research Institute
Irrigation & Waterways Directorate,
Government of West Bengal
Mohanpur, West Bengal, Nadia, Pin 741246**

EOI NO. WBIW/DIR/RRI/EOI-04/2025-26

Memo no. 899

Date: 26.06.2025

Encrypted electronic EOI is hereby invited by the Director, River Research Institute, Irrigation & Waterways Directorate on behalf of the Governor of the state of West Bengal through single stage e-procurement system (Part I: Technical bid) for the work given below.

Name of the work: “EMPANELMENT OF SURVEY AGENCIES FOR UNDERTAKING VARIOUS SURVEY UNDER IRRIGATION & WATERWAYS DEPARTMENT, GOVERNMENT OF WEST BENGAL FOR COLLECTION, ANALYSIS AND STORING OF VARIOUS DATA (RELATED TO HYDROGRAPHIC SURVEYS) FOR RIVERS, KHALS CANALS, CREEKS, CHANNELS, DAM, RESERVIORS, WATERBODIES, ETC. FOR 3 (THREE) YEARS.”

The document containing the scheme and the eligibility criteria of the applicants may be obtained from the web site www.wbiwd.gov.in under the option ‘EOI’ & <https://wbtenders.gov.in>.

The last date of receipt of EOI in the prescribed format online, provided in the document for the scheme is 08.07.2025 till 17:00 hrs.

SD/-

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Director

**River Research Institute, WB
Irrigation & Waterways Directorate
Government of West Bengal**

Empanelment of Service Providers will be done for a period of three (3) years based on their Technical Proposals, given in the Table below.

Types of data to be collected, analyzed and stored for different sites I&WD, Govt. of West Bengal is as detailed in the table below.

A. TYPE OF DATA COLLECTION:

Sl. No	CATEGORY OF EMPANELMENT (BASED ON TYPE OF DATA COLLECTION, ANALYSIS AND STORING)	BRIEF SCOPE OF WORK
1.	Hydrographic data collection	1. Measurement of river discharge 2. Measurement of stream flow velocity 3. Measurement of tide & river guage. 4. Collection of river bed materials & water sample 5. Submission of Drawing and Report.

B. CRITICAL DATES

Sl. No.	Activity	Date & Time	Remarks
1.	Publishing Date	01.07.05.2025 at 17:00 Hrs.	To be made available with the e NIT/EOI in the website
2.	Document Download start date	01.07.05.2025 at 17:00 Hrs.	
3.	EOI submission start date	01.07.05.2025 at 17:00 Hrs.	
4.	Document Download end date	08.07.2025 at 17:00 Hrs.	
5.	EOI submission end date	08.07.2025 at 17:00 Hrs.	
6.	Technical Documents opening date with preliminary result (TBO Sheet)	14.07.2025 at 14:00 Hrs.	To be notified to all Firms through email & SMS through auto generation in the system.
7.	Uploading of the list of Technically qualified final list of Firms (TBE Sheet)	To be decided by Director with at least 4 (Four) clear working days after Technical Documents uploading date in order to enable registering of grievance and decision of Appellate authority, (if any).	

C. GENERAL GUIDANCE FOR EMPANELMENT OF SERVICE PROVIDER AND AWARD OF WORK THROUGH LIMITED TENDER INQUIRY (LTI):

Any organization/ agencies willing to take part in the process of EOI will have to be enrolled & registered with the Government e-Procurement System, through logging on to <https://wbenders.gov.in> (the web portal of West Bengal EOIs maintained by NIC). The organization / agencies are required to click on the link for EOI site as given on the web portal.

1. Digital Signature certificate (DSC):

Each organization / agency is required to obtain a Class-II /Class III company Digital Signature Certificate (DSC) for submission of EOIs from the approved service provider of the National Informatics Centre (NIC) on payment of requisite amount.

The organization / agencies can search & download Notice Inviting Tender (N.I.T.) & EOI Document(s) electronically from computer once they log on to the website. This is the only mode of collection of EOI Documents.

2. Selection Process:

A list of eligible Firms will be finalized through Technical Evaluation process. The Firms will be empaneled into a suitable category as per their credentials. Work will be awarded to the Firms, which are already empaneled by LIMITED TENDER INQUIRY (LTI) process as mentioned in cl. 11.6 of TOR. The eligibility for applying for different categories of work is given in cl no. 10.4 of TOR. All other detail may be obtained from 'Terms of Reference' of this document.

2.1. Selection Committee: A committee constituted by the Director, RRI, I&WD, GoWB will evaluate the documents submitted by the Firms and will prepare a list of successful Firms.

2.2. Submission of documents for EOI:

Documents for the EOI are to be submitted through online, in the website as stated, in single folder, named Technical Proposal (**DOCUMENTS A**) before the prescribed date & time, using the Digital Signature Certificate (DSC). The documents are to be uploaded virus scanned and copies are duly Digitally Signed. The documents will get encrypted (transformed into non readable formats).

The Firms are advised to submit the documents well in advance of the deadline as the Department will not be liable or responsible for non-submission of the documents or submission of incomplete documents on account of any technical glitches or any problems in connectivity services used by the Firms.

2.2.1. Technical Proposal:

The Technical proposal should contain the following documents in PDF format named as "DOCUMENTS-A **Technical Documents**": (All Forms to be properly filled, scanned in readable format, digitally signed and uploaded as mentioned). Details regarding technical proposal may be obtained in clause 10.4 of this document.

2.2.2. Financial Proposal: *Whenever is required.*

- a) Empaneled bidders may submit their financial documents in online mode for any work to be notified later.
- b) It is to be noted that, the rate quoted in the BOQ, for any work, will be treated as final.

2.2.3. EMD for successful participation in tendering process:

Earnest money Deposit for the tender for each work is 2% of the Amount put to Tender only. An empaneled Firm may submit application for more than one work. However, ***the applicant shall have to submit separate application and separate EMD for each individual work.*** However a specific company/ Organization can't submit multiple documents (common interest) for a single work. Submission of multiple documents may result in disqualification of tender and also liable to be blacklisted by the Department. Details regarding process of submission of EMD may be obtained from 'Terms of Reference' of this document.

1. EMD has to be payable in ONLINE mode as per Finance Department G.O. No 3975 F (Y) dated 28th July 2017.
2. The EMD of the selected bidder will be returned through the online payment portal as per guidelines issued by Finance Department G.O. No 3975 F (Y) dated 28th July 2017.
3. The EMD of the selected bidder may be forfeited if the organization fails to sign the contract in accordance with the terms and conditions and/or fails to furnish Performance Security as per the terms and conditions.
4. In addition to e- submission hard copies of Technical documents needs to be submitted by hand in sealed cover. The application is to be submitted in the prescribed format containing general and technical information along with copy of documents to be submitted. This application is to be sealed and super scribed:

“EMPANELMENT OF SURVEY AGENCIES FOR UNDERTAKING VARIOUS SURVEY UNDER IRRIGATION & WATERWAYS DEPARTMENT, GOVERNMENT OF WEST BENGAL FOR COLLECTION, ANALYSIS AND STORING OF VARIOUS DATA (RELATED TO HYDROGRAPHIC SURVEYS) FOR RIVERS, KHALS CANALS, CREEKS, CHANNELS, DAM, RESERVIORS, WATERBODIES, ETC. FOR 3 (THREE) YEARS.”

From: [Insert Name of the participating organisation]

(General and Technical Information)

The Address for Submission of Technical Documents in Offline Mode:

**Office of the Director
River Research Institute
Irrigation & Waterways Directorate,
Government of West Bengal
Mohanpur, West Bengal, Nadia, Pin 741246**

Complete sets of EOI documents will be available for free download by interested Firms from <https://wbtenders.gov.in> & from the website of Irrigation & Waterways Department – www.wbiwd.gov.in under the tender option.

TERMS OF REFERENCE

Name of the work: “EMPANELMENT OF SURVEY AGENCIES FOR UNDERTAKING VARIOUS SURVEY UNDER IRRIGATION & WATERWAYS DEPARTMENT, GOVERNMENT OF WEST BENGAL FOR COLLECTION, ANALYSIS AND STORING OF VARIOUS DATA (RELATED TO HYDROGRAPHIC SURVEYS) FOR RIVERS, KHALS CANALS, CREEKS, CHANNELS, DAM, RESERVIORS, WATERBODIES, ETC. FOR 3 (THREE) YEARS.”

Please read this scheme document carefully before submission of the application.

- 1) Complete sets of EOI documents will be available for free download by interested Firms from web portal of (<https://wbtenders.gov.in>) & from the State Government website (www.wbiwd.gov.in) mentioned above.
- 2) It will be in the interest of the Firms to familiarize themselves with the e-Procurement system to ensure smooth preparation and submission of the EOI documents.
- 3) The Firms are advised to submit the documents well in advance of the deadline as the Department shall be not be liable or responsible for non-submission of the documents or submission of incomplete documents on account of any technical glitches or any problems in connectivity services used by the Firms.
- 4) Documents can be submitted through the website of (<https://wbtenders.gov.in>).
- 5) An Organization may submit application for more than one work. However, **the applicant shall have to submit separate application and separate EMD for each of them.**
- 6) **Financial documents must be submitted in prescribed mode of e-tender process in Bill of Quantity (BOQ) through web portal (<https://wbtenders.gov.in>) in further tendering process under LTI.**
- 7) The last date for submission of application (hard copy) is the next working day of the e submission till 5.00 p.m.
- 8) **If any of the documents as asked for are not submitted along with the application, the application form submitted by the applicant may be rejected.**
- 9) The EMD of the selected applicants may be forfeited if the organization fails to sign the contract in accordance with the terms and conditions and/or fails to furnish Performance Security as per the terms and conditions.

EOI DOCUMENT

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Objective

1. OBJECTIVE:

Irrigation & Waterways Directorate, West Bengal undertakes various survey works which are required for different working divisions of the Irrigation & Waterways Department. Medium to Major survey works are carried out by engaging different Agencies through open tender process. The survey works conducted are Hydrographic, Bathymetric and Topographic in nature. The data collected from the survey works are used for designing and planning for constructing different canals, waterways for providing relief from waterlogging in certain areas. The surveyed data are also used for making design of embankment, fixation of levels of embankments, AWLRs etc. in connection with various river bank, coastline etc., protection works and reservoir sediment survey.

There is no SOR for the works related to surveys. The rates collected by the Director/RRI from different Agencies for preparation of estimates are not updated. Therefore to obtain good quality of work and to expedite the process of tendering it has been decided to make a panel of survey Agencies having advanced expertise in the survey related works. Thereafter, these Agencies can be eligible for participation of tendering process as required by different Divisions of I&W Dte., by online mode.

Salient Features

2. SALIENT FEATURES:

- a) The enlistment will be done for three (3) years for different categories of work with not less than three (3) Firms in the empanelment.
- b) The enlistment Firms will be allowed to participate in LTI for any work of such type irrespective limit subjected to the approval of the Govt. of West Bengal.
- c) LTI will be held among the empaneled Firms in online mode.

Obligation of both parties

3. OBLIGATIONS OF BOTH PARTIES:

3.1. FOR AGENCY

- 3.1.1. Collection, analysis and storing of surveyed data for various works.
- 3.1.2. The instrument used for the survey will be in full working condition and free from any defect.
- 3.1.3. The raw data of the survey to be submitted through e-mail after the work of each days work.
- 3.1.4. All the reports should be signed by the competent authority of the agency.

- 3.1.5. A record of all the survey data should be maintained by the agency.
- 3.1.6. The instruments should always bear a certificate of calibration for which calibration should be done at regular interval at the cost of the agency.
- 3.1.7. All the survey works should be conducted with reference to relevant guidelines of Survey of India.
- 3.1.8. All stationary such as paper, batteries, computers etc. required for preparation of report should be provided by the agency.
- 3.1.9. All the data of the surveys will be the proprietary data of the department and should be made confidential. Data will be uploaded in a designated server of the department. The agency should not divulge any information regarding the reports.
- 3.1.10. Service standards will be followed by the Private Service Provider in accordance with the Good Industry practices.

3.2. FOR DEPARTMENT

- 3.2.1. The department will identify the area required for the survey.
- 3.2.2. The department will give the value of the Bench Mark pillars, if available.
- 3.2.3. The I&WD shall incorporate the Standard Operating Procedures (SOPs) for each of the services to be followed by the concerned Firms.
- 3.2.4. For purpose of review of performance of the survey work, Department may cross verify any data from field.
- 3.2.5. The Firm may initiate proposal for technology upgradation of the surveying methods, which will be considered by the concerned authority and will be implemented by the Government, if found suitable.
- 3.2.6. Necessary permissions for surveying in the prohibited areas will be arranged by the department.

Monitoring Mechanism

4. MONITORING MECHANISM:

- 4.1. The competent authority of the I&WD shall monitor the day-to-day operational activities of the services undertaken by the Firms.
- 4.2. Performance review will be undertaken by concerned Executive Engineer on quarterly basis. Senior Official from I&WD may be present during Performance Review of the enlisted agencies.

Termination of Empanelment

5. TERMINATION OF EMPANELMENT:

- 5.1. CAUSES OF TERMINATION: Any of the following events shall constitute an event of default by the Firms entitling I&WD to terminate this agreement and subsequent forfeiture of Security deposit/performance guarantee by the authority.

- 5.1.1. Failure to commence services within fifteen days of signing the agreement.
- 5.1.2. Failure to comply with SOPs for operation and management of the services.
- 5.1.3. Distribution of data to other parties other than I&WD.
- 5.1.4. Serious error detected in the data in more than two occasions in any project.
- 5.1.5. Failure to comply with the Statutory Requirements, Acts, Rules and other applicable norms.
- 5.1.6. Criminal indictment of the promoters, member/s of the Board of Directors, chief functionaries, key personnel engaged by the Firms for operation and management of the services.
- 5.1.7. Engagement of unqualified persons for running of the Services.
- 5.1.8. If the Firms fails to provide service as per the norms of the agreement or discontinues service due to any reason what so ever including personal grounds before the contract periods end.
- 5.1.9. Any other condition mentioned in WB Form No. 2911.

5.2. NOTICE/SHOW CAUSE AND TERMINATION:

- 5.2.1. Upon occurrence of any of the defaults, I&WD would follow the procedures of issuing time bound (one month) Notice/Show Cause before deciding on termination of the agreement. The decision of I&WD shall be final and binding on the service provider.
- 5.2.2. If the Firm fails to demonstrate to the I&WD Authority that the default has been cured or fails to satisfy the authority, the authority may terminate this agreement.
- 5.2.3. The decision of the I&WD authority to terminate the agreement shall be final and binding on the Firms.

5.3. TERMINATION DUE TO CHANGE IN LAW:

5.3.1. The empaneled Firms shall have the right to be terminated on account of a “Change in Law”. For the purpose hereunder Change in Law means any of the following events which, as a direct consequence thereof, has a Material Adverse Effect:

- a) ADOPTION, PROMULGATION, MODIFICATION, REINTERPRETATION or REPEAL after the date of this agreement by any Government Agency of any applicable law by any Government Authority; or
- b) The imposition by any Government Agency of any material condition (other than a condition which has been imposed as a consequence of a violation by the Firm of any Clearance or Applicable Law) in connection with the issuance, renewal or modification of any Clearance after the date of this Agreement; or
- c) Any clearance previously granted, ceasing to remain in full force and effect for reasons other than breach/violation by or the negligence of the Firm or if granted for a limited period, being renewed on terms different from those previously stipulated.

5.3.2. Provided nothing contained in this section shall be deemed to mean or construe any increase in taxes, duties, cess and the like effected from time to time by any Government Agency, as Change in Law.

5.4. CONSEQUENCES OF TERMINATION:

5.4.1. Upon Termination of this Agreement for any reason whatsoever, the Firm shall hand over all the data collected by them during that period.

Force Majeure

6. FORCE MAJURE:

If the performance of the agreement by either party is delayed, hindered or prevented or is otherwise frustrated by reason of *force majeure*, which shall mean war, civil commotion, fire, flood, action by any government or any event beyond the reasonable control of the party affected, then the party so affected shall promptly notify the other party in writing specifying the nature of the force majeure and of the anticipated delay in the performance of the agreement and as from the date of that notification I&WD authority may at its discretion either terminate the agreement forthwith or suspend the performance of the agreement for a period not exceeding 6 months. If at the expiry of such period of suspension any of the reasons for the suspension still remain, the I&WD authority and the Firms may either agree a further period of suspension or treat the agreement as terminated. In the event of the Contract being terminated by reason of *force majeure*, The Firms shall take such steps as are necessary to bring the services to an end, in a cost effective, timely and orderly manner. The Firms shall submit an account in writing which shall state the amount claimed taking into account all charges and costs properly incurred or committed by the Firms in relation to the agreement or its termination which cannot be recovered. Provided that payments are not subject to dispute, the I&WD Authority shall:

- a. Arrange to pay through the Executive Engineer all charges and sums due;

- b. Arrange to reimburse all reasonable expenses necessarily incurred by the Firm after the Relevant Date in winding up the agreement.

Dispute Resolution

7. DISPUTE RESOLUTION:

7.1. Amicable Resolution

Where a dispute arises under this agreement, the parties shall make all reasonable efforts to resolve the dispute through good faith negotiations failing which they shall attempt at dispute resolution with the intervention of mutually agreed official of the I&WD, GoWB.

7.2. Arbitration

Except for a dispute in connection with Termination, in which respect the decision of the I&WD authority shall be final, any dispute between the Parties arising out of or relating to this Agreement including the meaning or interpretation of any of the terms set out hereto or any other matters which cannot be resolved through good faith negotiations shall be finally referred to an arbitrator appointed by the Secretary, I&WD, GoWB.

7.3. WB Form no.2911

Any other clause as mentioned in WB Form No.2911.

Miscellaneous

8. MISCELLANEOUS:

8.1. Validity

- i. The empanelment will be valid for three (3) years.

8.2. Assignment and Charges

- i. The Firms shall under no circumstances whatsoever create encumbrance over the survey sites The Firm shall not assign this agreement or the rights, benefits and obligations save and except with prior written consent of the I&WD Authority.
- ii. The I&WD Authority shall be free to assign all or a part of its rights, benefits or novate its obligations under this agreement at any time.

8.3. Indemnity

The Firm shall indemnify, defend and hold the I&WD Authority harmless against any and all proceedings, actions and third party claims arising out of a breach by the Firm of any of its obligations under this Agreement.

8.4. Governing Law and Jurisdiction

The tendering process, the EOI Documents shall be governed by, and construed in accordance with, the laws of India and the competent courts at the State capital shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the tendering process.

8.5. Redressal of Grievance

The Firm shall promptly redress the grievances, if any, reported by any parties, competent authority etc. on account of deficiencies in services provided and shall be liable for any deficiency in service committed to its any person under the prevailing law.

8.6. Supersession & Order of Priority

This Agreement constitutes the entire understanding between the parties hereof with and supersedes any previous expressions of intent, correspondence, understandings or agreement in respect of the Project.

Without prejudicing the aforesaid, the Parties hereby agree that in case of any inconsistency between the provisions of this Agreement and the Scheme, the provisions of the Scheme shall prevail.

8.7. Amendments

This Agreement and the Schedules together constitute a complete and exclusive understanding of the terms of the Agreement between the Parties on the subject hereof and no amendment or modification hereto shall be valid and effective unless agreed to by all the Parties hereto and evidenced in writing.

8.8. Notices

Unless otherwise stated, notices to be given under this Agreement including but not limited to a notice of waiver of any term, breach of any term of this Agreement and termination of this Agreement, shall be in writing and shall be given by hand delivery, Speed Post, recognized national/international courier, or by email with scanned documents, or facsimile transmission and delivered or transmitted to the Parties at their respective addresses set forth below:

Director,
River Research Institute, WB
I&WD, GoWB,
Mohanpur, Nadia
Pin- 741246.

Or such address or facsimile number as may be duly notified by the respective Parties from time to time, and shall be deemed to have been made or delivered (i) in the case of any communication made by letter, when delivered by hand, by Speed Post, by recognized national/international courier or by mail (registered, return receipt requested) at that address and (ii) in the case of any communication made by facsimile, when transmitted properly addressed to such facsimile number.

8.9. Severability

If for any reason whatsoever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties shall negotiate in good faith with a view to agreeing upon one or more provisions which may be substituted for such invalid,

unenforceable or illegal provisions, as nearly as is practicable, provided failure to agree upon any such provisions shall not be subject to dispute resolution under this Agreement or otherwise.

8.10. No Partnership

Nothing contained in this Agreement shall be construed or interpreted as constituting a partnership between the Parties. Neither Party shall have any authority to bind the other in any manner whatsoever.

Condition Precedent

9. CONDITION PRECEDENT

- 9.1. The agency has to visit the site after getting work order for a particular work and satisfy himself regarding the site condition for taking data from field.

Selection Process for Empanelment

10. SELECTION PROCESS FOR EMPANELMENT:

10.1. SELECTION COMMITTEE

The Director, River Research Institute shall form a Selection Committee (SC), to undertake selection for empanelment of the service providers.

10.2. GENERAL ELEGIBILITY CRITERION

- 10.2.1. All bonafide Indian contractors/ agencies/ organizations /firms including registered partnership firms, proprietorship firms, registered consortiums and valid 'Joint Ventures' and of equivalent grade or class who are the owner of Survey companies and having an experience of doing HYDROGRAPHIC surveys for at least five years.
- 10.2.2. The Firms shall be located in anywhere in India.
- 10.2.3. Should have valid Trade license, valid PAN card, P. Tax, I. Tax return document, GSTIN number.
- 10.2.4. The Firms should have required technical manpower in their pay roll for surveying.
- 10.2.5. No litigation is pending on date and no penal measures were taken against the applicant under applicable Acts and laws (the applicant is required to provide a Notarized document to this effect).
- 10.2.6. The Firms should not be blacklisted /debarred by any State Government agency/Central Government agency/State Departments/Central Department.

- 10.2.7. Concerned authority of RRI, I &WD will reject the Application of an Applicant, if it determines that the Applicant has, directly or through an agent, engaged in corrupt, fraudulent, unfair trade, coercive or collusive practices.
- 10.2.8. The Bidder should not be under any liquidation court receivership or similar proceedings on the due date of submission of the bid.
- 10.2.9. The Agency before participating in tendering process for a particular item of survey, must possess the necessary instruments, skilled manpower & other infrastructure under its control. The Agency can apply for multiple category of survey provided, it have the instruments, skilled manpower and other infrastructure required to carry out for the survey of the said item.

10.3. FINANCIAL ELIGIBILITY CRITERIA

- 10.3.1. Any contractor/Firms may apply for empanelment in any one or more TYPES (HYDROGRAPHIC/BATHYMETRIC/TOPOGRAPHIC) of DATA COLLECTION SERVICES , subject to fulfilment of the following conditions:
 - a) For empanelment in any category of data collection - Average of gross Annual Turnover has no lower limit as per clause 11.5.4 of TOR.
 - b) The Firms should be solvent and should not go into financial liquidity and bankruptcy.

10.4. TECHNICAL ELIGIBILITY CRITERIA

- 10.4.1. The Bidder should be in the field of providing similar works for not less than 05 Years as on last date of bid submission.
- 10.4.2. The Bidder should have their own instrument (purchased or hired) and shall be required to submit Calibration certificate of all survey instruments. Calibration should be done within 1 year period before commencement of the work.
- 10.4.3. The Bidder should upload purchase certificate or challan (from original owner) of all the instruments.
- 10.4.4. In case of machine document, MOU with machine owner/firm regarding supply also be granted. Purchase challan/certificate of the main owner must be uploaded.

10.4.5. INSTRUMENTS

The following set of instruments are required to be in possession of the Firms. (Purchase voucher, in the name of the Firm, in original, is required to be produced).

- a) FOR HYDROGRAPHIC SURVEY: - ACOUSTIC DOPPLER CURRENT PROFILER OR SIMILAR TYPE OF INSTRUMENT (1 SET), DIFFERENTIAL GLOBAL POSITIONING SYSTEM (1 SET), DIGITAL LEVEL/AUTO LEVEL (1 SET),

10.4.6. SPECIFICATION OF THE INSTRUMENTS

The instruments mentioned above should have the following specifications as given below.

**SPECIFICATION OF INSTRUMENTS/EQUIPMENT'S FOR SURVEY WORK:
(EUROPEAN MAKE/AMERICAN MAKE)**

A. DGPS (DIFFERENTIAL GLOBAL POSITIONING SYSTEM):

Configuration Option

- a) Rover position update rate: 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz
- b) Rover maximum ranges from base radio: Unrestricted, typical range 2–5 km (1.2–3 miles) without radio repeater.
- c) Rover operation within a VRSTTM network: Yes
- d) Heading and Moving Base operation: Yes

Measurements

- a) High-precision multiple correlators for GNSS pseudo range measurements.
- b) Unfiltered, unsmoothed pseudo-range measurements data for low noise, low multipath error, low-time domain correlation, and high-dynamic response
- c) Very low noise carrier phase measurements with <1 mm precision in a 1 Hz bandwidth.
- d) Trimble EVEREST+ multipath signal rejection.
- e) MSS Band: CenterPoint RTX and Omni STAR by subscription.
- f) Upgradeable to GLONASS L1/L2C/A, L2P Full Cycle Carrier Upgrade to Galileo L1 CBOC, E5A, E5B & E5 Alt BO C8 and BeiDou B1, B1C, B2, B3 Able to track 3rd generation BeiDou signals Integrated MEM's sensor for eBubble, 4-channel SBAS L1 C/A, L5 (WAAS/EGNOS/MSAS/GAGAN) QZSS: L1 C/A, L1C, L1 SAIF, L2C, L5.

SBAS (WAAS/EGNOS/MSAS) Positioning

- a) CenterPoint® RTX Positioning: Accuracy ^[12]- Horizontal 2cm (0.06 ft) RMS, Vertical 2cm (0.16 ft) RMS. Convergence time for specified precisions ^[12]- 5 minutes in select regions, and within 30 minutes worldwide.
- b) Fill Positioning: RTK11 + 10mm (0.03 ft)/min Horiz. + 20mm (0.06 ft)/min Vert. RMS
- c) Location RTK Positioning: Horizontal accuracy- Location RTK (10/10) or (10/5) 2 cm + 1 ppm RMS (0.2 ft + 1 ppm). Vertical accuracy- Location RTK (10/2) 2 cm + 1 ppm RMS (0.065 ft + 1 ppm)
- d) Real-Time Kinematic (RTK up to 30 km) Positioning ^[2]: Horizontal accuracy- 5 mm + 1 ppm RMS (0.026 ft + 1 ppm RMS). Vertical accuracy- 10 mm + 1 ppm RMS (0.05 ft + 1 ppm RMS)
- e) Tilt Compensation (RTK, < 30° of tilt) ^[13]: Horizontal accuracy- 8 mm RTK + 8 mm Tilt Compensation + 0.5 mm per degree of tilt + 1 ppm RMS (0.026 ft + 0.026 ft + 0.001 ft + 1 ppm RMS). Vertical accuracy- 15 mm + 1 ppm RMS (0.05 ft + 1 ppm RMS).
- f) VRS ^[9]: Horizontal accuracy- 8 mm + 0.5 ppm RMS (0.026 ft + 0.5 ppm). Vertical accuracy- 15 mm + 0.5 ppm RMS (0.05 ft + 0.5 ppm).
- g) Precise Heading: Heading accuracy- 0.09° RMS
- h) High Precision Static: Horizontal accuracy- 3 mm + 0.1 ppm RMS (0.01 ft + 0.1 ppm). Vertical accuracy- 3.5 mm + 0.4 ppm RMS (0.011 ft + 0.4 ppm)
- i) Initialization Time: Regular RTK operation with base station- Single/Multi-base typically less than 8 seconds >99.9%
- j) The threshold value shall not exceed 02 for PDOP (Positional Dilution of Precision) and HDOP (Horizontal Dilution of Precision).

Operation Time on Internal Battery

- a) Rover: 8.0 hours; varies with temperature
- b) Base station: 450 MHz systems- Approximately 6 hours; varies with temperature ^[5]. 900 MHz systems- Approximately 6 hours; varies with temperature

Communications

- a) Lemo (Serial 1): 7-pin lemo 2-key, Power Input, USB. Optional USB to RS232 serial cable receiver supports RNDIS communications over USB.
- b) 1PPS (1 Pulse-per-second): Yes
- c) Ethernet: Yes
- d) WiFi: Yes
- e) Bluetooth wireless technology: Fully-integrated, sealed 2.4 GHz Bluetooth module ^[6].
- f) Integrated radios (optional): Fully-integrated, fully-sealed internal 403-473 MHz; Internal 900 MHz; Rx/Tx
- g) Channel spacing (450 MHz): 12.5 kHz or 25 kHz spacing available
- h) Sensitivity (450 MHz): -114 dBm (12 dB SINAD)
- i) External GSM/GPRS, cell phone support: Supported for direct-dial and Internet-based correction streams using the SCS900 software
- j) Receiver position update rate: 1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz positioning
- k) Correction data input: CMR™, CMR+™, CMRx™, RTCM 2.x, RTCM 3 (require Rover upgrade).
- l) Correction data output: CMR, CMR+, CMRx, RTCM 2.x, RTCM 3 (require Base upgrade).

Receiver Upgrades

- a) Precision upgrades: Location RTK (10/2), (10/10), or (30/30) Precision RTK Rover, Base or Rover/Base. IMU (Tilt Correction).
- b) Signal / Constellation upgrades: GPS, IRNSS, L5 (Triple Frequency), GLONASS, GALILEO, BeiDou GNSS ^[10]

Notes:

1. Receiver will operate normally to those temperature limits. Internal batteries will operate from -20 °C to +48 °C
2. Accuracy and reliability may be subject to anomalies such as multipath obstructions, satellite geometry, interference and atmospheric conditions. Always follow recommended survey practices.
3. Depends on SBAS system performance.
4. May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.
5. If your receiver is transmitting 2.0 W (450 MHz), you will experience reduced battery performance compared to the 0.5 W solution.
6. Bluetooth type approvals are country specific.
7. When receiver is combined with a rover with Moving Base installed or other suitable receivers.
8. Galileo Commercial Authorization Developed under a Licence of the European Union and the European Space Agency.
9. Networked RTK PPM values are referenced to the closest physical base station
10. This Trimble SPS Receiver is capable of supporting existing and planned GNSS satellite signals, including GPS, GLONASS, GALILEO, BeiDou and QZSS, and existing and planned augmentations to these GNSS systems.
11. RTK refers to the last reported precision before the correction source was lost and xFill started
12. Receiver accuracy and convergence time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings.
13. Proper survey techniques should be followed to reduce multipath error and maintain a good line of sight to the sky for satellite tracking. At greater than 30° of tilt, accuracy at the rod tip may decrease more than specified

B. ADCP (ACOUSTIC DOPPLER CURRENT PROFILER):

Max Profiling Range: Frequency 600 kHz
 Range: 60m
 Max Bottom Tracking Range: 600 kHz
 BT Range: 100m
 Max Depth Detection: 600 kHz
 VB Range: 120m
 Velocity Accuracy (typical): $\pm 0.25\%$ of measured velocity ± 0.2 cm/s
 Velocity Range: ± 9.5 m/s
 Data output rate: 1-2 Hz (typical)
 Beam Angle: 30°
 Standard Sensors: Temperature, Pressure, Tilt, Acoustic depth, Compass, GPS (embedded)
 Communications: RS-232, Bluetooth.

C. DIGITAL LEVEL (DL) /AUTO LEVEL:

Technical data

Area of use – Quick measurements of heights, height differences and stake outs and stake outs – I. and II. order levelling, High precision measurements.

Accuracy- Standard deviation height measurement per 1km double-run (ISO 17123-2) Electronic measurements: with Invar staffs- 0.3mm, with standard staffs 1.0mm, Optical measurements- 2.0mm, Distance measurement- (electric) 1cm/20m (500ppm) (standard deviation)

Range: Electronic measurement 1.8m – 110m, Optical measurement- from 0.6m

Electronic measurement- Resolution height measurement 0.01mm, 0.0001ft, 0.0005inch Time for single measurement- typically 3 seconds, Measurement modes- Single, average, median, repeated single measurements, Measurement programs- Measure & Record, staff height/distance, intermediate BF, aBF, BFFB, aBFFB, on-board adjustment, quick closure, stakeout.

Coding: Remark, Free code, Quick code

Data storage: Internal memory 6000 measurements or 1650 station, Backup- PCMCIA card (ATA-Flash/SRAM/CF), Online operations- GSI format via RS232, Data exchange internal memory- GSI8/GSI16/XML/flexible formats.

Telescope magnification: 24x

Compensator: Type- Pendulum compensator with magnetic damping, Slope range- $\pm 10'$
 Compensator setting accuracy- 0.3" 0.8" (standard deviation).

Display: LCD, 8 lines at 24 characters.

Battery operated: 12h and 24h, Battery adapter -Alkaline battery, 6x LR6/AA/AM3, 1.5V
 Environmental conditions Working temperature -20°C to $+50^\circ\text{C}$ Storage temperature -40°C to $+70^\circ\text{C}$ Dust/water (IEC60529) IP53 Humidity 95%, non-condensing.

10.4.7. SOFTWARE: For DGPS- Data processing relevant latest software like Trimble Bisuness Software (TBC), Magnet Tools (MT) and other related software and the details of the software used shall be submitted at the time of bidding.

For ADCP with suitable DGPS positioning arrangement with digital data logging using hydrographic survey software like HYPACK/ Win River-II or other relevant software. All arrangement mounted on a suitable survey vessel.

10.4.8. TECHNICAL MANPOWER

The following technical person should be in the pay roll of the agencies.

1. Engineer (Degree or Diploma in Civil Engineering or equivalent from any Govt. recognized institute having an experience of 2 & 3 years of modern surveying respectively) - One (1) no. for this category of empanelment and capability to deliver survey output in GIS platform like .KMZ file or .SHP (Shape file) and similar others.
2. Surveyor (Diploma in surveying or equivalent from any Govt. recognized institute having an experience of 3 years in modern surveying or graduate with an experience of 2 years in modern surveying or 12th pass with an experience of 5 years in modern surveying).-Two (2) nos. for this category of empanelment.
3. Auto-cad expert (Certificate course in draughting from any Govt. recognized institute with an experience of 2 years.) –One (1) no. for this category of empanelment.

10.4.9. LIST OF WORKS COMPLETED IN THE LAST FIVE YEARS.

The Firm has to submit a list of works along with the Completion Certificate from the concerned authority for the similar nature of work as required for Irrigation & Waterways Department, for which he is intending to be empaneled, during the last five years.

Applicant failing to fulfil any of the above-mentioned Eligibility Criteria will not be considered for empanelment.

10.5. SHORT LISTING OF APPLICATIONS

Empanelment process would involve short-listing of applicants based on the Eligibility Criteria as mentioned under sl no. 10.4.1 to 10.4.9 above. This panel will be prepared based on the category of services to be provided viz. for HYDROGRAPHIC SURVEYS. If the list of eligible firm is less than three, no panel will be prepared.

10.6. PROCESS OF FINAL EMPANELMENT

Selection of the Firms will be finalized after verification of the all the relevant documents in original by a committee to be constituted by the Director, River Research Institute. The committee will also examine the technical knowledge of the Engineers/Surveyors/Draughtsman engaged by the Firms by appearing in person at RRI on a date to be notified later to the Short Listed Firms.

10.7. ELIGIBILITY TO DIFFERENT VALUES OF WORK

The estimated value of the work for each category will be decided depending on the volume of work as per case to case basis.

10.8. OTHER INFORMATION

10.8.1. Canvassing

If the Firms undertakes any canvassing in any manner to influence the process of selection of the successful Firms or the issuance of the NOA, such Firms shall be disqualified.

10.8.2. Misrepresentation by the Firms

The “Selection Committee” reserves the right to reject any documents if:

At any time, a material misrepresentation is made by the Firms; or The Firms does not provide, within the time specified by the Selection Committee, the supplemental information sought by the Department for evaluation of the documents.

If it is found during the evaluation or at any time before signing of the Contract or after its execution and during the period of subsistence thereof, the Firms in the opinion of the Department has made a material misrepresentation or has given any materially incorrect or false information, the Firms shall be disqualified forthwith, if not yet selected as the Successful Firms by issuance of the LOA. If the Firms, has already been issued the LOA or it has entered into the Contract, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in these EOI Documents, be liable to be terminated, by a communication in writing by the department to the Firms, without the Department being liable in any manner whatsoever to the Firms.

Process of participation in EOI

11. PROCESS OF PARTICIPATION IN EOI:

11.1. General procedure for submission of Documents.

Documents are to be submitted electronically in the on-line mode through the e-Procurement portal www.wbtenders.gov.in. All documents uploaded by the EOI Inviting Authority forms an integral part of the works contract/Agreement. Contractors/Firms are required to upload the entire EOI documents along with all other relevant PQ credential documents as asked for in the EOI, electronically, through the above portal within the stipulated date and time as notified in the EOI. Documents are to be submitted in only one part/folder, only being ‘Technical Proposal’. ‘Financial Proposal’ to be submitted through LIMITED EOI ENQUIRY (LTI). The Firm should carefully go through all the documents of the EOI and upload the scanned copies of his/her/their original documents in ‘Portable Document Format’ (PDF) files in the designated links in the web portal as their ‘Technical Documents’. Documents uploaded are to be scanned for virus and required to be digitally signed using their ‘Digital Signature Certificates’ (DSC). Firms should especially take note of all the Addenda or Corrigenda notices related to the EOI and upload all of these documents forming a part of their application as EOI document. Documents digitally signed and uploaded in the EOI portal by the Firms containing requisite information comprising ‘Technical documents’, which cannot be changed after end date and time fixed for submission of the EOI. Extension of last date for application submission or insertion of any of Addendum/Corrigendum, if unavoidable is to be notified as per Finance Department guidelines in the e-Procurement Portal, Departmental website,

Newspapers and in Notice boards. Whenever any corrigendum is issued irrespective of the content (date corrigendum or otherwise), due date of submission of documents will be extended by 7 (seven) calendar days to be published before expiry of the last date for original validity period of documents submission. Extension of last date and time for documents submission by issuance of a Corrigendum shall not be treated as 2nd Call.

11.2. Technical Proposal

The Technical Proposal should contain scanned PDF files of all documents in the following standardised formats in one part covers or folders.

Cover No	Cover	Document Type	Descriptions
1	Technical (Pre-Qual)	.pdf	NIT_Corrigendum
		.pdf	Agreement_2911 (If requires)
		.pdf	Forms & Annexures

11.3. Descriptions of Technical (Pre-Qual) Covers

- i. 'NIT_Corrigendum' folder: e-Notice Inviting EOI is to be downloaded in entirety, digitally signed and uploaded during application submission in "NIT_Corrigendum" folder. 'Corrigenda/Addenda' if published in connection with the EOI is to be digitally signed and uploaded in the 'NIT_Corrigendum' folder merged with e-NIT documents during application submission.
- ii. 'Agreement_2911' folder: Contract /Agreement in WB Form No. 2911(i) published in the EOI is to be downloaded digitally signed and uploaded during application submission in Agreement_2911 folder.
- iii. 'Forms' folder: Applications for EOI, vide self-declaration format in specimen Annexure-I, self-declaration that no litigation is pending in specimen Annexure-II, self-declaration to compliance with terms of service in specimen Annexure-III, self-declaration to use qualified manpower in specimen Annexure-IV, self-declaration of documents not having common interest as a different organisation vide specimen Annexure-V (Form-2 of 2911), and self-declaration on antecedents and performance of the Firm in specimen Annexure-VI(Form-4 of 2911). All above are to be filled up completely, digitally signed and uploaded during documents submission in "Forms" folder.

NOTE:

- i. Firms are required to keep track in the e-Procurement website www.wbtenders.gov.in for all the Addenda or Corrigenda notices and documents published in connection with a particular EOI within the period and upload the same, digitally signed by him/her along with their e-documents. EOIs submitted without Addendum/Corrigendum are liable to be treated as incomplete and thereby liable for disqualification or rejection.
- ii. Form 1, Form 2, Form 3 (for companies etc.) and Form 4 are taken from Firms by TIA as

Firm's self-declaration or undertakings. These formats are specimens or samples only, which are to be firstly downloaded by the Firms from the NIT in e-Procurement portal, filled up completely and again uploaded with their electronic documents.

- 11.4. My Document [OID* Cover] containing: It is desired that PDF files of all other original documents in support of their eligibility and PQ credential shall have to be submitted under the OID cover folders as detailed below:

* OID denotes Other Important Documents.

My Document Format for uploading in the OID folder:-

Sl. No.	Category	Sub-category	Sub-category description	Remarks if any
I	Certificates	1. certificates.pdf 2. GST_registration_certificates.pdf	1 Latest Professional Tax Payment Certificate (PTPC) or, PT deposit challan for current financial year or Government Order for exemption in other States where ever applicable. 2 Valid PAN Card in the name of Firms/organisation 3 Income Tax Return of current Assessment year or, IT Return of immediate preceding Assessment year whichever is ;attest available 4 Valid GSTIN under GST Act & Rules	Refer to Clause 3.2C(I) for details
II	Company Details	companydetails.pdf 1 companydetails.pdf 2	1 For Proprietorship Firms, Partnership Firms, Registered Companies, Registered Co-operative Societies for Valid Trade License/ acknowledgement or Receipt of application for Trade License/ Revalidation OTHER REQUIREMENTS:- 2 For Partnership Firms: Legally valid Partnership Deed, Form-VIII/ Memorandum of Registration of Registrar of Firms 3 For Companies: Incorporation Certificate, Memorandum of Articles of ROC, List of current owners/ Directors/Board Members 4 For State Registered Co-operative Societies: Society Registration certificate from ARCS of the State, Society by-Laws, latest available Auditor's Report of Directorate of Co-operative Audit within proceeding five years as per Societies Act & Rules	Refer to Clause 3.2C(II) details
III	Credential of works	1. Credential pdf 1. 2. Credential pdf 2	1 Work Order/ Award of Contract or LOA/LOI duly authenticated by issuing authority. 2. Pre-Qualification (PQ) Work credential of one 100% completed work as desired in the NIT as the Completion Certificate (CC) duly authenticated by competent authority.	Refer to Clause 3.2C(III) for details
IV	Financial credential	Payment certificate.pdf	All 100% Payment Certificates of competent authorities during preceding Five FY. IT Return of Firms in three FY, or Audited Profit & Loss Accounts statement of any three financial years within the zone of preceding five financial years whichever is available.	Refer to Clause 3.2C(IV) for details

Note:

- i. It is desirable though not mandatory that all documents stated above in PDF files shall be uploaded by Firms only in specified designated folders. No off-line document will be accepted and considered during EOI evaluation stage from Firms before publishing of final empanelled Firms by TEC may be undertaken directly from PQ Credential issuing

authority.

- ii. Validity of documents submitted by Firms shall be stand determined on the date of publication of EOI notice (e-Notice Inviting EOI)

11.5.

11.5.1. Certificate/s: The documents mentioned below under Sl. i, ii & iii are to be uploaded as 'PDF' files in Certificate.pdf1 (name of the file should be "certificates.pdf"). The document mentioned under Sl. iv below is to be uploaded in GST Registration Certificate.pdf2 file.

- i. Latest available Professional Tax Payment Certificate (PTPC) or the PT payment challan/ receipt for current financial year/Waiver Order of competent authority in other States if applicable.
- ii. Valid PAN Card of the Firms/s are required;
- iii. Income Tax Return of current Assessment Year or, IT Return of immediate preceding Assessment year under IT Act & Rules, whichever latest available with the Firms.
- iv. Valid 15 digit Goods and Service Tax payer Identification Number (GSTIN) as per GST Act, 2017 & Rules of the Firms to be uploaded in 'GST registration certificate pdf'.

11.5.2. All documents mentioned in tabular format under Clause 3.2.2 and also explained below should be uploaded during electronic documents submission in PDF files with the name of file should be "companydetails.pdf".

- i. For Partnership Firms: Documents of Registration of Partnership Firms in the certified copy of 'Form No. VIII,' issued under Indian Partnership Act, 1932 (Act-IX of 1932) by the Registrar of Firms. In case a Partnership Firm is yet to receive Form No. VIII, a "Memorandum" issued by the Registrar of Firms may also be accepted.
- ii. For Companies: Incorporation Certificate, valid Trade License or acknowledgement of issuing authority of receipt of application for Trade License / renewal, 'Memorandum of Articles' registered under the Registrar of Companies (ROC) under the Indian Companies Act, List of owners/ Directors/Board Members are to be uploaded with the application.
- iii. For State Registered Co-operative Societies:
 - a. Society Registration certificate from ARCS (Assistant Registrar of Co-operative Societies, GoWB) and By-Laws for Cooperative Societies under West Bengal Co-operative Societies Act, 2006 and Rules, 2011 and all amendments.
 - b. Latest Auditor's Report of Directorate of Co-operative Audit under Department of Co-operative, Government of West Bengal within preceding five financial years as per Societies Act & Rules.

11.5.3. Eligibility criteria based on Credential of work/Prequalification Work Credential "credential.pdf".

- i. Work Order/Award of Contract or the Letter of Acceptance (LoA) duly authenticated by the competent issuing authority is to be submitted under Technical cover (name of file should be “credential.pdf 1).
- ii. Pre-Qualification (PQ) credential of one 100% completed work of Gross Notional Value as desired in the NIT as the Credential Certificate (CC) duly authenticated by competent authority. (Name of file should be “credential.pdf 2).

11.5.4. PQ Financial credential: In ‘payment certificate.pdf’ folder under OID cover.

- i. Disqualification during PQ evaluation of financial capability of Firms shall not be decided during technical documents evaluation by TEC up to work of Rs 45 lakh, as no minimum financial capacity is fixed, except if reveals from documents beyond any doubt of the financial liquidity & bankruptcy of the Firms, determining absolute incapacity to execute the work.
- ii. But, i. ‘Payment certificate’ of works authenticated by appropriate authority for preceding three Financial Years, or, ii. Valid Income Tax Returns for preceding three FY, or, iii. Audited Profit & Loss Accounts statements of three FY, any one of i, ii, or iii as a complete set for three FY within zone of immediate preceding five FY is to be uploaded in ‘payment certificate.pdf’ folder under OID cover, else the Firms may be disqualified. Name, address, contact no. and registration no. of auditor Firm is desirable for Profit & Loss accounts statement, if submitted.

Note:

- a. If the Firms Company/Firm was set up less than three years ago, audited balance sheets and P/L Accounts for the number of years since inception are to be submitted under Technical cover and the average value would be evaluated only for the period since inception and not three years. Credential Certificate (CC) given as PQ Work Credential may also contain payment certificate and in those cases separate payment certificate is not required.
- b. No file in Technical / Pre-Qual cover or OID cover folder is allowed by the system to be kept blank/empty. Where ever the forms and documents are uploaded by the EOI Inviting Authority, the same is to be downloaded, duly filled up, converted to pdf file, and again uploaded after digital signing, forming a part of EOI document. These formats are specimens or samples only and deviation from specimen format is not a sufficient ground for rejection of the documents. Relevant blank Forms are to be firstly downloaded by the Firms from the NIT in e-Procurement portal, filled up completely and again uploaded with their electronic documents. No offline document is acceptable from Firms by TEC during evaluation stage.

11.6. Financial proposal / documents under Financial cover:-

To be submitted during LIMITED TENDER INQUIRY (LTI).

11.6.1. Work will be awarded from the empanelled service providers through LIMITED EOI INQUIRY (LTI).

SOP for Collection, Analysis and preservation of Survey Data

1. INTRODUCTION:

The main objective of the proposed work is to carry out the detailed survey of discharge measurements, velocity profile and bed profile of River/khal/Canal/Drainage channel/creek etc existing alignment Survey of those water bodies in all over West Bengal using a combination of DGPS/RTK, ADCP and Digital level including construction & establishment of permanent Ground control point etc. all complete. All the works shall be carried out in accordance with the detailed specification mentioned below. In case, the specifications of any work are not given herein, the work shall be carried out in all respect as per the instruction of the competent authority.

2. SCOPE OF WORK:

- Establishment of various permanent and temporary Ground Control Points (GCPs) by Differential Global Positioning System (DGPS) and Digital-level (DL) surveying instruments along the river bank /drainage channel bank and construction of permanent bench mark (BM) structures.
- Hydrographic survey for obtaining measurements of discharge, velocity profile and bed profile of above stated water bodies at specified intervals using Real Time Kinematic (RTK) enabled Acoustic Doppler Current Profiler (ADCP) based on the requirement.
- Submission of the survey data with hydrographic survey maps and other detail drawing, also in tabular data forms using PDF, Auto Cad, MS Excel or other related software in both hard copy and soft copy format. Necessary pictures and videography of the work also to be appended.
- General Scope of work should be properly maintained as given in below. (para C)
- Submission of survey report should be properly maintained as given in below. (para D)

3. DETAILED SCOPE OF WORK WITH TECHNICAL SPECIFICATIONS:

A. Establishment of Permanent and Temporary Ground Control Points (GCPs)

I. Location of GCPs:

There will be **two** Base Points and **two types** of GCPs (Permanent GCPs / Primary Survey Control Points and Temporary GCPs / Secondary Survey Control Points) to be established along the river at strategic locations. The two Base Points to be established at locations equally covering the whole survey area and placed centrally in each of their covered areas. Permanent GCPs to be placed at a maximum interval of 5 km and Temporary GCPs at a maximum

interval of 2.5 km.

These points shall be established in such a way that further surveys can be carried out in the same coordinate system. The GCPs will form a network of triangles preferably not too acute nor obtuse covering the survey area.

The locations of these Base points and GCPs to be fixed by the survey agency and will be furnished for approval by the competent authority for commencement of the survey.

The GCPs shall be setup with reference to known Survey of India Permanent Bench Marks. Local geoid corrections are to be made using SOI GTS (Great Trigonometrical Survey)/ Continuously Operating Reference Stations (CORS) with an accuracy limit of 5 mm.

II. Construction of permanent BM pillars and selection of locations for temporary GCPs:

Permanent BM pillars shall be constructed at the locations of the Primary GCPs and to be constructed as per the design and specifications given in the Tender drawing. Bench Mark pillars are to be constructed at suitable locations on embankment proper or at places not more than 100 m from embankment as per direction of the Engineer in charge. Secondary Survey Control Points to be established on any permanent structures of the Govt. The GCPs shall be established at such a location so that it may not be disturbed/damaged by local people. All GCPs with proper indexing & labelling shall be painted yellow and duly marked for identification with black paint.

III. Datum of Coordinates of the Base Points and GCPs:

The horizontal coordinates of the GCPs will be derived based on WGS 84 Datum and presented both in Geographical Coordinate Systems (Latitude and Longitude in decimal degrees with 9 digits after decimal & Ellipsoidal Height) and Projected Coordinate System (Zone-45N, Easting and Northing values in m, with 9 digits after decimal point).

The vertical coordinates will also be based on WGS 84 Datum and will give the **Ellipsoidal** height in m. The Ellipsoidal values will be converted into **Orthometric** value (MSL) by the client, based on the Survey of India Geoid model (EGM 96 and EGM 08 will not be accepted) and then these values will be used for bathymetric and topographic survey, to be carried out further.

IV. Process of obtaining Coordinates of the Base Points and GCPs:

a) For Base Points survey.

With DGPS instrument from CORS network of Survey of India. (Registration for CORS network will be given by the client). Or, with DGPS instrument in Static mode for a period of **24 hours**. (If mobile network is not available or very poor around Base Point location.). Only the Latitude, Longitude and Ellipsoidal height from the instrument to be recorded.

b) For Primary GCPs.

With DGPS instrument from CORS network of Survey of India. (Registration for CORS

network will be given by the client). Or, with DGPS instrument in Static mode for a period of **6 hours** with the base placed over any nearest established Primary GCP. (If mobile network is not available or very poor around GCP location.)

Elevation of all BM should be measured using Digital level instrument and Static mode in DGPS instrument from the nearest established GCP as a Base point. The final value of the elevation will be finalized after necessary scrutiny by the Engineer In-Charge/ Site in Charge from the data acquired in both modes of survey. All raw data from digital level shall be submitted along with adjusted and unadjusted levels in tabular form & using applicable Geo-Office software or any other software as per direction of Engineer in-Charge complete.

c) For Secondary GCPs.

With DGPS instrument from CORS network of Survey of India. (Registration for CORS network will be given by the client). Or, with DGPS instrument in Static mode for a period of **3 hours** with the base placed over any nearest established Primary or secondary GCP. (If mobile network is not available or very poor around GCP location).

Elevation of all BM should be measured using Digital level instrument and Static mode in DGPS instrument from the nearest established GCP as a Base point. The final value of the elevation will be finalized after necessary scrutiny by the Engineer In-Charge/ Site in Charge from the data acquired in both modes of survey. All raw data from digital level shall be submitted along with adjusted and unadjusted levels in tabular form & using applicable Geo-Office software or any other software as per direction of Engineer in-Charge complete.

V. Process of measurement with DGPS instrument for better accuracy:

- a) Static Observation time frame should be used within preferably 6:00 hrs to 14:00 hrs.
- b) DGPS/ GNSS Receiver Accuracy (RMS) should be maintained:
 - Static & Fast Static: Horizontal accuracy – (5 mm ± 0.5 ppm) or better
Vertical accuracy – (5 mm ± 1 ppm) or better
 - Kinematic RTK: Horizontal accuracy – (10 mm ± 1 ppm) or better
Vertical accuracy – (15 mm ± 1 ppm) or better
- c) The threshold value shall not exceed 1.5 for PDOP (Positional Dilution of Precision) and HDOP (Horizontal Dilution of Precision).

d) The control point locations should be selected so as to be:

- Clear of HT/LT lines
- Free from multi path problems associated with tall features in the vicinity
- Free from foliage
- Open to sky with a clear view of the horizon

VI. Ground Control Points (GCP) establishment report:

Control point establishment report shall be submitted after completion of activities covering

the following:

- a) Final list of all Base Points, GCPs with Co-ordinate [X, Y, Z] in Universal Transverse Mercator (UTM) system and Geographical Coordination System with their location with respect to existing roads/identifiable permanent features for easy identification have to be prepared and submitted to Engineer in-charge/ Site in charge.
- b) Geo-referenced digital photographs of these pillars shall be taken from three different directions. A satellite image clip of approximate size 100 X 100m, around the selected location, should also be furnished along with other site photographs. Further description of the selected location should also be provided. The measurements from permanent features identifiable nearest to the point shall also be taken.
- c) Both, the Raw Data file [in RINEX (Receiver Independent Exchange Format) or .T02 as well as proprietary formats of DGPS manufacturer] and the Transformed Data for the entire survey area and adjoining areas of interest. The raw data will be checked properly by the concerned authority, if not satisfied after checking the raw data as per technical specification, then the same point should be re-surveyed.
- d) The Agency shall download the raw GCP data (static data) on a computer at site or suitable location itself and same working day to be provided to site in-charge.
- e) Base line report and necessary correction made during establishment of Control Points.
- f) Processed data in MS-Excel Worksheet/ASCII/XML, .kml & .dwg format.
- g) Each day's work shall be compiled and mapped/documented the same day to be sent to the site in-charge through electronic medium.

B. Hydrographic Survey

Hydrographic survey will be started with the established GTS/GCPs Bench mark. RTK based ADCP to be used for developing under water bed profile, measurements of discharge and velocity profile etc. in the above stated water bodies shall be conducted. The Hydrographic setup shall comprise of ADCP with positioning system should be of latest specification to meet the specified accuracy levels.

- a) Establishment of control points through DGPS/DL/Auto Level by triangulation for horizontal control and closed levelling from nearest benchmarks for vertical control.
- b) In the water bodies using ADCP with suitable DGPS positioning arrangement with digital data logging using hydrographic survey software like HYPACK, WIN RIVER-II, EVA etc. All arrangement mounted on a suitable survey vessel.
- c) Survey should be done using RTK based ADCP and licensed survey software for developing under waterbed profile in river channels & other water bodies.
- d) ADCP data should be interfaced with HYPACK/ Eiva software or equivalent to data logging software in respect of tide correction (if required).
- e) RTK based ADCP should be calibrated and checked by concerned authority before using in field.
- f) Performing bar check calibration in the field and Applying draft, roll/pitch and other corrections before and after the survey work daily.
- g) Observing water levels to reduce soundings in the river/lake/water body by installing water/tide gauges on banks and connecting it to nearest Survey of India benchmarking.
- h) Agency must be capable of performing hydrographic Survey using ADCP for river discharge Measurement and stream flow velocity.

C. General Scope of work:

The successful Bidder has to submit a detailed plan of the work after award of the work:

1. Raw data as per specified format (.CSV/.txt/.mmt etc.) should be submitted in day to day during survey by electronic medium. Failure to provide data on time, data for that day will be considered ineligible/ unacceptable/ tempered data. Thereafter again resurvey will be taken in that part from your end.
2. .dwg & .kmz/.kml and shape file of the detailed survey of the water bodies shall be made from the reconnaissance survey such that the layer can be visualized in Google Earth/Arc GIS Earth.
3. The safety and security of the survey equipment is responsibility of the owner. Survey equipment to be protected from adverse climatic conditions.
4. Arrangement of boats, vehicles, power source, ropes, other necessary tools etc. for surveying to be done by the survey agency.
5. Safety of the survey personnel is the responsibility of the company/proprietor and maximum precaution should be taken for surveying in rivers, jungles, deep forests against snake bite, animal attack etc. Wearing of life jackets and gum boot is a must for ADCP surveys and surveys in marshy land.
6. Necessary ancillary works for accessibility to site like jungle cutting, water hyacinth removal and any other such hindrances to be sorted out by the agency.
7. Coordinates and level of 50 % of the established GCPs will be cross checked by the client with their own instrument and RMS values of errors of horizontal positional values and vertical positional values with that obtained by the agency will be checked. The surveyed data given by the agency will be accepted if the RMS value of errors is within 2 cm for horizontal coordinates and 5 cm for vertical coordinates. The level data given by the agency will be accepted if the RMS value of errors is within 1 cm.
8. Logistic support for carrying instruments from RRI to the site and back and movement to different GCP points for checking by the client, shall be arranged by the agency, and the cost of which shall be included in the quoted rate.
9. In case, the RMS error of any point is more than the acceptable value, a joint survey will be conducted and for that all the logistic support shall be provide by the agency, as mentioned above.
10. The technical evaluation of the tender shall very much depend upon the technical strength of the Bidder. The bidder has to provide inputs to meet the evaluation criteria as given below.

D. Submission of survey report:

The contractor shall submit 1 set of draft report after completion of field activities, processing of data completes in all respect etc. for scrutiny by the competent authority. The corrections, if any, observed by the authority should be incorporated and 5 sets of final drawings to be submitted thereafter. A set of survey document should comprise of the following.

1. Discharge, Velocity and Bed profile summery report should be submitted as per

- prescribed format.
2. Index map of the surveyed area showing all the river network, important features and GCPs in a scale of 1: 5000 (or suitable scale as decided by EIC), all geo referenced. Details like name of GP, name of mouza, name of village and name of local inlet channel related with the survey, any others data etc. should be recorded during survey and to be incorporated into the map. Print copy of this map should be kept at site during detailed survey.
 3. Observed HFL value to be shown, where such information is available. Water level on the date of survey to be shown on each profile. Bed profile value also to be shown in tabular form.
 4. Longitudinal bed profile of river along the thalweg line.
 5. Contour of the river bed or reservoir bottom, showing deep pools formed in the river bed, main channel, braided channels etc.
 6. Relevant photographs taken during survey.
 7. All raw survey control data used or derived from this awarded contract of survey work will be supplied to client to ensure independent Quality Assurance (QA) of the survey operations.
 8. The Contractor also shall submit the DGPS survey/ DL/Auto level survey data in raw format along with processed data in format proper naming convention for the layers and features needs to be developed by the contractor.
 9. All type of soft copy in editable formats in Hard disk/Pen drive (32GB).

Forms

[On letterhead of the Firms]

Annexure-I

From

[Name of Firms]

[Address of Firms]

Date: [insert date], 2025

To

The Director,
River Research Institute,
Irrigation & Waterways Directorate, GoWB,
Mohanpur, Nadia, Pin-741246
e-mail: rri.wbiwd@gmail.com

Sub: Application Form for empanelment of the “EMPANELMENT OF SURVEY AGENCIES FOR UNDERTAKING VARIOUS SURVEY UNDER IRRIGATION & WATERWAYS DEPARTMENT, GOVERNMENT OF WEST BENGAL FOR COLLECTION, ANALYSIS AND STORING OF VARIOUS DATA (RELATED TO HYDROGRAPHIC SURVEYS) FOR RIVERS, KHALS CANALS, CREEKS, CHANNELS, DAM, RESERVIORS, WATERBODIES, ETC. FOR 3 (THREE) YEARS.”

Dear Sir,

I, [insert name] as [insert designated title] of [insert name of organisation] at [insert location of business] and being the authorized signatory of the Firm, do hereby declare and undertake that I have read the EOI Documents for empanelment for the work of “EMPANELMENT OF SURVEY AGENCIES FOR UNDERTAKING VARIOUS SURVEY UNDER IRRIGATION & WATERWAYS DEPARTMENT, GOVERNMENT OF WEST BENGAL FOR COLLECTION, ANALYSIS AND STORING OF VARIOUS DATA (RELATED TO HYDROGRAPHIC SURVEYS) FOR RIVERS, KHALS CANALS, CREEKS, CHANNELS, DAM, RESERVIORS, WATERBODIES, ETC. FOR 3 (THREE) YEARS”.

I hereby submit detailed information regarding eligibility of my organisation to run the service.

1. Name of the service for which application has been submitted :
FOR HYDROGRAPHIC DATA COLLECTION.
2. Name of the Organization:
3. Status of the Organization: Limited Co./Private Limited Co./ Partnership Firm/Proprietorship Firm /NGO /Trust/Others (specify):
4. Nature of Business/Activities of the Applicant:
 - a.
 - b.
 - c.
 - d.
5. Complete address:

6. Phone & Fax number:
7. E-Mail ID:
8. Web site (if any):
9. Registration details of the Organization: (Registered under the Company's act/ Society act etc.)
10. Number of years of experience in collection of Surveyed data:
11. Date of validity of Trade Licence (From the state of West Bengal only):
12. Average Annual turnover of the Organization for the last five financial years (Average of any three year during the last five year ending March 2025).
13. Make and model of the instruments used for collection of Surveyed data (As per Sl. No. 1, for which this application is being made):
14. Man Power of the organisation (Mention the date of appointment and EPF registration number of each employee).
 - a. Engineer (Minimum Qualification is Graduation in any branch of engineering from any recognised institute).
 - b. Surveyor (Minimum Qualification is Diploma in Civil Engineering / Surveying or equivalent).
 - c. Other Technical Staff
 - d. Total
15. Experience in surveying work (in years) of each Engineer, Surveyor or Other Technical staff. (Experience certificate from any gazetted or Group A officer for one or more works is to be produced, which were undertaken in the past five years in any Govt. organisation).
16. Completion Certificate of all works executed during the last five years (As per Sl. No. 1, for which this application is being made).

(All the documents in support of this application must be uploaded in the specified space of NIC.).

[Signature]

Dated this day of....., 2025

In the capacity of [Position]

Duly authorized to sign this document for and on behalf of [Name of Firm].

(DIGITAL SIGNATURE OF BIDDER)

[On the letter head of the Organization]

Annexure II

From [Name of Firms]

[Address of Firms]

Date: [insert date], 2025

To

The Director,
River Research Institute,
Irrigation & Waterways Directorate, GoWB,
Mohanpur, Nadia, pin-741246
e-mail: rri.wbiwd@gmail.com

Declaration

This is to confirm that no litigation is pending on date and no penal measures were taken against the Organization or their CEOs/Partners/managers under applicable Acts and laws’.

[Signature]

Dated this day of....., 2025

In the capacity of [Position]

Duly authorized to sign this document for and on behalf of [Name of Firm].

(DIGITAL SIGNATURE OF BIDDER)

[On letterhead of the Organisation]

Annexure III

(Format for Undertaking regarding compliance with Terms of Service)

From [Name of Firms]

[Address of Firms]

Date: [insert date], 2025

To

The Director,
River Research Institute,
Irrigation & Waterways Directorate, GoWB,
Mohanpur, Nadia, pin-741246
e-mail: rri.wbiwd@gmail.com

Dear Sir,

Sub: Undertaking Regarding Compliance with Terms of Service.

I, [insert name] designated as [insert designated title] of [insert name of the Firm] at [insert location of business] and being the authorized signatory of the Firm, do hereby declare and undertake that I have read the EOI Documents for empanelment for the work of “EMPANELMENT OF SURVEY AGENCIES FOR UNDERTAKING VARIOUS SURVEY UNDER IRRIGATION & WATERWAYS DEPARTMENT, GOVERNMENT OF WEST BENGAL FOR COLLECTION, ANALYSIS AND STORING OF VARIOUS DATA (RELATED TO HYDROGRAPHIC SURVEYS) FOR RIVERS, KHALS CANALS, CREEKS, CHANNELS, DAM, RESERVIORS, WATERBODIES, ETC. FOR 3 (THREE) YEARS.”

I hereby undertake and explicitly agree that if we are empanelled as a successful Firm, we shall adhere to and comply with the terms of the Service as set out in the EOI Documents and the Contract.

[Signature]

Dated this day of , 2025

In the capacity of [Position]

Duly authorized to sign this document for and on behalf of [Name of Firm]

(DIGITAL SIGNATURE OF BIDDER)

[On letterhead of the Firms]

Annexure IV

(Format for Undertaking regarding use of qualified Manpower for the Service)

From [Name of Firms]

[Address of Firms]

Date: [insert date], 2025

To

The Director,
River Research Institute,
Irrigation & Waterways Directorate, GoWB,
Mohanpur, Nadia, pin-741246
e-mail: rri.wbiwd@gmail.com

Dear Sir,

Sub: Undertaking Regarding use of qualified Manpower for the Service.

I, [insert name] designated as [insert designated title] of [insert name of Organisation] at [insert location of business] and being the authorized signatory of the Firms, do hereby declare and undertake that I have read the EOI Documents for empanelment of the work of “EMPANELMENT OF SURVEY AGENCIES FOR UNDERTAKING VARIOUS SURVEY UNDER IRRIGATION & WATERWAYS DEPARTMENT, GOVERNMENT OF WEST BENGAL FOR COLLECTION, ANALYSIS AND STORING OF VARIOUS DATA (RELATED TO HYDROGRAPHIC SURVEYS) FOR RIVERS, KHALS CANALS, CREEKS, CHANNELS, DAM, RESERVIORS, WATERBODIES, ETC. FOR 3 (THREE) YEARS.

I hereby undertake and explicitly agree that if we are selected as a successful Firm, we shall only appoint those manpower that meet the criteria specified in the EOI Documents.

[Signature]

Dated this day of, 2025.

In the capacity of [Position]

Duly authorized to sign this document for and on behalf of [Name of Firms].

(DIGITAL SIGNATURE OF BIDDER)

[On letterhead of the Firms]

Annexure V (Form – 2 of 2911)

(Format for undertaking Declaration against Common Interest)

From [Name of Firms]

[Address of Firms]

Date: [insert date], 2025

To

The Director,
River Research Institute,
Irrigation & Waterways Directorate, GoWB,
Mohanpur, Nadia, pin-741246
e-mail: rri.wbiwd@gmail.com

Dear Sir,

Sub: Declaration against common interest.

I/We, Sri/Smt. _____, the authorized signatory on behalf of do hereby affirm that I/We/any of the member of..... bidding for the EOI do not have any common interest either as a partner in any other partnership firm /consortium/Joint Venture or as Proprietor / Principal Share Holder of any other Firm/Company in the same serial for the work I / we want to participate.

Dated this _____ day of _____ 20__

Full name of Bidder / Contractor: _____

Authorised Signatory: _____

In the capacity of: _____

Duly authorized to sign bid

for & on behalf of (Name of Firm): _____

(In block Capital letters or typed)

Office address with seal:

Telephone no(s) (office): _____

Mobile No: _____

Fax No: _____

E mail ID: _____

*In case of Joint Venture & Consortium the Lead Member to submit this format.

(DIGITAL SIGNATURE OF BIDDER)

[On letterhead of the Firms]

Annexure VI (Form – 4 of 2911)

(Declaration on antecedents and performance)

From [Name of Firms]

[Address of Firms]

Date: [insert date], 2025

To

The Director,
 River Research Institute,
 Irrigation & Waterways Directorate, GoWB,
 Mohanpur, Nadia, pin-741246
 e-mail: rri.wbiwd@gmail.com

Dear Sir,

I/We, Sri/Smt. _____, the authorized signatory on behalf of do hereby affirm that I/We/any of the member of..... bidding against EOI are not black listed suspended or debarred from participation in State Government procurements and tenders in the Irrigation & Waterways Directorate, Government of West Bengal, other Departments of the State Government and Government of India on the date of publication of this Notice Inviting Tender (NIT).

If at a later stage this submission (undertaking) is found incorrect, the bidder company along with all its constituent members/owners/partners would be liable to penal actions as decided by the Government under the law.

Dated this _____ day of _____ 20__

Full name of Bidder / Contractor: _____

Authorised Signatory: _____

In the capacity of: _____

Duly authorized to sign bid

for & on behalf of (Name of Firm): _____

(In block Capital letters or typed)

Office address with seal:

Telephone no(s) (office): _____

Mobile No: _____

Fax No: _____

E mail ID: _____

(DIGITAL SIGNATURE OF BIDDER)

Memo No: 899/1(13)**Date: 26.06.2025**

Copy for information & wide Circulation to the:-

1. The Chief Engineer (D & R), I & W Directorate, Govt. of WB, Jalasampad Bhawan, Salt Lake, Kolkata-91.
2. District Magistrate, Nadia.
3. Executive Engineer (SDP), RRI, HCL, Mohanpur, Nadia, WB.
4. Deputy Director (Hyd.), RRI, HCL, Mohanpur, Nadia, WB.
5. Deputy Director (Engg.), RRI, HCL, Mohanpur, Nadia, WB.
6. Sub-Divisional Officer, Sub-Division No.-I, RRI, HCL, Mohanpur, Nadia, WB.
7. Sub-Divisional Officer, Sub-Division No.-II, RRI, HCL, Mohanpur, Nadia, WB.
8. Assistant Engineer/SDP, RRI, HCL, Mohanpur, Nadia, WB.
9. Assistant Engineer/BR, RRI, HCL, Mohanpur, Nadia, WB.
10. Divisional Accountant, R.R.I., HCL, Nadia.
11. Divisional Estimator, R.R.I., HCL, Nadia.
12. Notice Board, R.R.I., HCL.
13. Office Copy.

SD/-

Director

**River Research Institute, WB
Irrigation & Waterways Directorate
Government of West Bengal**