



भारतीय अन्तर्देशीय जलमार्ग प्राधिकरण
(पोत परिवहन मंत्रालय, भारत सरकार)
INLAND WATERWAYS AUTHORITY OF INDIA
(Ministry of Shipping, Govt. of India)

Head Office: A-13, Sector -1, NOIDA, Distt. Gautam Budh Nagar - 201 301 (U.P.)

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A. NOTICE INVITING QUOTATION
NIQ No. IWAI/HY/NW-5/RKL/2014/1

Inland Waterways Authority of India (IWAI), Noida invites quotation from listed Contractors (at NIQ page 11 of 11) for undertaking the following survey works:

SL#	Description of Works	Estimated Cost (Rs. in lakh)	EMD (in Rs.)	NIQ document cost (Rs.)
1.	Detailed bathymetric survey in Brahmani/Koel river (194.5 Kms) from Samal Barrage to Rourkela	7.94	16,000/-	500/-

B. TERMS & CONDITIONS

1. Notice Inviting Quotation (NIQ) document will be available for download w.e.f. **18.11.2014 to 27.11.2014**. The completed bids as per terms and conditions mentioned in the tender document should be submitted to the office of **Hydrographic Chief, A-13, Sector -1, NOIDA, Distt. Gautam Budh Nagar - 201 301 (U.P.)** latest by **1200 hrs on 27.11.2014** and shall be opened on the same day at **1230 hours**.
2. Listed bidders may download NIQ document online from the IWAI's website "www.iwai.nic.in" and are advised by paying **Rs. 500/- (Rupees Five hundred only)** in the form of Demand Draft. The demand draft should be drawn from any nationalized bank in favour of "IWAI Fund" payable at Noida. The Demand Draft submitted for NIQ document shall be non refundable.
3. The bidder shall submit Earnest Money Deposit for an amount of **Rs. 16,000/- (Rupees Sixteen thousand only)** in the form of demand draft along with quotation. The demand draft should be drawn from any nationalized bank in favour of "IWAI Fund" payable at Noida.
4. The bidder should be conversant with the similar work and should submit credential for similar works carried out by them.
5. IWAI reserves the right to accept or reject any or all tenders without assigning any reason and no correspondence shall be entertained in this regard.

SUBMISSION OF BID

Bid should be submitted in two covers viz. separate sealed Envelope-1 (Technical bid) and Envelope-2 (Price bid).

The first cover/envelope containing Part-1 (Technical bid) shall be submitted along with the following documents:-

1. NIQ document cost (Demand Draft in favour of IWAI fund payable at Noida).
2. Earnest Money Deposit (Demand Draft in favour of IWAI fund payable at Noida).
3. Latest certificate of solvency from nationalized / scheduled Bank included in the second schedule of the RBI Act for not less than the value Rs. 3.2 lakhs.

4. Declaration that Bidder(s) have not been banned or de-listed by any Govt. or quasi Govt. agency or Public Sector Undertaking.
5. Downloaded NIQ document duly filled in and completed in all respects, signed with rubber seal on each page as a proof of acceptance of all the terms and condition of NIQ herein floated by IWAI.
6. Copy of Bidders Registration Certificate.
7. Copy of document in respect of PAN, service tax, VAT number.
8. Copy of audit report / balance Sheet for the last three financial years.
9. Copies of similar work orders and performance certificates / job completion certificates issued by the client during the past 7years, for evaluation of financial & technical capabilities of the bidders. Supply orders and performance certificates / job completion certificates shall be in the name of bidder only clearly indicating the value of work.

Experience of having successfully completed similar works (Bathymetric survey in any area) during last 7 years ending last day of month previous to the one in which this NIQ is invited should be either of following:

- (i) Three similar works **each** costing not less than Rs. 3.2 Lakhs; **or**
- (ii) Two similar works **each** costing not less than Rs. 4 Lakhs; **or**
- (iii) One similar work costing not less than Rs. 6.4 Lakhs.

C. TECHNICAL & SPECIAL CONDITIONS

1. OBJECTIVES:

The objective of the contract is to conduct **detailed bathymetric survey in Brahmani/Koel river (194.5 Kms) from Samal Barrage to Rourkela**, for assessment of river training works and further development cost for eco-friendly navigation.

2. Terms of Reference (ToR) for undertaking detailed bathymetric survey in Brahmani/Koel river (194.5 Kms) from Samal Barrage 21 04 26.18 N 085 07 53.18 E to rail bridge at 22 16 2 N 084 48 8 E Rourkela.

The Scope of work shall cover all technical aspects of bathymetric survey at par with International Standards including the following for development of the river for inland navigation:-

The detailed bathymetric survey is to be carried out by using Automated Hydrographic Survey System (using digital Echo sounder for depth measurement, DGPS Beacons Receivers for position fixing and Hypackmax or equivalent software for data logging). The survey is to be conducted in WGS'84 datum.

The horizontal control is to be made from either one of the following methods:-

- i. Transfer of positions from GTS Bench Marks or position established at bridges, barrages, Railway Stations etc.
- ii. Using RTK GPS with minimum 24 hours observations at some permanent platform/base.
- iii. DGPS receiving direct Satellite corrections or receiving DGPS corrections from Beacons.
- iv. IWAI is already having permanent Bench Mark Pillar at Samal Barrage and that can further be used for fixing of positions.

The vertical control is to be established with respect to the chart datum / sounding datum from the following methods:-

- i. Chart datum/ sounding datum already established by Central Water Commission/

- State Irrigation Department and at their gauge stations along the river.
- ii. IWAI is already having permanent Bench Mark Pillars at Samal Barrage and that can further be used for fixing of datums.
 - iii. CWC is having permanent gauges at Rengali, Gomlai and Panposh. Erect the gauges near CWC gauges, level them w.r.t. MSL, erect intermediate gauges at 10km interval, read simultaneous reading at three gauges (two near CWC gauge and one intermediate), interpolate the reading w.r.t. distance and height and fix the MSL value at intermediate gauge. IWAI will provide the calculation formula for calculation.

Other Terms of Reference for the survey work shall be as given below: -

WATER LEVEL GAUGES

- a. Water level gauges are to be erected at every 10 km interval along the river. Readings are to be taken at 1 hr interval for 12 hours (6 AM to 6 PM) or for the entire period of survey. The gauges are to be connected to a nearest Bench Mark by leveling and its datum value shall be established w.r.to MSL & CD. Water level gauges are to be installed temporarily during the survey period.
- b. At least 2 gauges (one U/s and one D/s at 10 Km apart) shall be read simultaneously and soundings to be carried out within the gauge stations. Soundings are to be reduced for datum of a gauge for 5km length of the canal/river on both side of a gauge.
- c. To assess the ponding limit of Samal Barrage and Rengali Reservoir.

BATHYMETRIC SURVEY

- d. Cross-section sounding lines are to be run from bank to bank at 200m interval to identify the navigable channel.
- e. Continuous soundings are to be taken by running the sounding boat at constant speed on the cross-section so as to get smooth contours. Intermediate line is to be run at bends, if the line spacing is more than the specified above.
- f. Bathymetric survey in Rengali Reservoir is to be conducted for 500m width only.
- g. ***The survey area consists of different dimensions. Hence, a standard width cannot be specified. Bidder has to inspect the area to be surveyed and satisfy themselves with respect to site conditions before submission of bid. Line km in the BOQ caters approximate bathymetric survey. However, variation in quantity is $\pm 10\%$.***
- h. The soundings are to be reduced to the chart datum/ sounding datum established at every gauge stations.

CURRENT VELOCITY AND DISCHARGE MEASUREMENT

- i. The current velocity and discharge at every 10 km interval shall be observed once in a day during the survey period. Current velocity and discharge at every 10 km interval are to be measured only once at different depths while carrying out survey in that region.
- j. Current meter measurement should be taken at depth surface, 0.5d, 0.3d and d (d-measured depth of water) & values indicated in the report along with position.
- k. Measurements at different depths may be taken by single equipment over three different time spans.
- l. Measurement of current velocity at different depth is to be measured for at least 15 minutes or as per listed calibration period of the equipment, under use for this project.
- m. Current velocity and discharge can also be measured with the help of ADCP during survey, at every 10km interval.

SURVEY CHART AND REPORT PREPARATION

- n. The survey chart is to be prepared on a scale of 1:5,000.
- o. Contours of 0m, 1m, 1.8m, 3 m, 5m and 10 m are to be indicated on the charts.
- p. On completion of the cross-sections, dredge channel is to be identified/ established by linking deepest soundings on the cross-sections. Dredging quantity is to be estimated for developing a navigational channel of dimension of 32m x 1.8m with side slope of 1:2, w.r.t. chart datum/sounding datum.
- q. Dredging quantity is to be indicated in the report for per km length of the canal/river.
- r. Minimum & maximum reduced depth and length of shoal for per km length of the river is also to be indicated in the report.
- s. Current meter measurement values shall be indicated in the report along with position.
- t. Photographs of the prominent features are to be taken and included in the report along with its position. Photographs are also to be taken for rocky outcrops, rapids and other navigational impediments.
- u. Shallow patches /shoal and submerged sand-chur having less than 1.0 m depth, rocky outcrops, rapids and other navigational impediments are to be indicated on the charts.
- v. **All prominent features (Dam, Barrages, locks, bridges, aqueducts, survey pillars if available etc) and other conspicuous objects are to be fixed and indicated on the chart and included in the report.**
- w. **Identify cross structures which are obstructing navigation.**
- x. **Details (horizontal and vertical clearances above High Flood Level) of bridges, aqueducts, electric lines, telephone lines, pipe lines, cables en-route are to be collected and indicated on the chart and also included in the report along with their co-ordinates and location.**
- y. **A brief write up on condition of the Dam, Barrages, locks (if available) are also to be included in the report.**
- z. Details of water intake/ structures are to be collected and shown on the charts and include in the report.
- aa. Availability of berthing place, existing jetty, ferry ghats, approach roads etc. are to be indicated on the charts and include in the report.
- bb. Conditions of the banks, whether protected or unprotected shall be indicated on the chart and include in the report.
- cc. The chart shall also be suitably updated with prominent land features from the Topo-sheets/site.

DATA SUBMISSION

- dd. All raw data and processed data of Automatic Hydrographic Survey System are required to be submitted along with bills and reports.
- ee. All surveyed field data.
- ff. Two copies of the draft survey chart and report (hard & soft copies both) shall be submitted within 45 days period of completion of field survey work.
- gg. Five copies of the final survey charts & reports (hard & soft copies both) shall be submitted within 30 days period after communicated modification/comments on draft report / charts, by IWAI.
- hh. The soundings are to be reduced to the chart datum/ sounding datum established at every gauge stations. **However, soft copy of the PROJECT data (RAW, EDIT, SORT, TIDE and Contours) are to be submitted with un-reduced and reduced soundings. Further, out of two sets of draft survey charts and five sets of final survey charts (both soft & hard copy), one set is to be submitted with un-reduced soundings.**

3. Survey equipment :

Contractor to mobilize the required survey vessels / boat and equipment at survey site, required for carrying out bathymetric survey as per **TECHNICAL & SPECIAL CONDITIONS**, such as:

- i. Suitable survey VESSEL / boat with minimum draft. It is advisable to use inflatable boat in shallow areas.
- ii. The Digital echo sounders with necessary spares and consumables.
- iii. Survey instruments such as DGPS receiver (any company DGPS with sub-meter accuracy), Computer compatible & loaded with suitable Hydrographic Survey Software like HYPACK MAX or equivalent Software, Plotters, Total Stations (1mm accuracy) and levels for establishing proper ground control. The Automatic Hydrographic survey system should have on-line & off-line processing/recording facilities.
- iv. Suitable current meters for current observations
- v. Qualified team of surveyors and other supporting staff. Land Survey team: Minimum qualification - ITI (survey) / Diploma in Civil / SR-II (Survey Recorder Grade-II, Indian Navy). Bathymetric Survey: Minimum qualification - Diploma in Civil with 3 years Hydrographic survey experience or SR-II.

4. SPECIFICATIONS

4.1. Vessels / Boat

- a) Contractor is free to deploy any vessel / boat suitable for bathymetric surveys, subject to safety of personnel & equipment. It is advisable to use inflatable boat for shallow depths.

4.2. Echo Sounder

- a) Can be a single/dual frequency type standard dry/thermal paper recording system with a range up to 60 mtr and sufficient resolution.
- b) The contractor should provide adequate backup power, spares and recording papers and other consumables for uninterrupted survey operations.
- c) Digital echo sounder with recording paper roll (for Bar Check only) is required to be used. Bar check is to be carried out before start and end of survey. Necessary corrections in soundings are to be applied, if any.

4.3. Position Fixing

The position fixing should be done by using differential global positioning system not less than 12 channel receivers for sub-metre accuracy.

4.4. Current Meter

Contractor may use either Acoustic based (ADCP) or Impeller based Current Meter. Calibration certificate - From any certified agency like CWPRS, Pune or OEM test certificate would suffice.

4.5. Computer and Hydrography Survey Software

Suitable computer compatible & loaded with the automatic hydrographic survey software like HYPACK MAX or equivalent software is to be used for the survey purpose. All other computer Peripherals like color Plotter, Printer etc. to be used for generating out puts.

Contractor may use Hydaspro / HypackMax or equivalent software. However, data is to be submitted to IWAI in HypackMax format (RAW data, Edit data, Sort data, Planned lines, etc.). Drawings are to be submitted in DWG format of AutoCAD.

5. TIME SCHEDULE

The time schedule of execution of the entire assignment will be as follows:

- i) Zero date of this project will be taken as date of issue of work order.
- ii) The contractor should complete mobilization of equipment and manpower complete within 15 days from zero date.
- iii) The actual river survey work should commence within 20 days from zero date.
- iv) The actual survey work should be completed within 20 days (twenty days) after commencement of work.
- v) Two copies of the draft survey chart and report (hard & soft copies both) shall be submitted within 30 days period of completion of field survey work.
- vi) Five copies of the final survey charts & reports (hard & soft copies both) shall be submitted within 30 days period after communicated modification/comments on draft report / charts, by IWAI.

Note: LD clause will be applicable on above Time Schedule.

6. FINAL REPORTS

The draft report shall be submitted on completion of field survey. After getting the comments of IWAI, the final report will be presented including the description of equipment used, methodology survey accuracy checks etc., as per the TOR.

- i) The final sounding charts & reports as per ToR – Five (05) nos.
- ii) All raw data and processed data of AHS system are required to be submitted along with final charts in DVDs – Five (05) nos.

7.0 SPECIAL CONDITIONS

7.1 The contractor will study the requirements of the survey operations as explained in earlier sections and will take total responsibility for mobilizing all the survey equipments, vessels and the requisite personal and complete the surveys as required within the stipulated time.

7.2 In order to avoid serious time lag between field survey and submission of final survey charts/drawing the contractor is expected to setup a base office at a suitable town where periodically the field data collected are brought and plotting works are carried out. This is also expected to help the contractor to fulfill the gaps in information before finalisation.

7.3 The contractor will provide free access to the Engineer - in charge who will inspect and verify the data during the field work stage itself. Any correction pointed out should be carried out and information's as required should be provided without any undue delay. These contracts do not provide for any down time of equipment or boat hence the contractor should insure that these are avoided if not kept at minimum. The contractor has to arrange transport vehicle, boat for Engineer-in-Charge / representative visit at site.

7.4 IWAI will not accept any liability towards loss damage of any equipment vessel/survey equipment or any other type of loss, during the course of execution of contract. The contractor shall be responsible for paying all wharfage or other local charges.

7.5 Measurement shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the Contractor or his authorised representative. The Contractor shall, without extra charge, provide assistance with every appliance, labour and other things necessary for measurement.

In case, if the quantity exceeds the awarded quantity, the Contractor shall inform to the Engineer-in-Charge or his authorized representative before completion of the awarded quantity and seek prior approval before undertaking such extra work. The Engineer-in-Charge or his authorized representative will examine such work as per agreement clauses. The limit of variation of work is $\pm 10\%$.

7.6 Details of Bench Marks, Satellite Imageries, Toposheets, previous available reports/data will be supplied by IWAI, with required undertaking. An introductory letter will be issued by IWAI to the successful bidder for collecting other information from State / Central Government.

7.7 The prices shall include all the taxes, levies cess, octroi, excise, service tax or any other local or central taxes as applicable/ charged by Center or State Government. No extra in this regard shall be paid.

7.8 No forms regarding sales tax, trade tax or any other exemption, etc. will be supplied by IWAI. However, department would assist to the contractor for arranging these documents at contractors cost by writing to the concerned authorities only. Supply or arrangement of these forms, if required, shall be responsibility of the contractor.

7.9 All arrangements for establishment, watch & ward of stores and security of sites, permits, license, appropriate vehicles for transportation, handling, etc. shall have to be made by the contractor at his own cost and nothing extra on this account shall be paid.

D. PAYMENT ON ACCOUNT

The contractor shall receive, as fees for all services and expenses required for carrying out detailed hydrographic survey in the respective stretches and submission of charts and reports in the following installments:

i) On submission of preliminary charts & survey report after completion of 100% field works	60%
ii) On submission of Draft Report	15%
iii) On submission of Final Report	15%
iv) On Acceptance of Final Report	10%

E. GENERAL CONDITIONS

1. SECURITY DEPOSIT

1.1 The successful bidder EMD will be converted in to security deposit (SD) and the successful bidder has to remit balance amount of Security Deposit Balance Security Deposit (i.e. Total 5% Security Deposit deducting EMD submitted with technical bid) in the form of Demand Draft. Bank guarantee will not be accepted as security deposit.

1.2 The total performance guarantee/security deposit shall remain with IWAI till defect liability period after satisfactory completion of work.

1.3 Interest will not be paid on security deposit or performance guarantee.

1.4 PERFORMANCE GURANTEE: The contractor shall be required to deposit an amount equal to 5% of the tendered value of the work as performance guarantee in the form of either demand draft payable at any nationalized/schedule bank **OR** an irrevocable bank guarantee bond of any scheduled bank or State Bank of India in accordance with the form prescribed within 15 days of the issue of the work order. The successful bidder has to remit 5% of contract value for security deposit after

adjusting EMD and the security deposit shall remain with IWAI till expiry of renewal period.

2. LIQUIDATED DAMAGES

If the contractor fails to complete all items of works within the period(s) of completion as stipulated in the aforesaid tender or any extended period (not due to the fault of the contractor) as may be agreed he shall without prejudice to any other right or remedy of the Authority on account of such default, pay compensation (not by way of penalty) at the rate of $\frac{1}{2}$ % (half percent) per week or part of week on the total value of the contract subject to a maximum of 10% of the total value of the contract.

3. IWAI will notify the successful Bidder in writing that the bid has been accepted. The successful Bidder will be required to enter into a contract with the Authority and has to submit Security deposit within 10 days of award of work.
4. Engineer-in-Charge of this project will be Hydrographic Chief, IWAI.

PART – II

9. PRICE BID

BILL OF QUANTITIES

Note: The bidder shall enter a firm price against each item and fill up the table. Prices should be in rupees (in words & figures).

Sl#	Description	Qty.	Unit price per line km (excluding taxes & duties) (Rs)	Service Tax (Rs.)	Unit price per line km (including all taxes & duties) (Rs)	Total Amount (including all taxes & duties) (Rs)
1.	To carry out detailed Bathymetric survey including current meter observations, discharge measurement and water level observation. Mobilisation of survey units, equipment and hiring and running charges of boats, insurance of personnel and equipment. Preparation of charts & reports etc. complete in all respect as per TOR in Brahmani/Koel river (194.5 Kms) from Samal Barrage to Rourkela	294 line km				
	TOTAL (in words)					

Note: - IWAI reserves the right at the time of awards of order to increase the quantity of equipment specified in the price schedule without any change in unit prices or other terms and conditions.

Seal & Signature of the Bidder



NIQ issued to the following firms:-

1. M/s Land and Coast, Prime Corner, 6,7,8, Plot No. 109 B&C, Sector-50 (New), Sea Woods, Nerul (west), Navi Mumbai-400076; E-mail: land_coast@yahoo.com, landandcoast@gmail.com
2. M/s Precision Survey Consultancy, P.O.- Salap (Jatin Xerox Center), P.S.-Domjur, Howrah-711409; E-mail survey_consultancy@yahoo.co.in, precisionsurveyconsultancy10@gmail.com, mail2palas@gmail.com
3. M/s IIC Technologies Limited, 8-2-350/5/B-22, Road No.3, Banjara Hills, Hyderabad-500034; E-mail: somnath.marthi@iictechnologies.com
4. M/s Pramitee Engineering and Surveys Pvt. Ltd., 18, 2nd Floor, Crystal Plaza, Hiranandani Complex, Sector-07, Kharghar, Navi Mumbai – 410210; E-mail: info@pramitee.com
5. M/s New Horizon Surveys (I) Pvt. Ltd., E-24/10, Suryoday, Sector 48, Nerul, Navi Mumbai – 400706; E-mail: newhorizon703@gmail.com
6. M/s Horizon Survey Company India Pvt. Ltd., Plot A-732, M.I.D.C., Khairane, TTC Ind. Area, Thane-Belapur Road, Navi Mumbai-400710; E-mail: enquiries@horizonsurveyindia.in
7. M/s Global Marine Infratech Pvt. Ltd., ND-7, VIP Area, Irc Village, Nayapali, Bhubaneswar – 755015; E-mail: info@gmiindia.in, ashiskantha@gmiindia.in
8. M/s Sea Bird Surveys Pvt. Ltd., D-205, 2nd Floor, Belapur Railway Station Complex, CBD Belapur, Navi Mumbai – 400614; E-mail seabird_surveys@rediffmail.com, seabirdsurvey@gmail.com
9. M/s Coastal Marine Construction & Engineering Ltd., Floor 7, Mira - Bhayandar Road, Mira Road (E), Dist. Thane - 401107, Maharashtra; E-mail info@comacoe.com
10. M/s Strabag India Pvt. Ltd., Southern Park, Unit No.6, 4th Floor, D-2, DDA District Centre, Saket, New Delhi-110017; E-mail info@strabagindia.com, hari@strabagindia.com
11. M/s Sea Eagle Marine Surveys Pvt. Ltd., 202-203 Nerul Commercial Premises Co-op. Soc. Ltd., Aggarwal Corner, Sector-21, Plot-21, Nerul East, Navi Mumbai-400706, Maharashtra; E-mail seaeaglesurveys@gmail.com
12. M/s Xplorer Consultancy Services Pvt. Ltd., Head Office: Plot No.3, First Floor, Sarhaul, (Opp. HIPA, Sec-18), Gurgaon - 122001 (Haryana); E-mail xplorer@explorer.in
13. M/s Fugro Survey (India) Pvt. Ltd., Fugro House, D-222/30, T.T.C. Indl. Area, MIDC Nerul, Navi Mumbai – 400706; E-mail mail@fugro.in
14. M/s RITES Limited., RITES Bhawan, No. 1, Sec-29, Gurgaon-122 001 (Haryana); E-mail info@rites.com
15. M/s NISVO Marine Surveys, Plot No. 18, Meadow Villas Phase-II, CTO Colony 3rd Street Extension, Tambaram West, Chennai-600045; E-mail: projects@nisvo.com
16. M/s Global Surveys, Flat No. 3, Mangal-Krupa, Plot No. 46, Sector-12B, Koperkhairane, Navi Mumbai-400709; Email: globalsurveys_1@yahoo.com, globalsurveys2@gmail.com