



BHAKRA BEAS MANAGEMENT BOARD (BBMB)

Invitation for Expression of Interest **(EOI)**

For

“Investigation and Detection of source location of water leakage in Sundernagar Hydrel Channel at Nagwain Aqueduct Beas Satluj Link Project, Sundernagar”

EOI Notice No. : BSL(P)/EOI/01/2019

Invited by :

Sr. Executive Engineer.
HC & BG Division, BSL (P)
BBMB, Sundernagar

Board Office :

Secretary,

Bhakra Beas management Board

Sector 19-B, Madhya Marg

Chandigarh

Telephone No. : 0172-5011759

BSL Project Office :

Chief Engineer,

BSL Project, Bhakra Beas

Management Board,

Sundernagar – 175019

Distt.- Mandi (Himachal Pradesh)

Telephone No. – 01907-262333



BHAKRA BEAS MANAGEMENT BOARD

BSL Project, BBMB Sundernagar
Distt.- Mandi (Himachal Pradesh)
Pin Code- 175019
Telephone No : 01907-262233
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Expression of Interest (EOI) Notice No. : BSLP)/EOI/01/2019

Bhakra Beas management Board, a trend setter Organisation in Water Resources and Power Sector under the Ministry of Power, Govt. of India invites Expression of Interest (EOI) from reputed and established Consultancy Firms/Individual Consultants meeting the evaluation criteria as detailed on BBMB website : www.bbmb.gov.in for shortlisting to participate in tender for **“Investigation and Detection of source location of water leakage in Sundernagar Hydel Channel at Nagwain Aqueduct of BSL Project Sundernagar”**.

For Further details regarding problem of leakage, location of work, scope of work and its Time schedule for completion etc., please visit the BBMB website.

Interested parties may submit their EOI with requisite details as per format/ details provided in the website upto 3:00 PM on 28th may 2019 through Registered post/ Hand delivery in a sealed envelope super scribing the EOI reference no. : BSL (P)/EOI/01/2019 and Applicant name/Address on the envelope to :

**Sr. Executive Engineer,
HC & BG Division, BSL (P)
BBMB, Sundernagar -175019
Distt. – Mandi (Himachal Pradesh)**
Contacts : Tel.: 01907-262233
E-mail : xenhcbdsnr@bbmb.nic.in

Visit to the work site is a pre requisite for the interested parties before submission of the EOI. EOI of the participant without the site visit shall not be entertained. EOI submitted by the firms will not act as a binding on the department and can be rejected without assigning any reasons.

The documents so received will be opened **on the same day at 3:30 PM in the Office of Sr. Executive Engineer, HC & BG Division, BBMB Sundernagar** in the presence of authorised representative of the Firm who actually submitted the EOIs. In case the date of opening of EOIs falls on a holiday subsequently declared on that date, the EOIs will be opened on next working day following the holiday .EOI documents received later than the date & time stipulated above shall not be accepted. ***Prospective parties against this EOI are also requested to regularly visit this website for updation.***



BHAKRA BEAS MANAGEMENT BOARD

EXPRESSION OF INTEREST (EOI)

“Investigation and detection of source location of water leakage in Sundernagar Hydel channel at Nagwain aqueduct of Beas Satluj link Project Sundernagar.

General Description of BSL Project

The Beas Satluj Link, which constitutes Unit I of the Beas Project, It comprises an earth-cum-rock-fill dam at Pandoh across River Beas, a spillway, a water conductor system to link River Beas with River Satluj through two long tunnels ,a channel, and a power house at Slapper at the down-stream end of the system.

Pandoh Dam

Pandoh Dam is a diversion dam and is located 21 km from Mandi town (Himachal Pradesh) on the Mandi-Kulu road. It has a composite section of earth & rockfill. The dam is about 61 m (200 ft) high above the river bed level & 76 m (250 ft) above the deepest foundation level. The length of the dam at the crest is about 255 m (836 ft) with a crest width of 12.2 m (40 ft) .

Pandoh Baggi Tunnel and Appurtment Works

The Pandoh Baggi Tunnel of 7.62 m (25 ft) finished diameter, has been provided to carry River Beas waters (upto 254.85 cumecs) over a distance of about 13 km to the Sundernagar Hydel Channel. Near its upstream end, a high-crested fore-bay type intake has been provided to feed the tunnel. The tunnel entrance is located in a deep pit, formed by 79.15 m (259 ft 8 in) long crest structure on the river side and high peripheral walls on the other three sides. The crest structure, having a stepped sill with elevation varying from El 879.96 m (2887 ft) to 880.57 m (2889 ft).

Sundernagar Hydel Channel and Appurtenant Works

The channel, which is 11.80 km long, takes off from Baggi Control works and outfalls into Sundernagar Balancing Reservoir. The discharge capacity of the channel has been kept as 254.85 cumecs in the head reach up to silt ejector and 233.62 cumecs thereafter. The channel with a bed width of 9.45 m, depth 6.26/5.85 m, side slope 1.5 H : 1.0V and water surface slope of 1 in 6666. Seventeen cross drainage works, comprising 16 aqueducts and one superpassage, have been provided for nallahs crossing the hydel channel. There are 15 bridges on the channel (including one A.R. bridge on Baggi By-pass junction) two A.R., one D.R., six V.R. and six foot bridges. In addition the piers of the tail control structure have been provided with R.C.C. decking (designed for class AA/70-R loading). Four bathing ghats have been provided in cutting reaches of the channel for the facility of inhabitants of nearby villages.

Un-reinforced concrete lining has been provided throughout the length of channel, except over cross drainage works and special reaches where reinforced concrete lining has been adopted so that there may be uniform settlement. Ample quantities of coarse and fine aggregates, available in the natural form in the local khads, have been utilized for the concrete lining. In order to reduce the strain of rapid and frequent draw-downs in the hydel channel, provision of two layers of filter blanket behind the lining (connected with a net work of longitudinal and cross-drains) have been provided with pressure release valves in the bed.

Salient Features of Sundernagar Hydel Channel

Sundernagar Hydel Channel	
Length of Hydel Channel	11.80 Km
No. Cross drainage works	17 (01 no. super passage & 16 no. aqueducts)
Width of channel at bottom	31 ft
F.S.L depth	20.53 ft to 19.54 ft
Free Board	4 ft to 3 ft
Side slope (inner side)	1.5:1
Width of Channel at top	112 ft
Perimeter of Channel	126.14 ft
Max. Discharge capacity	9000 Cusecs upto Silt Ejector and 8500 Cusecs d/s of Silt Ejector
Bed slope	0.15% (1 in 6666)
Max. flow velocity	6.05 ft/sec
Channel side and bed lining	Cement concrete lining laid in panels
Size of C.C panels in Bed	4.57 m x 4.724 m (thickness = 102 mm)
Size of C.C Panels in sides	4.57 m x 4.57 m (thickness = 125 mm)
No. of Long joints	7 Nos. (2 Nos. on each side and 3 Nos. in Bed)

Description of Leakage problem:

Nagwain aqueduct is provided at RD 9724 Mtr. of Sundernagar Hydel Channel having barrel size 2.70 m x 2.10 mtr. There is a continuous leakage of water through the construction joint of barrel with almost 25-30 ltr/min since year 2010. Water flow sound is observed clearly behind the right side wall of the aqueduct. Earlier various studies and investigations have been carried out to ascertain the source of this leakage water. Last study and investigation for finding out the source of leakage water through wall joints in Nagwain aqueduct was conducted by Department of Earth Sciences, IIT Roorkee during the year 2017-18. This was done by isotropic finger printing of different available sources of water at the site and by Electrical Resistivity Tomography (ERT) survey of the problem area. In this report submitted by IIT, Roorkee, it has been ascertained and concluded that leakage water through wall joints of Nagwain aqueduct is hydel Channel

water. Since it has been established that water leakage through wall joints of aqueduct is from hydel channel, it becomes imperative to detect the location source of leakage in the channel portion at Nagwain Aqueduct.

Area and Location

- Nagwain aqueduct site is located at RD 9742 M on Sundernagar Hydel channel of Beas Satluj Link Project. This is approx. 3.0 km from Sundernagar town of Mandi District of Himachal Pradesh. The area is approachable from Chandigarh-Manali NH-21 and is well connected with main town of Sundernagar.
- Interested parties are requested to visit the site for getting an onsite overview of the leakage/seepage problem from Sundernagar Hydel channel. Required technical details and drawings for this purpose will be provided by the department.
- Perimeter of lined portion of Sundernagar hydel channel is approx. 126 ft and there are total 07 number longitudinal construction joints in total perimeter length i.e. 02 number on each sides and 03 number in bed. Transverse construction joints along the length of channel are as per size of C.C panels on the sides and bed of the channel.
- The whole process of investigation shall be done in running canal condition discharge flow, turbidity of water and velocity of flow in the channel shall be as per prevailing running conditions of the canal. Turbidity in canal water is minimum during winter season and maximum during monsoon season.

➤ **Scope of Work**

- To ascertain the location source of leakage in canal portion at Nagwain aqueduct which further would be specifically concluded with finding of exact location of leakage points in the canal portion.
- Submission of detailed technical proposal material, equipment and methodology to be used in detection of leakage in canal portion at Nagwain aqueduct.
- Tecno-economically feasible and acceptable engineering solutions for the plugging of identified leakage source locations in Sundernagar Hydel channel to be given by the Firm.

➤ **Evaluation Criteria**

Consultants/Firms who fulfill the following criteria shall be considered for participation:

Technical

The Consultant should have experience in identification and rectification of such leakages in running canals in the last 5 (Five) years to be reckoned from the last date of submission of EOI. Copies of the letter of intent (LOI) and Completion certificate issued by the appointing authority shall have to be submitted. Experience profile of the Consultant/Firm shall be submitted with EOI in Form "A" (**Annexure - I**) along with relevant documents as proof of his experience of similar nature works.

Financial

- a) Annual Financial Turnover of the Consultancy Firms/Individual Consultants during any of preceding three financial /accounting years from the last date of submission of EOI should be submitted in Form "B" (**Annexure - II**). Annual average financial turnover of the Consultancy Firms/Individual Consultants shall not be less than Rs. 200 Lakh during the last three years.
- b) Net worth of the Consultancy Firms/Individual Consultants must be positive for preceding financial/accounting year.

Note:-

For proof of Annual Turnover & Net worth any one of the following documents must be submitted along with the bid:-

A) Certificate issued by a practicing Chartered/ Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed.

or

Audited Balance Sheet along with Profit & Loss account.

B) The Consultancy Firms/Individual Consultants should have PAN, GST Registration number and submit the copies of the relevant along with the EOI.

General Detail

The Consultancy Firms/Individual Consultants shall submit the complete detail of his Firm/Individual in the Form "C" (annexure III)

Annexure-I

Form "A"

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Details of similar nature of assignment completed during the last five years to be reckoned from the E.O.I publishing date

Sr. No.	Description	1	2	3
1	Name of assignment/Project and location.			
2	Name & Address of Employer/ Organization, Telephone No. of officer to whom reference may be made.			
3	Cost of consultancy charges in Rs Lakhs (Attach copy of letter of Intent and Performance Report)			

4	Date of commencement as per contract.			
5	Stipulated date of completion			
6	Actual date of completion			
7	Names of Project in charge & key staff & Nos. of staff involves.			
8	Completion Certificate issue by the appointing department/authority)			

Annexure -II

FORM –‘B’

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Audited annual turnover reports for last three (3) years

YEAR	GROSS TURNOVER (INR)	NET PROFIT (INR)
2016-17		
2017-18		

2018-19		

FORM –‘C’

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Detailed information of consultancy firms/individual consultants

1	Name & Address of the consultant with Telephone No./Fax No./Email ID	
2	Address of the local office, if any.	
2	Legal status of the applicant	
	a) A proprietary firm	
	b) A firm in partnership	
	c) A limited company or corporation/Joint venture/consortia	
4	Name of the owner(s)/CEO of the firm	
5	Name and designation of individual authorized to act for the organization.	
6	In which field of Consultancy the applicant has specialization.	
7	Any other information considered necessary but not included above.	

