

**Government of Bihar, Water Resources Department,  
Office of the Irrigation Planning & Monitoring Circle  
Sinchai Bhawan, Harding Road, Patna-800015  
National Hydrology Project – Bihar Surface Water Component**

**Request for Expression of Interest  
(Consulting Services-Firms Selection)**

for

**Consultancy Services for Development of Sone Canal Asset Management System for Irrigation Management (Using Online Web Based Monitoring System and GIS Techniques) and as a Decision Support tool**

**E- Procurement**

**India**

**National Hydrology Project**

**Loan No. IBRD Loan 8725-IN**

**Ref No: BIHAR/WRD/Irrigation/NHP-SW/EoI/01/2019-20**

**Dated : 09.01.2020**

Procurement Plan Ref No :NHP-2018-2019 BRSW-601797

1. This Invitation for Bid follows the General Procurement Notice for this Project that appeared in Development Business on 9<sup>th</sup> March 2017.
2. The Government of India has received finance from the World Bank toward the cost of the National Hydrology Project, and intends to apply part of the proceeds for the consulting services.
3. Water Resources Department, Govt. of Bihar, which is implementing agency for Bihar (Surface Water Component), is interested for Development of Sone Canal Asset Management System for Irrigation Management (Using Online Web Based Monitoring System and GIS Techniques) and as a Decision Support tool. The Objective of the consultancy is;

The objective of the consultancy is to develop on line web enabled a comprehensive Canal Asset Management System (CAMS) on GIS Platform for Sone Canal System as decision support tools supported by detailed canal surveys, including visual and scientific inspection of the status of canal, canal protection works and canal alignment works in the Sone Canal System for:

- For monitoring of water flow as per the demand requirement in the canal system with the assessment of irrigated land in the command area.
  - To make the canal system more efficient, responsive to increase the water use efficiency to ensure balanced or optimum utilization per hectare across the command area.
  - Finding, identifying and maintaining their infrastructure asset,
  - Updating and distributing mapped information,
  - Recording & retrieving maintenance information,
  - Identifying & being reminded for future maintenance needs.
  - Feasibility of having a power generation component with mini hydel power schemes with low head turbines and/or Canal Rooftop Solar panels on the existing canal network. Canal Rooftop Solar panels will also be a factor in minimizing evaporation losses in canals.
4. The CAMS would support irrigation management functions including maintenance and strengthening of existing canal and generation of alerts for anticipated irrigation related hazards

by using analytical tools in the CAMS, irrigation management works etc. and planning of new control structures. The development of community participation for canal surveillance in smooth water flow as per the demand requirement of water in the canal system along with the assessment of the irrigated land in the command area and updating canal safety information in the CAMS needs to be implemented. This will also help in collecting the revenue from the farmers on the basis of irrigated land.

5. The general Scope of the CAMS will include the following:

The consultant will work in close coordination with a team comprising of engineers, specialist and subordinate staff posted or deputed in Irrigation Planning & Monitoring Circle, Water Resources Department. The Consultant's services will consist of:

- Obtain all relevant data of Canal and their assets from the concerned offices of Sone Canal System,
- Collect data and information on current maintenance planning and approval process including annual expenditure on physical works, inspection and surveillance processes from relevant offices.
- Prepare inventory of the assets and classification of the assets,
- Assess the desired maintenance plan for the assets,
- Design and develop a GIS-based Canal Asset Management System with user friendly functional modules for various actions involved in canal asset management,
- Prepare and integrate database and management functional modules to the CAMS,
- Develop Users' Manual, Technical Reference and Training Modules,
- Make recommendations for sustainable and effective use of Sone Canal Asset Management System (SCAMS) for optimized cropping pattern in the command area, and
- Provide on-the-job training to field engineers on the development and management of CAMS.

The consultancy services would inter-alia include enterprise database design and planning and providing capacity for spatial and non-spatial analysis. The design of the Enterprise Oracle/ArcGIS geo-database would support WRD's maintenance and inspection works. The consultant would develop standard protocols and formats for field office inspection and reporting.

Data such as legacy and new construction drawings and plans, maintenance reports, inspection reports, operation and maintenance manuals, models, and technical studies would need to be catalogued and linked through the CAMS, allowing users to search documents for specific canal segments. Database management functions would provide alerts and reports. The consultancy would also include the establishment of administrative protocols for data input and editing to provide data integrity and quality control. To support long term management and maintenance of this database, the consultant would develop GIS standards, and a comprehensive data management plan. The consultancy includes the following tasks:-

**Task-1: Review of Current Practices, Data Availability & User Need Survey**

**Task-2: Design of Canal Asset Management System (CAMS)**

**Task-3: Preparation of Database, Management Functional Modules and Integration in CAMS**

**Task-4: Development of Users and Operation Manual and Training:**

**Task-5: Capacity Building and Training:**

Broad Terms of Reference (ToR) is attached with this EoI <http://wrd.bih.nic.in>

6. The Duration of consultancy will be **15 (Fifteen) months**
7. The Superintending Engineer, Irrigation Planning & Monitoring Circle, Patna, Water Resources Department, Government of Bihar now invites eligible consultants to indicate their interest in providing the Consultancy Services for the above assignment. Interested Consultants must provide information indicating that they are qualified to perform the Services (brochures, description of similar assignments in similar conditions, availability of appropriate skills among staff etc.). Consultants may associate with other firms in the form of a joint venture or a sub-consultancy to enhance their qualifications. Number of partners in a JV shall be limited to two including the lead partner
8. The criteria for short listing of the Consulting firms shall be as follows:
  - a) The firms should have been in consulting business for at least 10 years;(Copy of the Certificate of Incorporation or Memorandum of Articles to be enclosed with EoI).
  - b) The firms should have one similar experience in GIS-based Asset management system for Irrigation, Floods and drainage works during the previous assignments. The bidder shall provide information about the organization strength viz. core staff, experience of the firm in similar works, experience in working externally assisted projects, in Govt. Projects, in case of foreign bidders, their experience in working in India etc.
  - c) The firms shall be financially sound with an average annual turnover of minimum INR 50,000,000 (US\$ 694444)during the previous five years (2014-15 to 2018-19).In case of joint venture (JV) the minimum turn-over of lead partner should be 70 % whereas a member in Joint Venture other than lead member, minimum turn-over should be 40% of the required turn over for a firm. This should be clearly stated in the submission.
  - d) Availability of skills among staff (Team Leader, Canal Maintenance cum Data Liaison Expert, System Analyst, Database Specialist, GIS Expert, Software Programmer and Technician) along with qualification and experience i.e. Technical team and expertise available with the organization. The experts having worked in externally assisted Projects would be preferred.
  - e) EoI submitted by the consultant must include introductory letter on letter head explaining how the firm is best to deliver the task, Organization Profile, Annual Audited Financial Statement for the last five years, short note on similar projects implemented by the firm as required for qualifying criteria along with contract details of past clients as evidence of previous experience in similar works. Thus, the EIO should contain sufficient supporting documents to substantiate the claim of the consultant towards their qualification as per the short listing criteria.
9. The attention of interested Consultants is drawn to paragraph 1.9 of the World bank's Guidelines: Selection and Employment of Consultants [Under IBRD Loans and IDA Credits & Grants] by the World Bank Borrowers (Consultant Guidelines), setting forth the World Bank's policy on conflict of interest.
10. A consultant will be selected in accordance with the Quality and Cost Based Selection (QCBS) procedures set out in the World Bank's "*Guidelines: Selection and Employment of Consultants Under IBRD Loans and IDA Credits & Grants by World Bank Borrowers- January, 2011 Revised in July 2014*". The Guidelines are available at [www.worldbank.org/procure](http://www.worldbank.org/procure).
11. Interested Consultants may obtain further information at the address given below from 10.00-17.00 hours (IST) on all working days. This notice for Expression of Interest has also been posted on website <http://wrd.bih.nic.in> and <http://fmis.bih.nic.in/>

12. Expression of Interest with all relevant information and documents must be uploaded on <https://eprocure.gov.in> for “**Consultancy Services for Development of Sone Canal Asset Management System for Irrigation Management (Using Online Web Based Monitoring System and GIS Techniques) and as a Decision Support tool** by not later than 25<sup>th</sup> february’ 2020 time 15.00 hrs Server time. In the event, this last date being declared as holiday by the State Government, due date for submission of above EoI will the next working day up till the same appointed time. **The Expression of Interest received till the appointed time and date shall be opened same day at 15.30 hrs Server time.** The electronic bidding system will not allow any late submission of the REoIs after due date and time as per server time. Physical, Email, Telex, cable or facsimile submission of REoIs will be rejected as non-responsive.

*Narayan*  
9/1/2020

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