



GOVT. OF WEST BENGAL

Irrigation & Waterways Directorate

NATIONAL HYDROLOGY PROJECT

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REQUEST FOR QUOTATION

Procurement of Non-Consulting Services under Shopping Procedures

<u>E-Procurement Notice</u>

(One-Envelope with e-Procurement Bidding Process)

Memo No: 23/NHP-02/02

Date: 07.01.2022

Loan No. : 8725-*IN*

RFQ No. : WBIW/NHP/RFQ-06/2021-22

REFERENCE OF WORK: NHP-2021-2022-WBSW-312085

NAME OF WORK: **Designing Developing and Deploying of Integrated Embankment** Management System for rivers in West Bengal of I&W Dept. Govt. of WB under NHP and subsequent Maintenance of the same for 2 years.

- Employer: Executive Engineer, Burdwan Investigation & Planning Division Irrigation & Waterways Directorate Govt. of West Bengal Purta Bhawan, 3rd Floor Purba Burdwan-713103, West Bengal
- Applicable Procurement Guidelines: World Bank's "Guidelines -Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank's Borrowers" Revised July 2014
- The Government of India has received financing from the World Bank in various currencies towards the cost of the National Hydrology Project and intends to apply part of the proceeds towards eligible payments under the contract for which this request for quotations is issued. The Executive Engineer, Burdwan Investigation & Planning Division, Irrigation & Waterways Directorate, Govt. of West Bengal, Purta Bhawan, 3rd Floor, Purba Burdwan-713103, West Bengal (for and on behalf of Irrigation & Waterways Department, Govt. of West Bengal invites quotations electronically from eligible service providers (bidders) for the following non-consulting services.

Name of the Services	Unit	Quantity	Completion Period
Designing Developing and Deploying of Integrated Embankment Management System for rivers in West Bengal of I&W Department, Govt. of WB under NHP and subsequent maintenance of the same for 2 years.	No	1	6 Months + 2 years Maintenance

- 2. This e-Procurement notice includes the terms and conditions applicable to submission of quotations; criteria for qualification, evaluation, and for award of contract; and relevant forms to be filled by the bidders. Implementing Agency has not issued a separate RFQ document for this purchase. The e-Procurement notice including the terms and conditions etc. can be downloaded free of cost by logging on to the website <u>https://wbtenders.gov.in</u>. The bidders would be required to register in the website which is free of cost.
- 3. For submission of Quotation, the Bidder is required to have Digital Signature Certificate (DSC) from one of the Certifying Authorities authorized by Government of India for issuing DSC. Bidders can see the list of licensed CAs from the link (<u>www.cca.gov.in</u>). Bidders who have not obtained the user ID and password for participating in e-procurement in this Project, may obtain the same from the website:<u>https://wbtenders.gov.in.</u>
- 4. Quotations shall be submitted on<u>https: //wbtenders. gov.in</u>on or before 15:00 hours on 09.02.2022. Any quotation or modifications to quotation received outside e- procurement system will not be considered. The electronic bidding system would not allow late submission of quotations. The Quotations will be opened online on 16:00 hours on 09.02.2022, this can also be viewed by the bidders online. The electronic summary of quotation opening will be generated and uploaded online.
- 5. If the Employer's office happens to be closed on the date of opening of the Quotations as specified, the Quotations will be opened on the next working day at the same time.
- 6. Other details can be seen in the RFQ document. The Employer shall not be held liable for any delays due to system failure beyond its control. A Bidder requiring any clarification of the RFQ Document may notify the Employer online or may visit the office of the Employer at the address given below.

The Executive Engineer Burdwan Investigation & Planning Division, I&W Dte, Govt. of West Bengal. Purta Bhawan, 3rd Floor, Purba Burdwan-713103,West Bengal Tel. No: 0342- 2646799, 90643 78729 e-mail: <u>eebipd2012@gmail.com</u>

Terms and Conditions

1. Eligibility: A Bidder

(a) Should have GIS web based GIS application development experience of minimum 2 similar nature of works in central or state govt.

The following works shall qualify for similar nature of works;

GIS based Management system for embankments, rivers, water resources, water supply, roads, electricity and similar public assets.

- (b) Should be involved in GIS development works for a minimum of 5 years
- (c) Should possess ISO 27001-2013 certificate.
- (d) Should have a minimum staff strength of 40 (necessary documentary evidence to be submitted)
- (e) Shall not participate in more than one Quotation;
- (f) Shall not have conflict of interest as defined in the Bank's Procurement Guidelines; and should not have been
 - temporarily suspended or debarred by the World Bank Group in compliance with the Bank's Anti-Corruption Guidelines and its Sanctions Framework; or
 - (ii) blacklisted or suspended by Government Department/Semi-Government/Public Sector Organization in India

(g) Bids from Joint Ventures are not acceptable.

2. Clarifications & Amendments: If the Employer receives any request for clarification of this RFQ Document, it will upload its response together with any amendment to this document, on the e-procurement portal for information of all bidders. Bidders should check on the e-procurement system, for any amendments to the terms and conditions.

3. The Quotation shall comprise the following:

(All documents should be uploaded after converting the same to PDF)

- (a) Letter of Quotation;
- (b) Authorization: The written confirmation of authorization to sign on behalf of the Bidder shall consist of an organizational document, board resolution or its equivalent, or power of attorney specifying the representative's authority to sign the Quotation on behalf of the Bidder.
- (c) Description of services;
- (d) Evidence in accordance with Clause 1establishing Bidder's qualifications to perform the contract, if its quotation is accepted;
- (e) Performance Statement of services of similar nature made during the last 3 years, in the prescribed Format along with supporting enclosures [copies of work order, schedule of work, completion certificate etc.]
- (f) Complete address and contact details of the Bidder having the following information:

Name of Bidder Address for communication Telephone No(s): Office Mobile No. Facsimile (FAX) No. Electronic Mail Identification (E-mail ID)

- (g) Price Schedule (using the Schedule uploaded with the RFQ document) wherein the rate shall be entered online.
- (h) Self-attested scanned copy of documents to be attached: Valid Tread License, GST certificate, PAN, P.Tax certificate, Partnership deed/ Affidavit of proprietorship duly

attested by a Notary Public, IT returns, Auditor's report for last three financial years showing Annual Average Turn Over etc. [Required Annual Average Turn Over during last three financial year ending 31st March of previous financial year should not be less than <u>50 lakhs</u>. [Rupees Fifty lakh]

- (i) The Bidder shall furnish, as part of his Bid, a Bid Security in the amount <u>Rs. 100,000/-</u> (Rupees one lakh only) for this particular work through Demand Draft or in the form of a Bank Guarantee (Format attached). Demand Draft to be drawn in favour of "The Executive Engineer, Burdwan Investigation & Planning Division" and payable at Burdwan
 - Bank guarantees issued as security for the bid shall be valid for **45 days** beyond the validity of the bid.
 - Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
 - The Bid Security of unsuccessful bidders will be return within 28 days of the end of the bid validity period.
 - The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security. The Bid Security of the successful Bidder shall be required to be kept valid and / or validity extended till such time the Performance Security is accepted by the Employer.
 - The Bid Security may be forfeited:
 - i) if the Bidder withdraws the Bid after Bid opening during the period of Bid validity;
 - ii) In the case of a successful Bidder, if the Bidder fails within the specified time limit to: Sign the Agreement / furnish the required Performance Security.

j) Bidder should upload: -

- Scanned copy of Bid security.
- Scanned copy of Power of attorney for signing the document in the case of firm in partnership/limited company, corporation.
- Scanned copy of an Affidavit affirming that information furnished in the bid is correct to the best of knowledge and belief of the bidder as per attached Format.

Offline submission of Bid documents: -

The bidders are required to submit (i) original Power of Attorney; (ii) original DD / BG towards Bid Security and (iii) original Affidavit regarding correctness of information furnished with bid document before the last date and time of bid submission at the address mentioned below either by registered post, courier or by hand, failing which their bids will not be opened online and will be declared nonresponsive.

The original documents as indicated above shall be submitted in sealed envelope to the following address by 15:00 hours on 09.02.2022.

The Executive Engineer, Burdwan Investigation & Planning Division, I&WD, Govt. of West Bengal. Purta Bhawan, 3rd Floor, Purba Burdwan-713103, West Bengal

The envelope should be marked (Name of work and Bid No.)

4. Quotation Prices:

(a) The contract shall be for the whole of the services, as specified in the Price Quotation Form.

Corrections, if any, can be carried out by editing the information before electronic submission.

- (b) The Bidder shall be responsible for meeting all tax liabilities other than Goods and Services Tax (GST) arising out of the Contract.
- (c) GST, which will be payable on the services at the time of invoicing, shall be shown separately.
- (d) The rates quoted by the Bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
- (e) The Prices shall be quoted in Indian Rupees only.
- (f) Each bidder shall submit only one bid.
- 5. Qualification of the Bidder: Bidder should have performed services of similar nature and complexity of value of at least INR 50 lakh (Rupees fifty lakh) only in any one of last 3 years. Details of services performed during the last 3 years shall be submitted in the specified Proforma. [copy of Work orders, Schedule of works, Completion Certificate from the competent authority for all are to be attached]
- 6. Validity of Quotation: Quotation shall remain valid for a period not less than 45 days after the deadline date specified for submission.
- 7. Signing of Quotations: The name and position held by each person signing the quotation and related documents must be typed or printed below the signature.
- 8. Quotation Submission: The Letter of Quotation shall be filled, signed and scanned copies shall be uploaded along with the Price Schedules that shall be furnished using the Forms available online without any alterations. All blank spaces shall be filled in with the information requested. Scanned copies of all other documents shall also be uploaded on this website.
- **9.** Deadline for Submission of Quotations: Quotations must be uploaded online, not later than the deadline for submission of quotations by 15:00 hours on 09.02.2022 as per server time. A Bidder may modify its Quotation any number of times by using the appropriate option on the e-Procurement Portal, before the deadline for submission of Quotations. Quotations once withdrawn cannot be resubmitted.
- **10. Online Opening and Evaluation of Quotations**: The Quotations will be opened online on the specified date and time. This can also be viewed by the Bidder online, and electronic summary of quotation opening will be generated and uploaded online.
 - (a) The Employer shall examine the quotation to determine whether the quotation (a) has been properly signed (Clause 7); (b) meets the eligibility criteria & qualification criteria (Clause 1& 5); and (c) Price Schedules are in accordance with the requirements specified in the RFQ document.
 - (b) Only Quotations that are both substantially responsive to the RFQ document and meet all Qualification Criteria shall qualify for financial evaluation.
 - (c) The evaluation shall be based excluding GST and including any other taxes.
 - (d) Employer shall **notify in writing** those Bidders who have failed to meet the Qualification Criteria or whose Quotations were considered non-responsive to the requirements in the RFQ document, advising them that their Quotation failed to meet the requirements of the RFQ document.
- 11. Award of Contract: The Employer will award the Contract to the Bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price
 - (a) Notwithstanding the above, the Employer reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.
 - (b) Regarding required number of **substantially responsive bidder**, **World** Bank's "Guidelines -Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank's Borrowers" Revised July 2014, may be followed.
 - (c) The Bidder whose quotation is accepted will be notified of the award of Contract by the Employer **prior to expiration of the quotation validity period**.

- (d) 100 % payment may be made within 30(Thirty) days of receipt of all deliverables maintaining all specifications, terms & conditions, acceptance of the same, receipt of invoice subject to availability of fund. Payment of GST for the services at the time of invoicing, although already included in the total cost, will be as actual.
- 12. Performance Security: Within 15 days of receiving Letter of Acceptance, the successful Bidder shall deliver to The Executive Engineer, Burdwan Investigation & Planning Division, Irrigation & Waterways Directorate, Govt. of West Bengal (Employer) the performance security (either a Bank Guarantee or a Fixed Deposit/Term Deposit Receipt in favour of the Employer) for an amount equivalent of 5 (five) % of the contract price. The Performance Security shall be valid beyond 45 days the contract completion period. Failure of the successful Bidder to furnish performance security and to sign the agreement within the period stipulated shall constitute sufficient grounds for annulment of award and debarring the bidder from participation in bidding for services/works by the Employer for a period of one year, in which case the Employer may make the award to the next lowest evaluated Bidder or seek quotations afresh.
- **13.** Supply of all materials and equipment shall be the responsibility of the Bidder. Employer will not issue any material/equipment.

14. Adjudicator:

The Adjudicator proposed by the Employer is: -Sri Kaushik Chattopadhyay

The daily fee for this proposed Adjudicator shall be: -Rs. 5000.00 only.

The biographical data of the proposed Adjudicator is: -<u>Ex-Secretary to the Irrigation & Waterways</u> <u>Department, Govt. of West Bengal</u>

If the Bidder disagrees with this proposal, the Bidder should so state in the Quotation. If, in the Letter of Acceptance, the Employer has not agreed on the appointment of the Adjudicator, the Adjudicator shall be appointed by the President of the Institution of Engineers, [State] State Centre at the request of either party.

DESCRIPTION OF **S**ERVICES

Background:

The state of West Bengal is one of the most flood prone states of India. The rivers are jacketed at many places. The length of embankment is about 10,000 Km in the state protecting major cities and towns from flood. The major embankments are in Sundarbans at the southern parts of the state. Besides the embankments in Sundarbans, most major rivers e.g., Damodar, Ajoy, Rupnarayan, Kangsabati, Mayurakshi, Bhagirathi-Hooghly, Mahananda, Teesta, Raidak – I & II, Sankosh etc. are protected by embankments at locations where flood could endanger human lives and agricultural lands Along with the vulnerable embankments bank erosion is also amajor cause of concern for the state. At many places along the Bhagirathi Hooghly river severe bank erosion engulf large tracts of land leaving the embankment on the bank in a endangered condition likely to collapse and subside at any moment of time.

1. Objective(s) of the Assignment

Flood management is the responsibility of the Irrigation & Waterways Department, Govt. of West Bengal. Department's mission is to manage floods through a network of embankments and provide support to the community and first responders. This ensure that both community and I & W Dept. can work together to build, sustain, and improve flood management capability and be prepared for, protect against, respond to, recover from, and mitigate all floods. I&WD's responsibilities in the areas of flood and embankment management include, but are not limited to, mitigation, preparedness, response, and recovery functions. Among its principal functions and activities, I & W Dept. establishes policy for and coordinates civil defenses and civil emergency and disaster planning of all disaster management agencies; assists State /local governments in the coordination of mitigation, preparedness, response, and recovery activities; develops and executes programs and policies for flood prevention and control; manages the embankment assets through continuous monitoring and maintenance.

The broad objective of this assignment is:

- a) Provide a web-based GIS solution that will integrate and provide on-line access to all the relevant data needed on river banks/embankments, which are currently in different forms and scattered across the I & WD offices together with the inspection data that will be generated by using the PC Tablets / mobile phones as per the Inspection Check List.
- b) Provide user-based access to relevant flood managers of I&WD personnel throughout the state.
- c) Continuously monitor the status and safety of embankments by involving local community and by regular upgrading of the condition of the embankment in the IEMS system by undertaking survey of the endangered stretches at a regular interval from state resources. The data so generated and made available at the click of a button shall enable the flood managers of I&WD to rationally assess the need and nature of bank/embankment maintenance, anti-erosion works or flood fighting works necessary to protect the embankment and the downstream habitations.
- d) Provide relevant information to the flood managers for embankment maintenance and strengthening of existing embankments, planning new embankments and prepare schemes for repair/maintenance of the embankments in particular reaches.
- e) To train relevant field-based engineers / personnel in the collection and integration of field-based data of embankments through periodic visual inspection reports by field offices and communities along the embankment on the physical status of embankments would assist in evaluating structural safety.

It is envisaged that through EMS developed on an enterprise database design and compliant to OGC standard the I&W Department will successfully be capable of integrating both spatial and non-spatial

information. This database design shall support I&WD requirement for maintenance and inspection and shall further strengthen new initiatives and integration with similar decision support systems. It will have the capability to integrate spatial information related to embankment status, Legacy data, existing and new embankments drawings and plans, floodway maps, geotechnical reports, maintenance reports, inspection reports, operation and maintenance manuals, flood fighting reports, models, and technical studies would be made readily available to users of IEMS.

IEMS will also provide its users database management functions like alerts and reports, and support relevant functions like providing data on locations and required relevant embankment profile, and other data. While detailed design of flood protection works is not planned within the IEMS environment, the job includes 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, IEMS would be supported by modern and latest GIS standards, and a comprehensive data management plan that dynamically captures embankment and river related details from both digital (including other information systems) and hard copy sources.

2. Scope of Services: -

The scope of work for the consultancy is divided into four major categories. These are as follows:

- 1. Design and development of Embankment Management System.
- 2. Preparation of database, management functional modules and integration in IEMS.
- 3. Development of Users' Manual, Technical Reference and Training.
- 4. Recommendations for sustainable effective use of EMS.

The Agency would develop a generalized model structure for 'West Bengal IEMS' which would accommodate all modules.

The IEMS software would be so structured and developed that data of any embankment may be added to the IEMS in future. The Home Page of IEMS will reflect **West Bengal IEMS** which will have interfaces for different basins.

The detailed scope of work shall be as follows

- **a.** Design and develop a GUI base web enabled GIS-based Master module of Integrated Embankment Management System with user friendly functional modules for various actions involved in integrated embankment management. The system should be OGC compliant and Data base should be Postgres DB standard version or similar.
- **b.** Provision of live Video Streaming of erosion/ flood fighting works or any other flood management works requiring urgent attention of the Decision makers in an interactive mode.
- c. Develop standard protocols and formats for field office & community inspection/reporting.
- **d.** Enable generation of alerts/ reports based on input received from field offices/ community and prepare a platform for dissemination of these alerts to pre identified stakeholders by mobile based SMS/ IEMS platform.
- e. Develop Users' Manual, Technical Reference and Training Modules including detailed documentation of the software architecture.
- **f.** Provide on-the-job training to field engineers on the development, management and implementation of IEMS with populating of data for at least one client identified River Embankment by the trainees. The agency will support the trainees with all assistance during this part of training.
- **g.** Provision of two years of back up operation and maintenance support for proper functioning and troubleshooting, if any, of the IEMS after deployment in Client's physical server at the State Data Centre.

h. The service would inter-alia include database design and planning. The design of the geodatabase would support I&WD's maintenance, inspection, strengthening and planning new structural floodplain management activities. A GPS enabled mobile app may be developed that allows crowd sourced picture to be received by the Control Room as geo referenced information. It may have facilities for supporting vernacular language/voice recording. The consultant would develop standard protocols and formats for field office and community inspection and reporting. Data such as legacy and new construction drawings and plans, geotechnical reports, maintenance reports, inspection reports, operation and maintenance manuals, flood fighting reports, models and technical studies would need to be catalogued and linked through the GIS, allowing authorized users to search documents for specific levee segments. The agency would 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 agency would develop protocols and manuals for GIS standards, and a comprehensive data management plan for inclusion of future embankment and river related details from both digital (including other information systems) and hard copy sources.

A) Design and development of Embankment Management System (IEMS):

This task shall consist of start-up and project initiation phase of the project. The main objectives of this phase shall be as follows:

- 1. To review international and national in the design and development of IEMS and to identify possible approaches in the design and development of the database similar to the data base developed by other agencies.
- 2. Conduct a preliminary user needs study that will focus on understanding user needs and expectations, review of data and its availability and identifying system requirement specifications.
- **3.** Prepare a project plan for project implementation and identify the risks and finalise the same in consultation with the Department.

The agency will work in close coordination with the Project Manager deputed from SPMU NHP to oversee the job and will make all necessary communications with him and take instructions as necessary from him.

Deputy Director, Advance Planning Project Evaluation and Monitoring Cell at Jalsampad Bhavan, Salt Lake will act as **Engineer-in- Charge & Project Manager** on behalf of I&W Department.

The general functionalities of the IEMS should include the following:

- i. Data viewer to display (graphical and Reports) and generate summary statistics on various user-selected databases.
- ii. Ability to upload and download various datasets (to be finalized in consultation with the I&WD)
- iii. The developed IEMS should have the ability or should have a separate module for accepting inputs from various stakeholders/community from pre-identified group of villagers / officers of I&WD and should incorporate the same in IEMS.

B) Preparation of database, management functional modules and integration in IEMS

The task under this activity shall be as follows:

- 1. Conduct a comprehensive System Requirement Study along with System Design Document.
- 2. Secondary Data collection, creation, update of existing spatial and non-spatial data so as to integrate with the database model being developed as part of the IEMS project.
- 3. Creation of a database model that will be able to handle the various functionalities as identified in the System Requirement Study and System Design documents.

The WebGIS Feature shall host the following data:

- Administrative Boundaries (As per the availability / as per the data provided by the department in .shp file)
 - State
 - District
 - Block
 - Division
- Embankment location
- Complete map view of all bank/embankment location whose data is available
- Map View of Inspections and Surveys.
- Location of Assets
- All the work related data including the survey data can be viewed.
- Get information on click.
- Viewing of status and progress of works at location.

The Web based GIS & MIS shall have the following features.

- \circ Zoom in / Zoom out/Pan.
- Pictures of Assets on click if available.
- Making Layout and Printing
- Buffering Capabilities
- Information on Click.
- Spatial and non-spatial Queries
- Search Facilities
- Do Analysis on Map based on Available data.
- Thematic Mapping Based on Available data
- Get Latest or Past reports on click.
- Get filtered result on map.
- Get filtered map on same map window.
- The developed System would be able to store different kind of information in various layers and retrieve information on clicks and will have search facilities.
- It would also have the features to integrate further surveyed data in future as fresh survey takes place.
- The Web based GIS & MIS system would be such that on taking the cursor to the entity it would display its relevant information and wherever available its Photographs.
- A part of the data spatial and non-spatial can now be shared with the people at large through the medium of Internet.
- All the data uploaded into the web would be digital and in an SVG format (Scalable Vector Graphics). Unlike an image the size of the data would be minimized which would facilitate

loading of data faster. The digital data would make the map interactive and respond to user queries spatially.

- The application would provide user friendly WEB based GUI (Graphic User Interface), which would be very intuitive and user friendly such that the most important features are available with a few mouse clicks or a few key strokes.
- The application would be completely network compliant and would be able to fetch and update data from server via normal networking protocols.
- The software would be able to connect concurrent users (numbers to be identified) to an existing data base simultaneously.
- The proposed GIS platform would be OCG complied and would have the provision of adding using proven open, interoperable standards to be scalable in order to add or interface additional functionalities as part of change request or future redevelopment, up gradation when required.
- The user will get a complete map view of all the embankments and ongoing, completed, and pending works/projects on the embankments / banks under the Department.
- The works/projects undertaken on bank/embankments will be shown on satellite imagery and by clicking on individual project user can get all the project related details like:
 - Work/Project location
 - Work/Project name
 - Pictures taken during the survey of that project,
 - Survey details
 - Work status and pictures of work progress
 - Completion date etc
- To get a drill down view, users can also filter project related data as per their requirement like, division wise, region wise, financial year wise etc. By clicking on individual projects, official can see the Physical and Financial progress and other project related details.
- Spatial analysis of the data based on the location from where they have been collected. User can be able to view geo-tagged data on maps along with photographs/videos available if any. This mapping is based on the locations from where the data has been collected through mobile application, which helps in visualizing the data.
- Detailed Project Location will be superimposed on the GIS interface from DGPS/ GPS data if provided by the department.
- Filter the layer to view only the data locations specific to each form. By selecting the layer, user will be able to view the data against each form. By clicking on the points will reveal the data associated with it.
- User can be able to measure area/length of a polygon/line features respectively over the satellite imagery.

Dashboard

- The dashboard will be customized as per the requirement of the department.
- This module will help senior officials to have an overall outlook of the embankments and works undertaken in them, if any, including its progress. Thus, helping the officials of the department to have a glance at all the information related to the department and help in decision support.
- The dashboard is dynamic and thus customizable and can be designed according to the end user requirements. The Dashboard will show all important information related to all activities briefly.

- The Dashboard contains Graphical and chart representation of the endangered embankments depending on their vulnerability, Ongoing works/Projects on the embankments if any, Completed Projects, etc.
 - Count of reported vulnerable embankments
 - Count of works/projects taken up
 - Count of Completed works/projects
 - Fund and Financial Information
 - Work status
 - Field Inspection reports
 - In depth details of schemes in one click from Dashboard

Report Generation

This module is used to generate yearly/monthly/weekly reports to understand the embankment status, functioning of works taken up etc for review meetings and to identify the potential points. The reporting module has the following functionalities:

- There will be a filtering option to drill down the data.
- There will be predefined reports which would be downloaded as per fixed criteria and format.
- There would be also provision of custom report download based on the necessary requirement.
- Dynamic Reports can be generated with dynamic filtering.
- Generation of State wise, District wise, Block wise, Division wise, Subdivision wise, Project wise report for all Layers. User can download the report in excel format.
- Geography-wise filtering of all data across locations.
- The report module will be customized as per the requirement of the Department.
- The web application will be able to store all the inspection & activity reports and it will show the status of all the infrastructure projects
- Extensive reports can be generated and downloaded as and when required.
- Reports can be pre-defined or customized.
- Year wise/month wise/weekly reports can be generated.
- The generated reports can be downloaded in Excel/Word/PDF format.
- Year wise/month wise/weekly reports can be generated.
- User specific report would be generated.
- Module wise report can also be generated.

Document management

- There will be an inbuilt Document Management Module for maintaining all embankment related information and work related document and files on the embankments in a structured manner.
- All documents will be stored against a embankment /particular project/ sub project.
- All documents should be stored under predefined category like:
 - Embankment attributes
 - works taken up
 - Tender related documents

Etc.

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- The Document Management Module will be integrated with multiple other modules like, Embankment asset information, Work Initiation, Project status, Inspection reports etc.
- Any document which is attached in the system with any project/ sub project will be available in the DMS Module.
- The access and availability of the document will be as per role and responsibility.

SMS and E-mail integration

- SMS and Email integration will be done.
- SMS and Email will be sent to various department officials in different stages for alerts, approvals, delay and others scenario which will be defined by the department.

User Management

The user management module will be present for complete system handling along with the permission role management of every user of the web application. The functions of this module will be as follows:

- Manage mobile users.
- Manage web users.
- Manage role and permission of the mobile users.
- Manage role and permission of the web users.
- User can manage their own profile.
- Change password option for the user

Mobile App - Android

A mobile app would be developed to facilitate the users at different level. The mobile app would be compatible for Android Devices only. The mobile app would help the users perform some of the daily tasks directly from the mobile without using the Web Application. Details would be finalised in consultation with the department.

Field data collection mobile Application

- The mobile application shall consist of a login Id and password which will enable the inspecting officer to login to the mobile app and fill a form related to the work and update the project progress by taking location-based photographs and send the same to the server. The mobile application features:
 - This application must be developed in compatibility to Android Platform.
 - There would be separate login id and password for every user to enter into the application.
 - The list of forms would be shown on the application which was previously created in the Web Console and assigned to the user.
 - Should also capture the location (latitude and longitude) and upload.
 - \circ The application should run on offline mode also.

- \circ The Application should use GPS & Internet connection (preferably 4G/3G) of the mobile to transfer the data.
- The Application should have the facility to send data online to the web portal through GPRS.
- The Application should have the facility of storing data internally when GPRS is not available.
- The Application should have the facility of pushing or uploading of previously stored data when GPRS is again available.
- The Data Collector application should also allow the departmental official to select embankments and update the embankment condition information for further decision of senior flood management officers.
- The mobile application shall also consist of a guest login Id and password for common people to login and upload the embankment / work status by taking location-based photographs and send the same to the server.

The Database should contain but not be limited to the following:

- 1. The database will have a provision to integrate all the necessary and legacy data related to river basins in West Bengal as mentioned below and populated with the data as available for with the department,
- 2. The database will be designed for updating with future spatial and non-spatial data.
- 3. The system will have tools for 2D visualization of embankments as well as retrieving specified details or technical documents for any given location of Embankment.
- 4. The database framework shall be suitable for extending the methodology to all basins in West Bengal.
- 5. Name of the embankment
- 6. Start and end point of the embankment.
- 7. Name of the villages, police stations (thana) and blocks.
- 8. Name and location of offices of Chief Engineer (CE), Superintending Engineer (SE), Executive Engineer (EE), Sub-Divisional Officer (SDO) and Junior Engineer (JE) under whom the embankment/structure is maintained along with land line, hot line and mobile numbers of office and residences.
- 9. Location and inventory of flood stores and mechanical divisions.
- 10. Alignment of embankments updated, based on latest high-resolution satellite imagery/ field survey using DGPS/ drone survey at a scale of 1:500 to 1:1000 as found suitable by the engineer-in-charge.
- 11. Longitudinal and cross-section Current status will be updated from fresh embankment surveys inputs from department.
- 12. Design embankment profile for complete reach.
- 13. Construction material properties
- 14. Current physical status of embankment seepage, sand boils, encroachments, animal burrows, vegetation, embankment damage Including geo-tagged and

time stamped photographs for the critical reaches during the flood season, captured by the department and public etc.

- 15. Inspection report generated at various levels of I&WD including different committees.
- 16. Freeboard, Natural Soil Level (NSL) and Highest Flood Level (HFL), riverside and countryside slopes. Both legacy data and current data from recent embankment and river survey will be integrated.
- 17. Stream/drainage outfalls details
- 18. Structural Information Structures existing along embankments, such as spurs, studs, bank protection works, sluice gates, roads, bridges, etc. like locations, types, photographs and measurements of visible dimensions, conditions (working, damaged, repairable, choked etc.) and any other relevant information.
- 19. Results of zone wise river bed material sample analysis for particle size median diameter
- 20. Thematic data such as administrative units down to villages along the embankments, Roads, natural and manmade drains, settlements, and canals-supplemented from satellite imagery.
- 21. Topographic survey data covering the area between the embankments with buffer on the country-side.
- 22. Photographs taken by I&WD officers and villagers/outsiders through mobile app with GPS to be developed under the project at different vulnerable locations of different embankments using a camera embedded with global positioning system (GPS). The photo datasets include sample field comments, reference datum/ coordinate system, longitude/latitude, and comments entered by photographer. Photographs will be entered into a GIS layer so they could be associated with a specific location on an embankment.

C) Development of Users' Manual, Technical Reference and Training:

The Agency shall design and implement an effective training program to include on the job as well as training for relevant I&WD officials at headquarters and also field offices on the maintenance, basic updating and use of EMS. Orientation training will be provided to top management in I&WD on the benefits and use of EMS. An exhaustive training would be provided to I&WD officers, engineers & staff involved in hardware, software and network system maintenance, database and GIS development, operations and management.

Training schedule till the completion of the contract period shall be as follows

- 3 trainings at North Bengal (place of training to be decided later) for a period of 3 days with attendance of 25 officers from the department as well as other implementing agencies of the National Hydrology Project.
- 4 trainings at South Bengal (Place of training to be decided later) for a period of 4 days with attendance of 25 officers from the department as well as other implementing agencies of the National Hydrology Project.
- Any other virtual trainings (anticipated 3, for a period of 3 days) as may be required for implementation.

D) Manpower support

One Technical Manpower experienced in handing similar projects must be provided for onsite support at the Department. The tenure would be of primarily for six months after the go live of both the web and mobile app. Necessary office space and furniture will be provided by the Department at the State Data Centre at Kolkata. This manpower will be responsible for:

- Co-ordination with the Department regarding any issue with the system
- Training and Handholding with the department
- Data Entry
- Co-ordination with the department officials regarding inspection and updation.
- Timely Data Backup and storage
- Report Generation
- Co-ordination with department for new customization requirement.
- Support through call to remote officers for using the app The Posting of the manpower will be posted at a single location.

The manpower should be involved in the project from the development phase to make him aware about the basics of the application.

Qualification and experience required

E) SMS Gateway

SMS Gateway to be provided till completion of contract period.

F) Recommendations for sustainable effective use of IEMS.

Under this activity the task involves providing necessary guidelines, risk assessment, and benefits and future scope of modifications of the system

3. Tasks and Deliverables

- 1) Inception Report reflecting proposed development approach, activity schedule, expected outputs etc.
- 2) System Requirement Specifications (SRS) as per internationally accepted standards, detailing the structure of IEMS, input-output, interfaces etc.
- 3) Interim Report on Preparation of GUI based Web-GIS viewer of existing data including tablet PC / mobile phone App development for field data entry by departmental officers and common people.
- 4) Design document for IEMS along with Beta Version deployment in I&WD.
- 5) Operational IEMS with relevant manual/Troubleshooting and standard operating protocols for West Bengal IEMS and formats for data visibility and editing /entering, data flow diagrams etc.
- 6) Maintenance manuals, training plan and materials;
- 7) Training to Field Engineers of I&WD as per plan/scope.

- 8) Maintenance support of the developed software to be provided after the go live both for web app & mobile app till project closure and two years thereafter involving the following tasks
 - Maintenance Manual
 - Debugging of software defects
 - Bug fixes to software defects
 - Periodic monitoring via automated testing to confirm the running status of the IEMS
 - Reinstallation, if required, on the same system/configuration.
 - Modifications to existing modules as per necessity
 - Upgrade/Installation of the IEMS on upgraded System configuration Database
 - Recovery of Data Loss caused due to system failure, hardware problems, viruses etc.
 - Issues arising due to update of other systems or data formats.
 - Issues arising due to update of the system's hardware and/or software.
 - Restoration of the software remotely while system crashes
 - Backup restoration and Backup scheduling
 - Backend request for data deletion/updating/import /export
 - Uploading of GIS maps as and when required
 - Server Maintenance

Time Schedule for Deliverables:

Reports	Covering	Time
		/Month
Inception Report	Conceptual design of embankment management system,	T+1 month
	Methodology for the development of system, Identification of	
	data inputs for the system, Outputs expected, and Fortnightly	
	schedule of work plan	
SRS and Design	System Requirement Specifications (SRS) containing IEMS	T + 4 Month
report	functional needs, data availability, Detailed design of	
	Integrated Embankment Management System including	
	inputs and outputs, Internal and external interfaces, Data flow	
	schedules for updating of system, and Input-output data	
	formats, Preparation of Web-GIS viewer of existing data	
	including mobile based App for field data entry	
Draft final report	Draft final report, including, Design Completion Report,	T + 5 Month
	Training Plan and Beta-version of IEMS system, user and	
	operation Manuals, and reporting protocols and formats, and	
	Acceptance. Test Go live of the web app and the mobile	
	application	
Final Report and	Final report and complete functional deployment of IEMS on	T + 6 Month
Deployment of IEMS.	Website and hands-on training to the client	

4. Service Provider's qualification requirement (and any other requirements which will be used for evaluation)

The bidder shall furnish the Technical Compliance Sheet as a part of his bid with **supporting documents**; which establishing the bidder's eligibility to bid and his qualification to participate in the bid, without fulfilling the following parameter, the bidder is liable for rejection without arising any reason.

The bidder is qualified only when he is the actual service provider and meets the required norms as specified below and all original evidences to be produced in due course of time as & when asked by the Tender/Quotation Inviting Authority:

TECHN	FECHNICAL COMPLIANCE SHEET					
SI No	Item		Complied with [Yes/No]			
1	The bidde	er should have the following credential				
	(a)	Should have GIS web based GIS application development experience of minimum 2 similar nature of works in Central or State govt.				
	(b)	Bidder should have performed services of similar nature and complexity of value of at least INR 50 lakh (Rupees fifty lakh) only in any one of last 3 years				
		The following works shall qualify for similar nature of works;				
		GIS based Management system for embankments, rivers, water resources, water supply, roads, electricity and similar public assets.				
	(c)	Should be involved in GIS development works for a minimum of 5 years				
	(d)	Should possess ISO 27001-2013 certificate.				
	(e)	Should have a minimum staff strength of 40 (necessary documentary evidence to be submitted)				

Only Quotations that are both substantially responsive to the RFQ document and meet all Qualification Criteria shall qualify for financial evaluation.

5. Payment Schedule

Payments shall be made according to the following schedule:

- 1. 10% as advance against bank guarantee within 15 days of signing of the contract
- 2. 30 percent after submission of SRS and Design Report
- **3. 30 percent** after submission of final report and complete functional deployment of IEMS on Web Site and hands-on training to the client officers. 10 % advance payment to be deducted from bill along with release of the bank guarantee.
- 4. 40% @ 20 percent annually for 2 years for operation and maintenance after deployment of IEMS on the web @ 5% after each quarter.

Duration of Contract

6 months from the date of contract agreement plus 2 (two) years back up support. The provision of two years of backup support is for proper functioning, troubleshooting & modifications of IEMS after deployment in client's server.

Quotation Forms

LETTER OF QUOTATION

RFQ No.: [insert identification]

The Bidder must prepare the Letter of Quotation on stationery with its letterhead clearly showing the Bidder complete name and address. The italicized text is for Bidder's guidance in preparing these forms and shall be deleted from the final products.

Our Reference: NoDated

То

The Executive Engineer Burdwan Investigation & Planning Division, I&WD, Govt. of West Bengal. Purta Bhawan, 3rd Floor, Purba Burdwan-713103, West Bengal

Subject: Designing Developing and Deploying of Integrated Embankment Management System for rivers in West Bengal of I&W Dept., Govt. of WB under NHP and subsequent Maintenance of the same for 2 years.

Sir,

- 1. We, the undersigned, hereby submit our Quotation.
- 2. In submitting our Quotation, we make the following declarations:
- (a) No reservations: We have examined and have no reservations to the RFQ Document;
- (b) **Quotation Validity Period**: Our Quotation shall be valid for the period of **45 days**, from the deadline fixed for the Quotation submission;
- (c) **Eligibility**: We meet the eligibility requirements and have no conflict of interest, we are not participating in more than one quotation in this bidding process, and we have not been temporarily suspended or debarred by the World Bank or blacklisted or suspended the government department/semi-government/public sector organization in India;
- (d) **Fraud and Corruption**: We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of corrupt, fraudulent, collusive, coercive, or obstructive practices; and we will strictly observe the laws against fraud and corruption in force in India namely, "Prevention of Corruption Act 1988."
- (e) **Commissions, gratuities and fees**: We have paid, or will pay the following commissions, gratuities, or fees with respect to the Bidding process or execution of the Contract: [insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity. If none has been paid or is to be paid, indicate "none."]

(f) We are not participating as a Joint Venture in this bidding process.

We accept the appointment of [name proposed in the RFQ] as the Adjudicator.

[or]

We do not accept the appointment of [name proposed in the RFQ] as the Adjudicator, and propose instead that [name] be appointed as Adjudicator, whose daily fees and biographical data are attached.

(g) The total price of our Quotation, including any unconditional discounts offered is:

Total price of the Quotation [insert the total price of the quotation excluding GST and including any other taxes, in words and figures];

Yours faithfully,

Authorized Signature*

Name & Title of Signatory _____

In the capacity of [insert legal capacity of person signing the Letter of Quotation]

Name of Bidder_____

Address _

Dated on _____ day of _____, ___ [insert date of signing]

*Authorization of a person to sign on behalf of the Bidder:

The written confirmation of authorization to sign on behalf of the Bidder shall consist of an organizational document, board resolution or its equivalent, or power of attorney specifying the representative's authority to sign the Quotation on behalf of the Bidder.

PRICE SCHEDULE FORM

Tender Inviting Authority: The Executive Engineer, Burdwan Investigation & Planning Division

Name of Work: "Designing Developing and Deploying of Integrated Embankment Management System for rivers in West Bengal of I&W Dept., Govt. of WB under NHP and subsequent maintenance of the same for 2 years."

Contract No: WBIW/NHP/RFQ-06/2021-22

Name of the Bidder/ Bidding Firm / Company:

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter theBidder Name and Values only)

NUMBER #	TEXT #	NUMBE R #	TEXT #	NUMBER #	NUMBER #	NUMBER #	NUMBER #	TEXT #
[#] Sl. No.	Item Description	Qty.	Units	Quoted Unit Rate with all taxes and all incidental charges excluding GST in INR	# Total GST applicabl e per item in INR	# TOTAL AMOU NT Without Taxes [Col. (4*13)]	TOTAL AMOUN T With Taxes [Col.(51 + 53)]	TOTAL AMOUNT In Words
1	2	4	5	13	51	53	54	55
1	Designing Developing and Deploying of Integrated Embankment Management System for rivers in West Bengal of I&W Dept., Govt. of WB under NHP and subsequent maintenance of the same for 2 years.	1	job			0.00	0.00	
Total in Figures						0.00	0.00	INR Zero Only
Quoted Rate in Words		INR Zero	o Only			·	·	·

We agree to perform the above services in accordance with the Description of Services fora total contract price (including all taxes and duties) of INR (Amount in figures)(Indian Rupeesamount in words) *[insert total price exclusive GST and inclusive any other taxes]within* the period specified in the Request for Quotations. We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf has engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices (as defined in the prevailing World Bank's sanctions procedures) in competing for or in performing the Contract.

Signature of Bidder with seal

PROFORMA FOR PERFORMANCE STATEMENT

RFQ No.....

NameofBidder.....

[for a period of last 03 financial years]

NAME OF WORK	WORK ORDER REFERENCE	ORDER PLACED BY	DESCRIPTION OF SERVICES	VALUE OF ORDER	DATE OF COMPLETIO N	VALUE OF SERVICES AT COMPLETION	REMARKS IF ANY

SIGNATURE OF BIIDDER

PERFORMANCE BANK GUARANTEE

(To be given from a nationalized or scheduled bank in India)

To: *The Executive Engineer Burdwan Investigation & Planning Division, I&WD, Govt. of West Bengal. Purta Bhawan, 3rd Floor, Purba Burdwan- 713103 West Bengal*

Whereas *[name and address of Service Provider]* (hereinafter called "the Service Provider") has undertaken, in pursuance of Contract No. *[number]* dated *[date]* to execute: Designing Developing and Deploying of Integrated Embankment Management System for rivers in West Bengal of I&W Dept., Govt. of WB under NHP and subsequent Maintenance of the same for 2 years. (Hereinafter called "the Contract");

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

And whereas we have agreed to give the Service Provider such a Bank Guarantee;

Now therefore we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Service Provider, up to a total of *[amount of Guarantee] [amount in words]*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[amount of Guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

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

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

This Guarantee shall be valid until a date 45 days from the date of completion of the Services.

Signature and seal of the Guarantor

Name of Bank

Address

Date

FORM OF AFFIDAVIT FOR CORRECTNESS OF INFORMATION AND DOCUMENTS SUBMITTED WITH BID

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

1. I hereby certify that all the information and documents furnished with the Bid submitted online in response to IFB number date issued by (authority inviting bids) for (Name and identification of work) are true and correct.

2. I hereby certify that I have been authorized by (the bidder) to sign on their behalf, the Bid mentioned in paragraph 1 above.

Deponent

Place:

Date:

*This sub-paragraph is not applicable if the Bidder is an individual and is signing the Bidon his own behalf.

LETTER OF ACCEPTANCE

[letterhead paper of the Employer]

[date]

To: [name and address of the Bidder]

This is to notify you that your Quotation dated [date] for execution of the [name of the Contract and identification number as given in RFQ] for the Contract Price of the equivalent of INR [amount in numbers and words], as corrected and modified in accordance with Request for Quotations (RFQ) is hereby accepted by our Agency.

Note: Insert one of the 3 options for the second paragraph. The first option should be used if the Bidder has not objected the name proposed for Adjudicator. The second option if the Bidder has objected the proposed Adjudicator and proposed a man for a substitute, who was accepted by the Employer. And the third option if the Bidder has objected the proposed Adjudicator and proposed a man for a substitute, who was not accepted by the Employer.

We confirm that [insert name proposed by Employer in the RFQ]

or

We accept that [name proposed by bidder] be appointed as the Adjudicator

or

We do not accept that [name proposed by bidder] be appointed as Adjudicator, and by sending a copy of this letter of acceptance to [insert the name of the Appointing Authority], we are hereby requesting [name], the Appointing Authority, to appoint the Adjudicator in accordance with RFQ.

You are hereby requested to furnish **performance security** for an amount of INR[equivalent to **5%** of the contract price] *within 15 days of the* receipt of the letter. The Performance Security in the form of Bank guarantee or a Fixed Deposit/ Term Deposit Receipt in favour of. ______ (Employer) shall be valid beyond **45** days the contract completion period. Failure to furnish the Performance Security will entail cancellation of the award of contract.

You are also requested to return the Contract Agreement duly signed.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract Agreement

DRAFT CONTRACT AGREEMENT

1. This deed of agreement is made in the form of agreement on ______ day______ month 20______, between the (Employer) or his authorized representative(hereinafter referred to as the first party) and _______ (Name of the Service Provider), S/O ______ resident of ______ (hereinafter referred to as the second party), to execute the non-consulting services of: Designing Developing and Deploying of Integrated Embankment Management System for rivers in West Bengal of I&W Dept., Govt. of WB under NHP and subsequent Maintenance of the same for 2 years (Hereinafter referred to as services) on the following terms and conditions.

2. Contract Price

The total Contract Price for the services (hereinafter referred to as the "total price")is INR

(excluding/including (Choose one option) Goods and Services Tax).

2.1. Payments under the Contract

Payments to the second party for the services will be released by the first party in the following manner:

100% Payment to the second party for the works/services will be released by the first party after completion of all works/services as per schedule-specification by maintaining all terms & condition and receipt & acceptance of all deliverables as a whole as per direction & satisfaction of Engineer-in-Charge.

- 2.2 Payments will be made on certification of the invoice by the Project Manager nominated by the first party with respect to quality/quantity of services executed in the format in Annexure I.
- 2.3 Project Manager: The agency shall undertake the work: Designing Developing and Deploying of Integrated Embankment Management System forrivers in West Bengal of I&W Dept., Govt. of WB under NHP and subsequent Maintenance of the same for 2 years in consultation with the Deputy Director, Advance Planning Project Evaluation and Monitoring Cell at Jalsampad Bhavan, Salt Lake who will act as Engineer-in-Charge & Project Manager on behalf of I&W Department.

3. Notice by Service Provider to Employer

The second party, on the services reaching each stage of execution, issue a notice to the first party or the Project Manager nominated by the first party (who is responsible for supervising the Service Provider, administering the contract, certifying the payments due to the Service Provider, issuing and valuing variations to the contract, awarding extensions of time etc. Within 15 days of the receipt of such notice, the first party or the Project Manager nominated by it, will ensure issue of stage completion certificate after due verification.

4. Completion Time

The services should be completed in 6 (six) months from the date of this Agreement. In exceptional circumstances, the time period stated in this clause may be extended in writing by mutual consent of both the parties.

- 5. If any of the compensation events mentioned below would prevent the services being completed by the intended completion date, the first party will decide on the intended completion date being extended by a suitable period:
- (a) The first party orders a delay for execution of the services on time.
- (b) Ground conditions are substantially more adverse than could reasonably have been assumed before issue of letter of acceptance and from information provided to second party or from visual inspection of the site.

- (c) Payments due to the second party are delayed without reason.
- (d) Certification for stage completion of the services is delayed unreasonably.
- 6. Any wilful delay on the part of the second party in completing the services within the stipulated period will render him liable to pay liquidated damages. @ INR 0.05% of the *contract value* per day which will be deducted from payments due to him. The first party may cancel the contract and take recourse to such other action as deemed appropriate once the total amount of liquidated damages exceeds 5 % of the contract amount.
- 7. Duties and Responsibilities of the First Party
- 7.1 The first party shall be responsible for providing regular and frequent supervision and guidance to the second party for carrying out the services as per description of services. This will include written guidelines for checking quality of services to ensure that it is as per the norms.
- **7.2** The Project Manager or such other person as may be authorized by the first party shall hold meeting once in a fortnight where the second party or his representative will submit the latest information including progress report and difficulties if any, in the execution of the services.
- **7.3** The Project Manager shall record his observations/instructions at the time of his meeting with the second party. The second party will carry out the instructions and promptly rectify any deviations pointed out by the Project Manager. If the deviations are not rectified, within the time specified in the Project Manager's notice, the first party as well as the Project Manager nominated by it, may instruct stoppage or suspension of the services. It shall thereupon be open to the first party or the Project Manager to have the deviations rectified at the cost of the second party.
- 8. Duties and Responsibilities of the Second Party

8.1 The second party shall:

- (a) take up the services and arrange for its completion within the time period stipulated in Clause 2;
- (b) employ suitable manpower and equipment to carry out the services;
- (c) regularly supervise and monitor the progress of services;
- (d) abide by the technical suggestions/direction of supervisory personnel designated by the Employer;
- (e) be responsible for bringing any discrepancy to the notice of the representative of the first party and seek necessary clarification:
- (f) ensure that the service is carried out in accordance with specifications, drawings and within the total of the contract amount without any cost escalation;
- (g) keep the first party informed about the progress of services;
- (h) maintain necessary insurance against loss of equipment and property etc. or workman disability compensation claims of the personnel deployed on the services as well as third party claims.
- (i) pay all duties, taxes and other levies payable by service providers' agencies as per law under the contract (First party will effect deduction (TDS) from running bills in respect of such taxes as may be imposed under the law).

9. Variations / Extra Items

The services shall be carried out by the second party in accordance with the approved description of

services. However, if, on account of any other factors, variations are considered necessary, the following procedure shall be followed:

- (a) The second party shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven days of the request before the Variation is ordered.
- (b) If the quotation given by the second party is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price which shall be based on Project Manager's own forecast of the effects of the Variation on the Service Provider's costs.
- (c) The second party shall not be entitled to additional payment for costs which could have been avoided by giving early warning.

10. Securities

The Performance Security (either a Bank Guarantee in the format attached or Fixed Deposit/ Term Deposit Receipt from a Nationalized or Scheduled Bank in India) shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer. The Performance Security shall be valid beyond 45 days of the completion period.

11. Termination

11.1 By the Employer

The Employer may terminate this Contract, by not less than 15 days' written notice of termination to the Service Provider, to be given after the occurrence of any of the events specified below:

- (a) if the Service Provider does not remedy a failure in the performance of its obligations under the Contract, within 15 days after being notified or within any further period as the Employer may have subsequently approved in writing;
- (b) if the Service Provider become insolvent or bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (c) if, as the result of Force Majeure (means an event which is beyond the reasonable control of a Party and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.), the Service Provider is unable to perform a material portion of the services for a period of not less than 30 days; or
- (d) if the Service Provider, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for, then the Employer may after giving fourteen days written notice to the Service provider, terminate the contract and expel him from the site.

11.2 By the Service Provider

The Service Provider may terminate this Contract, by not less than 15 days' written notice to the Employer, such notice to be given after the occurrence of any of the events specified below:

- (a) if the Employer fails to pay any monies due to the Service Provider pursuant to this Contract and not subject to dispute pursuant to Clause 10 within 45 days after receiving written notice from the Service Provider that such payment is overdue; or
- (b) if, as the result of Force Majeure, the Service Provider is unable to perform a material portion of the services for a period of not less than 30 days.

11.3 Suspension of Loan or Credit

In the event that the World Bank suspends the loan or Credit to the Employer, from which part of the payments to the Service Provider are being made, the Employer is obligated to notify the Service Provider of such suspension within 7 days of having received the World Bank's suspension notice.

12. Payment upon Termination

Upon termination of this Contract, the Employer shall make the following payments to the Service Provider:

- (a) payment for services satisfactorily performed less advances or other recoveries or any taxes to be deducted at source (TDS) as per applicable law, prior to the effective date of termination;
- (b) except in the case of termination pursuant to paragraphs above reimbursement of any reasonable cost incident to the prompt and orderly termination of the Contract, including the cost of the return travel of the Personnel.

13. Settlement of Disputes

13.1 Amicable Settlement: The Employer and Bidder shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

13.2 Dispute Settlement

- (a) If any dispute arises between the Employer and the Service Provider in connection with, or arising out of, the Contract or the provision of the services, whether during carrying out the services or after their completion, the matter shall be referred to the Adjudicator within 14 days of the notification of disagreement of one party to the other.
- (b) The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.
- (c) The Adjudicator shall be paid by the hour at the rate specified above together with reimbursable expenses for vehicle hire, food and lodging, if required, as agreed in connection with the adjudication procedure, and the cost shall be divided equally between the Employer and the Bidder, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision will be final and binding.
- (d) The arbitration shall be conducted in accordance with the Arbitration and Conciliation Act, 1996 and latest amendment.
- (e) Should the Adjudicator resign or die, or should the Employer and the Bidder agree that the Adjudicator is not functioning in accordance with the provisions of the Contract a new Adjudicator will be jointly appointed by the Employer and the Bidder. In case of disagreement between the Employer and the Bidder, within 30 days, the Adjudicator shall be designated by the President of the Institution of Engineers, *[State]* State Centre at the request of either party, within 14 days of receipt of such request.
- (f) The place of Adjudicator /Arbitrator shall be _____

(g)	The Court of Jurisdiction shall be	
(5)		

14. Corrupt and Fraudulent Practices

The World Bank requires compliance with its policy in regard to corrupt and fraudulent practices. In further pursuance of this policy, Bidders shall permit and shall cause its agents (whether declared or not), sub-constractors, sub-consultants, service providers, or suppliers and any personnel thereof, to permit the Bank to inspect all accounts, records and other documents relating to any prequalification process, bid submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

The Format of Certificate (Annexure I) & Description of Services (Annexure II) are attached

Signed and delivered by Sri for and on behalf of the Service

Provider In the presence of the Witness: i) ii) SIGNATURE Signed and delivered by Sri ______ for and on behalf of the Employer. In the presence of the Witness: i) ii) SIGNATURE

Annexure I

FORMAT OF CERTIFICATE

Signature

Name & Designation

(Official address)

Place:

Date:

Office seal

Annexure II

DESCRIPTION OF SERVICES

The detailed scope of work shall be as follows

- a) Design and develop a GUI base web enabled GIS-based Master module of Integrated Embankment Management System with user friendly functional modules for various actions involved in integrated embankment management. The system should be OGC compliant and Data base should be Postgres DB standard version or similar.
- b) Provision of live Video Streaming of erosion/ flood fighting works or any other flood management works requiring urgent attention of the Decision makers in an interactive mode.
- c) Develop standard protocols and formats for field office & community inspection/reporting.
- d) Enable generation of alerts/ reports based on input received from field offices/ community and prepare a platform for dissemination of these alerts to pre identified stakeholders by mobile based SMS/ IEMS platform.
- e) Develop Users' Manual, Technical Reference and Training Modules including detailed documentation of the software architecture.
- f) Provide on-the-job training to field engineers on the development, management and implementation of IEMS with populating of data for at least one client identified River Embankment by the trainees. The agency will support the trainees with all assistance during this part of training.
- g) Provision of two years of back up operation and maintenance support for proper functioning and troubleshooting, if any, of the IEMS after deployment in Client's physical server at the State Data Centre.
- h) The service would inter-alia include database design and planning. The design of the geo-database would support I&WD's maintenance, inspection, strengthening and planning new structural floodplain management activities. A GPS enabled mobile app may be developed that allows crowd sourced picture to be received by the Control Room as geo referenced information. It may have facilities for supporting vernacular language/voice recording. The consultant would develop standard protocols and formats for field office and community inspection and reporting. Data such as legacy and new construction drawings and plans, geotechnical reports, maintenance reports, inspection reports, operation and maintenance manuals, flood fighting reports, models and technical studies would need to be catalogued and linked through the GIS, allowing authorized users to search documents for specific levee segments. The agency would 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 agency would develop protocols and manuals for GIS standards, and a comprehensive data management plan for inclusion of future embankment and river related details from both digital (including other information systems) and hard copy sources.

G) Design and development of Embankment Management System (IEMS):

This task shall consist of start-up and project initiation phase of the project. The main objectives of this phase shall be as follows:

- 1. To review international and national in the design and development of IEMS and to identify possible approaches in the design and development of the database similar to the data base developed by other agencies.
- 2. Conduct a preliminary user needs study that will focus on understanding user needs and expectations, review of data and its availability and identifying system requirement specifications.
- **3.** Prepare a project plan for project implementation and identify the risks and finalise the same in consultation with the Department.

The agency will work in close coordination with the Project Manager deputed from SPMU NHP to oversee the job and will make all necessary communications with him and take instructions as necessary from him.

Deputy Director, Advance Planning Project Evaluation and Monitoring Cell at Jalasampad Bhavan, Salt Lake will act as Engineer-in- Charge & Project Manager on behalf of I&W Department.

The general functionalities of the IEMS should include the following:

- i. Data viewer to display (graphical and Reports) and generate summary statistics on various user-selected databases.
- ii. Ability to upload and download various datasets (to be finalized in consultation with the I&WD)
- iii. The developed IEMS should have the ability or should have a separate module for accepting inputs from various stakeholders/community from pre-identified group of villagers / officers of I&WD and should incorporate the same in IEMS.

H) Preparation of database, management functional modules and integration in IEMS

The task under this activity shall be as follows:

- 1. Conduct a comprehensive System Requirement Study along with System Design Document.
- 2. Secondary Data collection, creation, update of existing spatial and non-spatial data so as to integrate with the database model being developed as part of the IEMS project.
- 3. Creation of a database model that will be able to handle the various functionalities as identified in the System Requirement Study and System Design documents.

The WebGIS Feature shall host the following data:

- Administrative Boundaries (As per the availability / as per the data provided by the department in .shp file)
 - State
 - District
 - Block
 - Division
- Embankment location
- Complete map view of all bank/embankment location whose data is available
- Map View of Inspections and Surveys.
- Location of Assets
- All the work related data including the survey data can be viewed.
- Get information on click.
- Viewing of status and progress of works at location.

The Web based GIS & MIS would have the following features.

- \circ Zoom in / Zoom out/Pan.
- Pictures of Assets on click if available.
- Making Layout and Printing

- o Buffering Capabilities
- Information on Click.
- Spatial and non-spatial Queries
- Search Facilities
- $\circ~$ Do Analysis on Map based on Available data.
- Thematic Mapping Based on Available data
- $\circ \quad \text{Get Latest or Past reports on click.}$
- \circ Get filtered result on map.
- Get filtered map on same map window.
- The developed System would be able to store different kind of information in various layers and retrieve information on clicks and will have search facilities.
- It would also have the features to integrate further surveyed data in future as fresh survey takes place.
- The Web based GIS & MIS system would be such that on taking the cursor to the entity it would display its relevant information and wherever available its Photographs.
- A part of the data spatial and non-spatial can now be shared with the people at large through the medium of Internet.
- All the data uploaded into the web would be digital and in an SVG format (Scalable Vector Graphics). Unlike an image the size of the data would be minimized which would facilitate loading of data faster. The digital data would make the map interactive and respond to user queries spatially.
- The application would provide user friendly WEB based GUI (Graphic User Interface), which would be very intuitive and user friendly such that the most important features are available with a few mouse clicks or a few key strokes.
- The application would be completely network compliant and would be able to fetch and update data from server via normal networking protocols.
- The software would be able to connect concurrent users (numbers to be identified) to an existing data base simultaneously.
- The proposed GIS platform would be OCG complied and would have the provision of adding using proven open, interoperable standards to be scalable in order to add or interface additional functionalities as part of change request or future redevelopment, up gradation when required.
- The user will get a complete map view of all the embankments and ongoing, completed, and pending works/projects on the embankments / banks under the Department.
- The works/projects undertaken on bank/embankments will be shown on satellite imagery and by clicking on individual project user can get all the project related details like:
 - Work/Project location
 - Work/Project name
 - \circ $\;$ Pictures taken during the survey of that project,
 - Survey details
 - Work status
 - Completion date etc
- To get a drill down view, users can also filter project related data as per their requirement like, division wise, region wise, financial year wise etc. By clicking on individual projects, official can see the Physical and Financial progress and other project related details.
- Spatial analysis of the data based on the location from where they have been collected. User can be able to view geo-tagged data on maps along with photographs/videos available if any. This mapping is based on the locations from where the data has been collected through mobile application, which helps in visualizing the data.

- Detailed Project Location will be superimposed on the GIS interface from DGPS/ GPS data if provided by the department.
- Filter the layer to view only the data locations specific to each form. By selecting the layer, user will be able to view the data against each form. By clicking on the points will reveal the data associated with it.
- User can be able to measure area/length of a polygon/line features respectively over the satellite imagery.

Dashboard

- The dashboard will be customized as per the requirement of the department.
- This module will help senior officials to have an overall outlook of the embankments and works undertaken in them, if any, including its progress. Thus, helping the officials of the department to have a glance at all the information related to the department and help in decision support.
- The dashboard is dynamic and thus customizable and can be designed according to the end user requirements. The Dashboard will show all important information related to all activities briefly.
- The Dashboard contains Graphical and chart representation of the endangered embankments depending on their vulnerability, Ongoing works/Projects on the embankments if any, Completed Projects, etc.
 - Count of reported vulnerable embankments
 - Count of works/projects taken up
 - Count of Completed works/projects
 - Fund and Financial Information
 - Work status
 - Field Inspection reports
 - \circ $\;$ In depth details of schemes in one click from Dashboard

Report Generation

This module is used to generate yearly/monthly/weekly reports to understand the embankment status, functioning of works taken up etc for review meetings and to identify the potential points. The reporting module has the following functionalities:

- There will be a filtering option to drill down the data.
- There will be predefined reports which would be downloaded as per fixed criteria and format.
- There would be also provision of custom report download based on the necessary requirement.
- Dynamic Reports can be generated with dynamic filtering.
- Generation of State wise, District wise, Block wise, Division wise, Subdivision wise, Project wise report for all Layers. User can download the report in excel format.
- Geography-wise filtering of all data across locations.
- The report module will be customized as per the requirement of the Department.
- The web application will be able to store all the inspection & activity reports and it will show the status of all the infrastructure projects
- Extensive reports can be generated and downloaded as and when required.
- Reports can be pre-defined or customized.
- Year wise/month wise/weekly reports can be generated.
- The generated reports can be downloaded in Excel/Word/PDF format.

- Year wise/month wise/weekly reports can be generated.
- User specific report would be generated.
- Module wise report can also be generated.

Document management

- There will be an inbuilt Document Management Module for maintaining all embankment related information and work related document and files on the embankments in a structured manner.
- All documents will be stored against a embankment /particular project/ sub project.
- All documents should be stored under predefined category like:
 - Embankment attributes
 - works taken up
 - Tender related documents
 - Etc.
- The Document Management Module will be integrated with multiple other modules like, Embakment asset information, Work Initiation, Project status, Inspection reports etc.
- Any document which is attached in the system with any project/ sub project will be available in the DMS Module.
- The access and availability of the document will be as per role and responsibility.

SMS and E-mail integration

- SMS and Email integration will be done.
- SMS and Email will be sent to various department officials in different stages for alerts, approvals, delay and others scenario which will be defined by the department.

User Management

The user management module will be present for complete system handling along with the permission role management of every user of the web application. The functions of this module will be as follows:

- Manage mobile users.
- Manage web users.
- Manage role and permission of the mobile users.
- Manage role and permission of the web users.
- User can manage their own profile.
- Change password option for the user

Mobile App - Android

A mobile app would be developed to facilitate the users at different level. The mobile app would be compatible for Android Devices only. The mobile app would help the users perform some of the daily tasks directly from the mobile without using the Web Application. Details would be finalised in consultation with the department.

Field data collection mobile Application

- The mobile application shall consist of a login Id and password which will enable the inspecting officer to login to the mobile app and fill a form related to the work and update the project progress by taking location-based photographs and send the same to the server. The mobile application features:
 - This application must be developed in compatibility to Android Platform.
 - $\circ~$ There would be separate login id and password for every user to enter into the application.
 - The list of forms would be shown on the application which was previously created in the Web Console and assigned to the user.
 - \circ $\;$ Should also capture the location (latitude and longitude) and upload.
 - \circ The application should run on offline mode also.
 - $\circ~$ The Application should use GPS & Internet connection (preferably 4G/3G) of the mobile to transfer the data.
 - The Application should have the facility to send data online to the web portal through GPRS.
 - The Application should have the facility of storing data internally when GPRS is not available.
 - The Application should have the facility of pushing or uploading of previously stored data when GPRS is again available.
- The Data Collector application should also allow the departmental official to select embankments and update the embankment condition information for further decision of senior flood management officers.
- The mobile application shall also consist of a guest login Id and password for common people to login to the mobile app and upload the embankment / work status by taking location-based photographs and send the same to the server.

The Database should contain but not be limited to the following:

- 1. The database will have a provision to integrate all the necessary and legacy data related to river basins in West Bengal as mentioned below and populated with the data as available for with the department,
- 2. The database will be designed for updating with future spatial and non-spatial data.
- 3. The system will have tools for 2D visualization of embankments as well as retrieving specified details or technical documents for any given location of Embankment.
- 4. The database framework shall be suitable for extending the methodology to all basins in West Bengal.
- 5. Name of the embankment
- 6. Start and end point of the embankment.
- 7. Name of the villages, police stations (thana) and blocks.

- 8. Name and location of offices of Chief Engineer (CE), Superintending Engineer (SE), Executive Engineer (EE), Sub-Divisional Officer (SDO) and Junior Engineer (JE) under whom the embankment/structure is maintained along with land line, hot line and mobile numbers of office and residences.
- 9. Location and inventory of flood stores and mechanical divisions.
- 10. Alignment of embankments updated, based on latest high-resolution satellite imagery/ field survey using DGPS/ drone survey at a scale of 1:500 to 1:1000 as found suitable by the engineer-in-charge.
- 11. Longitudinal and cross-section Current status will be updated from fresh embankment surveys inputs from department.
- 12. Design embankment profile for complete reach.
- 13. Construction material properties
- 14. Current physical status of embankment seepage, sand boils, encroachments, animal burrows, vegetation, embankment damage Including geotagged and time stamped photographs for the critical reaches during the flood season, captured by the department and public etc.
- 15. Inspection report generated at various levels of I&WD including different committees.
- 16. Freeboard, Natural Soil Level (NSL) and Highest Flood Level (HFL), riverside and countryside slopes. Both legacy data and current data from recent embankment and river survey will be integrated.
- 17. Stream/drainage outfalls details
- 18. Structural Information Structures existing along embankments, such as spurs, studs, bank protection works, sluice gates, roads, bridges, etc. like locations, types, photographs and measurements of visible dimensions, conditions (working, damaged, repairable, choked etc.) and any other relevant information.
- 19. Results of zone wise river bed material sample analysis for particle size median diameter
- 20. Thematic data such as administrative units down to villages along the embankments, Roads, natural and manmade drains, settlements, and canals- supplemented from satellite imagery.
- 21. Topographic survey data covering the area between the embankments with buffer on the country-side.
- 22. Photographs taken by I&WD officers and villagers/outsiders through mobile app with GPS to be developed under the project at different vulnerable locations of different embankments using a camera embedded with global positioning system (GPS). The photo datasets include sample field comments, reference datum/ coordinate system, longitude/latitude, and comments entered by photographer. Photographs will be entered into a GIS layer so they could be associated with a specific location on an embankment.

I) Development of Users' Manual, Technical Reference and Training:

The Agency shall design and implement an effective training program to include on the job as well as training for relevant I&WD officials at headquarters and also field offices on the maintenance, basic updating and use of EMS. Orientation training will be provided to top management in I&WD on the benefits and use of EMS. An exhaustive training would be provided to I&WD officers, engineers & staff involved in hardware, software and network system maintenance, database and GIS development, operations and management.

Training schedule till the completion of the contract period shall be as follows

- 3 trainings at North Bengal (place of training to be decided later) for a period of 3 days with attendance of 25 officers from the department as well as other implementing agencies of the National Hydrology Project
- 4 trainings at South Bengal (Place of training to be decided later) for a period of 3 days with attendance of 25 officers from the department as well as other implementing agencies of the National Hydrology Project
- Any other virtual trainings (anticipated 2, for a period of 3 days) as may be required for implementation

J) Manpower support

One Technical Manpower experienced in handing similar projects must be provided for onsite support at the Department. The tenure would be of primarily for six months after the go live of both the web and mobile app. Necessary office space and furniture will be provided by the department at the State Data Centre at Kolkata.

This manpower will be responsible for:

- Co-ordination with the Department regarding any issue with the system
- Training and Handholding with the department
- Data Entry
- Co-ordination with the department officials regarding inspection and updation.
- Timely Data Backup and storage
- Report Generation
- Co-ordination with department for new customization requirement.
- Support through call to remote officers for using the app The Posting of the manpower will be posted at a single location.

The manpower should be involved in the project from the development phase to make him aware about the basics of the application.

Qualification and experience required

Qualification: BE/ B Tech in IT/ CE or CA/BCA/BSc IT/IT or Computer Background Project Experience: At least 1 Similar Project Experience	Support Manpower
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K) SMS Gateway

SMS Gateway to be provided till completion of contract period.

L) Recommendations for sustainable effective use of IEMS.

Under this activity the task involves providing necessary guidelines, risk assessment, and benefits and future scope of modifications of the system

6. Tasks and Deliverables

- 9) Inception Report reflecting proposed development approach, activity schedule, expected outputs etc.
- 10) System Requirement Specifications (SRS) as per internationally accepted standards, detailing the structure of IEMS, input-output, interfaces etc.
- 11) Interim Report on Preparation of GUI based Web-GIS viewer of existing data including tablet PC / mobile phone App development for field data entry by departmental officers and common people.
- 12) Design document for IEMS along with Beta Version deployment in I & WD.
- 13) Operational IEMS with relevant manual/Troubleshooting and standard operating protocols for West Bengal IEMS and formats for data visibility and editing /entering, data flow diagrams etc.
- 14) Maintenance manuals, training plan and materials;
- 15) Training to Field Engineers of I &WD as per plan/scope.
- 16) Maintenance support of the developed software to be provided after the go live both for web app & mobile app till project closure and two years thereafter involving the following tasks
 - Maintenance Manual
 - Debugging of software defects
 - Bug fixes to software defects
 - Periodic monitoring via automated testing to confirm the running status of the IEMS
 - *Reinstallation, if required, on the same system/configuration.*
 - Modifications to existing modules as per necessity
 - Upgrade/Installation of the IEMS on upgraded System configuration Database
 - Recovery of Data Loss caused due to system failure, hardware problems, viruses etc.
 - Issues arising due to update of other systems or data formats.
 - Issues arising due to update of the system's hardware and/or software.
 - Restoration of the software remotely while system crashes
 - Backup restoration and Backup scheduling
 - Backend request for data deletion/updating/import /export
 - Uploading of GIS maps as and when required
 - Server Maintenance

NOTICE TO PROCEED WITH THE NON-CONSULTANCY SERVICES

[letter head paper of the Employer]

(date)

То

(name and address of the Service Provider)

Pursuant to your furnishing the requisite security as stipulated in RFQClause12, and as stated in letter of acceptance and signing of the contract agreement for the non-consulting

services of _______ @ a Contract Price of INR ______, you are hereby instructed to proceed with the execution of the said services in accordance with the contract documents.

Authorized Signature:

Name and Title of Signatory: Name of Agency:

Attachment: Contract Agreement

BANK GUARANTEE FOR ADVANCE PAYMENT

(To be given from a nationalized or scheduled bank in India)

The Executive Engineer Burdwan Investigation & Planning Division, I&WD, Govt. of West Bengal. Purta Bhawan, 3rd Floor, Purba Burdwan- 713103 West Bengal

Name of work:

In accordance with the provisions of the Contract Agreement, Sub-Clause 2.1("**Payments under the Contract**") of the above-mentioned Contract, *[name and address of Service Provider]* (hereinafter called "the Service Provider") shall deposit with *The Executive Engineer, Burdwan Investigation & Planning Division, I&WD, Govt. of West Bengal* a Bank Guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of *[amount of Guarantee] [amount in words]*

We, the *[Bank or Financial Institution]*, as instructed by the Service Provider, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to *[name of Employer]* on his first demand without whatsoever right of objection on our part and without his first claim to the Service Provider, in the amount not exceeding *[amount of Guarantee] [amount in words]*

We further agree that no change or addition to or other modification of the terms of the Contract or of Services to be performed there under or of any of the Contract documents which may be made between *[name of Employer]* and the Service Provider, shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

This Guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until *The Executive Engineer, Burdwan Investigation Planning Division, I&WD, Govt. of West Bengal* receives full repayment of the same amount from the Service Provider.

Yours truly,

To:

Signature and seal:

Name of Bank/Financial Institution:

Address:

Date: