Expression of Interest (EOI)

for

Services of a Consultancy Organization

to

For the Safety Audit of 45 nos. of Bridges and the Development of a Bridge Information and Management System

Submission Start Date: 28/06/2025

Submission End Date: 07/07/2025 (5:00 PM IST)

Department of Civil and Environmental Engineering

Indian Institute of Technology Patna

Bihta-Kanpa Road

Patna, Bihar, 801106

28th June 2025

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CRITICAL DATA SHEET

Date of Issue EOI	**28/06/2025**
Last Date and Time	**07/07/2025 (5:00 PM IST)**
Earnest Money Deposit	Rs. 1,00,000/- (Rupees One Lakh only) payable by DD or in the IITP R&D Account through SBI Collect: https://www.onlinesbi.sbi/sbicollect/icollecthome.htm?corpID=1968961
Address For Communication	Indian Institute of Technology Patna – 801106, Bihar Email: rnd_purchase@iitp.ac.in
Contract Duration	10 months (This may be extended for another 6 months based on satisfactory performance and subjected to approval of concerned authority of IIT Patna)

Expression of Interest (EOI) for the Safety Audit of 45 nos. of Bridges and the Development of a Bridge Information and Management System

Dated: 28-06-2025

1. AIMS AND OBJECTIVES:

IIT Patna invites Expressions of Interest (EOI) from reputed and experienced Structural Consultancy Firms for conducting a safety audit of 45 bridges and for the development of a Bridge Information and Management System (BIMS).

The scope of work is detailed in ***Appendix A***, and the list of bridges is provided in ***Appendix B***. The duration of the assignment is 10 months. This may be extended for another 6 months based on satisfactory performance and subject to approval of the concerned authority of IIT Patna.

2. ELIGIBILITY CRITERIA:

Interested firms must meet the following minimum requirements:

A. Proven Track Record:

- Demonstrated experience in structural auditing, bridge condition assessment, non-destructive testing (NDT), and retrofitting design or in structural repair & strengthening of bridges.
- Proven record of successfully completing at least 2 projects with government agencies and reputed private sector clients in last three financial years. One project should involve a bridge structure over water.
- The bidding company must have a minimum of five years of registered establishment.

B. Technical Expertise:

- A minimum of two full-time professionals with PhDs having 3+ years of minimum experience, one PhD in Structural Engineering & one PhD in Transportation/Geotechnical Engineering reputed institutions such as IITs or NITs or foreign universities.
- A minimum of one full time professional with at least three years of relevant experience and a Master's degree from reputed institutions such as IITs or NITs or foreign universities on board with specific expertise in structural health assessments, repair technologies, and concrete durability assessment.
- In-house experts with prior experience in durability modelling, service life predictions, and structural rehabilitation.

C. Durability and Material Specialization:

- Demonstrated focus on durability aspects of concrete structures. Should've completed at least one project in testing, designing & execution of corrosion mitigation & displayed performance-based results over a period of 2+ years verified by a reputed institute such as IIT.

D. Resources & Infrastructure:

- Access to state-of-the-art testing equipment for non-destructive and semi-destructive investigations.
- A dedicated team of at least 10 engineers, including technicians trained for field diagnostics, instrumentation, data interpretation, and reporting.

E. Minimum Turnover of the bidder:

- A minimum annual turnover of the participating bidder should not be less than Rs. 4 (Four) Crores.

F. The bidder has never been black listed/ debarred/ suspended by any Government/ Semi Government/GeM/PSU/Banks/Universities/Educational Institute/ Autonomous body/E-procurement/GEM Portals etc. due to any reason. The bidder or its OEM who is blacklisted/debarred/suspended once is not eligible to participate in this Bid with any kind of justification/judgment taken later on. Participating bidder will have to submit a declaration with bid on stamp paper of Rs. 100/- with duly notarized. No document will be accepted after the last date of the bid.

G. Bidder financial standing: The bidder should not be under liquidation; court receivership or similar proceedings should not be bankrupt. Bidder to upload undertaking to this effect with the bid on stamp paper of Rs. 100/- with duly notarized.

3. BASIC EVALUATION CRITERIA

Technical Proposal – 70% Weightage (QCBS Method)

S. No.	Criteria	Maximum Score
1.	Relevant Experience of the Firm in the related area of work Average Annual Turnover of the Last Three Financial Years: • Above 10 Cr = 10 Marks • 10 ≤ and > 7 = 7.5 Marks • 7 ≤ and > 5 Cr = 5 Marks • 5 ≤ and ≥ 4 Cr = 2.5 Marks • < 4 Crore = No Marks	10
2.	Number of Successful projects completed in the structural auditing and retrofitting with proof • Each project over 100 lacs will be given 3 Marks. The maximum marks for the sum of all projects shall be 10.	10
3.	Team Composition and Qualifications • Full-time PhD with specialization in Structural, Geotechnical/Transportation = 2 Marks for each (Maximum marks 04) • MTech/MSc in Structural Engg. with 2-year experience = 1.5 Marks for each (Maximum marks 03) • BTech in Civil Engineering with 5-year experience = 1 Marks each (Maximum marks 03)	10
4.	Experience of work done with IITs or NITs, or a Government Organization • Each project over 25 lacs will be given 3 Marks. The maximum marks for the sum of all projects shall be 10.	10
5.	Presentation before the Technical Committee • The agency should submit the technical reports of at least two completed projects done in a similar area before the presentation with satisfactory completion certificate.	30
	Total (Technical score)	**70**

Note:

- A minimum technical score of 55 out of 70 is required for the financial proposal to be considered.
- Only firms meeting the eligibility criteria and securing at least 30 marks in items 1–4 (i.e., pre-presentation score) will be invited for the presentation round.
- Due to highly skill and experience work in the subject area no relaxation to start-up/MSME in experience and turnover.
- The evaluation of the technical committee will be final and binding.

Presentation

All qualified bidders will have to present their proposal for safety auditing, bridge information, and management system before the Technical Committee at IIT Patna. The presentation will be of 20 minutes. Presentation will be assessed based on the following:

1. Project Understanding and Objectives
2. Technical Proposal and Methodology
3. Project Team and Expertise
4. Tools and Equipment
5. Timeline and Deliverables
6. Budget and Cost Justification
7. Experience and References
8. Innovation and Value Addition

Financial Proposal – 30% Weightage

The lowest financial bid will be awarded 100 points. All other bids will be scored proportionally using the formula:

Financial Score (Fs) = (Lowest Bid / Bid under consideration) × 100

Final Score Calculation

Final Score = (Technical Score) + (Financial Score × 0.30)

The bidder with the highest **Final Score** will be awarded the assignment after signing the agreement.

4. SUBMISSION REQUIREMENTS

Interested firms are requested to submit the following:

- Cover Letter – Clearly expressing interest in the assignment and acceptance of the terms.
- Company Profile – Including Certificate of Incorporation/Registration, firm structure, and relevant licenses.
- Statutory Information – GST number, PAN/TAN, and any other relevant tax registration details.
- Team Composition – List of key personnel with brief CVs of proposed experts (including PhD qualifications and relevant experience).
- Past Experience – Details of completed assignments in structural auditing, retrofitting, and bridge safety evaluation. Include client names, contact references, contract value, and duration.
- Equipment Inventory – List of NDT equipment and testing infrastructure available in-house.
- Technical Proposal – Describing the methodology, work plan, timeline, and deliverables (refer to Scope of Work in ***Appendix A***).
- Financial Proposal – As per ***Annexure C***, sealed in a separate closed envelope and clearly marked "Financial Proposal – Do Not Open with Technical Proposal".

Please ensure the Financial Proposal is submitted in a separate envelope or file, as per the QCBS evaluation protocol.

5. CONFLICT OF INTEREST

Interested firms are requested to submit the following:

- Where there is any indication that a conflict of interest exists or may arise, it shall be the responsibility of the Bidder to inform IIT Patna, detailing the conflict in writing as an attachment to this Bid.
- IIT Patna will be the final arbiter in cases of potential conflicts of interest. Failure to notify IIT Patna of any potential conflict of interest will invalidate any verbal or written agreement.

6. DEADLINE AND SUBMISSION

Submissions must be made in either of the following formats:

- **By Email**: Send the complete EOI (including all annexures and appendices) in a single, password-protected PDF file (excluding the financial proposal) to: **rnd_purchase@iitp.ac.in**
- **By Physical Delivery**: Submit printed copies of the Technical Proposal and Financial Proposal in separate sealed envelopes to:

  Assistant Registrar
  Research and Development Unit
  IIT Patna, Bihta, Patna- 801106

- **Deadline**: All EOI submissions must be received **on or before 07 July 2025, 5:00 PM IST**.

Important Notes

- Incomplete or late submissions will not be considered including postal delay.
- The decision of the technical evaluation committee shall be final and binding in case any interpretation or conflict arises during the selection process.
- Only shortlisted firms will only be invited for a presentation before the Technical Committee.
- The offer for EOI as per this document shall be valid for a period of three (3) months initially which may be extended further if required by IIT Patna.
- The EOI is not an offer and is issued with no commitment. IIT Patna reserves the right to withdraw EOI and or vary any part thereof at any stage. IIT Patna further reserves the right to disqualify any bidder, should it be so necessary at any stage.

FORMATS

FORMAT – 1
APPLICANT'S EXPRESSION OF INTEREST

To,

Associate Dean (R& D),
IIT Patna

Sub: Submission of Expression of Safety Audit of 45 nos. of Bridges and the Development of a Bridge Information and Management System

Dear

In response to the Invitation for Expressions of Interest (EOI) published on 28/06/2025 for the above purpose, we would like to express interest in carrying out the above proposed task. As instructed, are submitting of the following documents for the technical bid via email and financial bid in a separately sealed envelope:

1. Organizational Details (Format-2)
2. Experience in related fields (Format-3)
3. List of experts / consultants on payroll at least 3 (Format-4)
4. Financial strength of the organization (Format-5)
5. Additional information (Format-6)
6. Declaration (Format-7)

Sincerely Yours,
Signature of the applicant
[Full name of applicant]
Stamp.....
Date:

Encl.: As above.

Note: This is to be furnished on the letter head of the organization.

FORMAT – 2

ORGANIZATIONAL CONTACT DETAILS

S. No	Organizational Contact Details	
1.	Name of Organization	
2.	Main areas of business	
3.	Type of Organization Firm/ Company/ partnership firm registered under the Indian Companies Act, 1956/ the partnership Act, 1932	
4.	Whether the firm has been blacklisted by any Central Govt. / State Govt./PSU/ Govt. Bodies / Autonomous If yes, details thereof.	
5.	Address of registered office with telephone no. & fax	
6.	Address of offices in i) National Capital Region of Delhi ii) All other State/UT's	
7.	Contact Person with telephone no. & e-mail ID	

Enclose:-

1. Copy of Certificate of Incorporation.
2. Copy of Article of Association in respect of 3 above.
3. Undertaking in respect of 4 above.

Signature of the applicant

Full name of the applicant

Stamp & Date

FORMAT – 3

EXPERIENCE IN RELATED FIELDS

Overview of the experience of the Organization in all aspects related to structural auditing retrofitting and bridge safety evaluation					
S. No	Items	Number of Assignments during the last 5 years	Order Value of each assignment in Lakhs of Rs. (Enclose copy of each order)	Mention the name of Client/ Organization (Enclosed completion certificates	Remark
1	Experience of assignments of similar nature				
2	Experience in carrying out similar assignments in Government/IITs/ NITs/CFITs				

Decision of Evaluating Committee in ascertaining "similar nature" and "similar assignment" will be final.

Signature of the applicant

Full name of the applicant

Stamp & Date

FORMAT – 4

LIST OF EMPLOYEES ON PAYROLL

S. No	Name	Designation	Qualification	Relevant Experience
1				
2				
3				
4				
5				
6				
7				
8				
9				

* Attach a brief CV (limit to 2 pages) of all the employees mentioned in the table above.

Signature of the applicant
Full name of applicant
Stamp & Date

FORMAT – 5

FINANCIAL STRENGTH OF THE ORGANIZATION

S. No	Financial Year	Whether profitable Yes/NO	Annual net profit (in Crores of Rs.)	Overall annual turnover (in Crores of Rs.)
1	2022-23			
2	2023-24			
3	2024-25			

Note: Please enclose auditor's certificate in support of your claim.

Signature of the applicant

Full name of applicant

Stamp & Date

FORMAT – 6

ADDITIONAL INFORMATION

1. List all enclosures related to the previous sections.

S. NO	Description	No. of pages
1		
2		
3		

2. Additional information to support the eligibility (Not more than 2 pages).

Signature of the applicant

Full name of applicant

Stamp & Date

FORMAT – 7

DECLARATION

We hereby confirm that we are interested in competing for the "Safety Audit of 45 nos. of Bridges and the Development of a Bridge Information and Management System by IIT Patna"

All the information provided herewith is genuine and accurate.

Authorized Person's Signature.

Name and Designation:

Date of Signature:

Note: The declaration is to be furnished on the letter head of the organization.

FORMAT – 8

LIST OF EQUIPMENT INVENTORY

S No.	Name of Equipment	Make/Model	Year of purchase	Remarks
1				
2				
3				
4				
5				
6				
7				
8				

Signature of the applicant

Full name of applicant

Stamp & Date

Annexure A - Scope of Services for 45 bridges

STRUCTURAL CONDITION ASSESSMENT OF BRIDGES

1. Review & Inspection

1A. Review of available DPR, design and drawings to assess the existing condition.

1B. Detailed visual inspection as per IRC: SP: 35-2024, supported by drone-captured photo/video as required to identify observed structural defects, damages, and deterioration for further analysis. Skilled divers will be used for inspection of the foundation as needed (Note: Drone photography permissions shall be arranged by the client, and underwater inspections will not be feasible during periods of heavy monsoon or in turbid water conditions due to visibility and safety concerns).

2. Data Collection & Perusal

2A. Evaluation of bridge-specific parameters, including road category, number of lanes, load ratings, and type of substructure and superstructure, or any others as per site condition.

2B. Preparation of as built drawings of bridges, if not available. Tentative 2D AutoCAD drawings will be prepared based on site observations and measurements. Steel reinforcement details derivation is not in the scope, and these drawings will serve as indicative representations and not as precise construction documents.

2C. Assessment of environmental and hydrological parameters, including climate impact, and exposure conditions.

2D. Component condition investigation & observation covering bearings, expansion joints, railings, approach roads, lane markings, and overall structural wear.

3. Non-Destructive Testing (NDT) Strategy

3A. Identification of critical locations for NDT based on visual inspections, data collection & structural parameters.

4. Conducting Non-Destructive Testing (NDT) for various parameters

4A. ***Strength & Structural Integrity Evaluation:***

- **Rebound Hammer test** for assessment of near-surface concrete strength: *10 – 15 tests per span*.
- **Impact Echo/Ultrasonic Pulse Velocity (UPV) test** for detection of internal defects and concrete homogeneity & material uniformity: *3 – 5 tests per span or as per requirement*
- **Capo/Concrete Core test** for assessment of in-situ strength: *3 – 5 tests per span or as per requirement*
- **Ground Penetrating Radar** for detailed assessment of distressed concrete: *As per requirement*

4B. ***Durability & Corrosion Susceptibilit***y:

- **Half Cell Potential test** for evaluation of corrosion probability in embedded reinforcement: *5 – 10 tests per span or as per requirement*
- **Carbonation test** for pH assessment to determine the depth of carbonation and potential deterioration: *5 – 10 tests per span or as per requirement*

4C. ***Expansion Joint and Bearing Thickness Evaluations***

5. Conducting Load Testing of Bridges

- Analysis of each bridge to identify the exact location and send data to the site team to position the load test vehicle on each of the bridges for maximum bending and maximum shear force.
- Strain Monitoring of the span of bridges using high precision foil-type strain gauges. A maximum of 6-10 strain gauges per bridge will be installed.
- Testing will be conducted on one span per bridge, focusing on the mid-span. Two trucks (approx. 35 tonnes loads each) will be used. The structural response will be monitored during a single pass of the loaded vehicle
- For academic purposes and calibration of the numerical model, the vibration of the bridge under regular running load and load testing truck will also be studied.

BRIDGE INFORMATION AND MANAGEMENT SYSTEM (BIMS)

6. Implementation of an Online Dashboard

7A. Development of a AI/ML web-based platform (HTML/WordPress) for centralized data management with automatic Google Map navigation to the Bridge. The key details of the platform are given in the Table.

7B. Compilation of all bridge assessment reports into a structured and easily accessible format.

7C. Secure remote access for stakeholders to retrieve and review bridge condition data.

Sr. No	Tool type	Tool Name	Feature
1	Online	Online viewer	Import bridge and inventory information via web system from manual information for ex. Excel sheets, other database formats etc.
2	Offline	Mobile app	Add the bridge and inspection photo
			Add/ Edit inventory information of the Bridge
			Add detailed inspections for all the components of the structure
3	Offline	Mobile app	User experience and ease of use in offline mode 1. Custom forms 2. Adding notes 3. Filtering the components and defects as per the user selection 4. Adding sketch of the defect, using different colors 5. Saving inspections information in offline mode 6. Image lookup to select the options by tapping 7. Single click synchronization to central repository
4	Offline	Mobile app	Background calculation of the SRN (Star Rating Number)
5	Offline	Mobile app	Email alerts for urgent action needed Bridges (Email will trigger once data sync back to the server)

			One click synchronization to server (including photos)
			Download Bridge inventory information (Preparing for the field inspection)
6	Offline	Mobile app	Add/ Edit Bridge Inventory
			Add Detailed/ Routine inspection (Flexibility of the type of inspection that is needed)
			Auto-arrange bridges based on the proximity
			Settings on the app are related to the user preferences
7	Offline	Mobile app	Show Bridges on Map
			Seamless data synchronization, including Photos
			Automatic Google map navigation to the bridge
		Mobile App (for future use)	Flexibility to add more assets to the same app
8	Online	Web	List and see all bridges with photos and videos
			Flexibility in searching for bridges (filter options)
			Overview of the data collected in the field
			Detailed inspection Details
			Routine inspection details
			Visual evaluation to evaluate before and after treatment with photos
			To keep a record of maintenance activities on the bridge
			Inspection Reports
			View inspection video
			Screening of Bridge information with customized methodology (we use IRC: SP:35-2024 manual in this case) 1. Assigning applicable treatments based on the condition 2. Treatment costs with estimated budget 3. Treatment summary
9	Online	Web	Screening report with estimated budget and treatments
			Custom Reporting (Includes) 1. Summary of Bridges in the State 2. Bridges by length 3. Bridges by Structures 4. Bridges by Star Rating number 5. By Bridge type 6. Downloading Detailed inspection to PDF 7. Downloading routine inspection to PDF

INTERPRETATION, BRIDGE RATING, AND STRENGTHENING STRATEGY

7. Data Interpretation and Inference

8A. Integration of NDT and visual inspection findings for a comprehensive structural condition assessment.

8B. Analysis of observed defects with respect to mechanical properties (strength, homogeneity) and durability risks (corrosion, porosity, contamination).

8C. Rating and condition assessment of each bridge based on the findings and evaluating the **Bridge Health Index (BHI)** and **Maintenance Priority Index (MPI)** as per IRC: SP: 35-2024.

8. Formulation of Strengthening and Rehabilitation Plan

9A. Development of strengthening recommendations based on structural analysis and detailed condition assessment.

9B. Preparation of Bill of Quantities (BOQ) specifying materials, methodologies, and cost estimations.

TIME SCHEDULE

A draft report after completion of work would be submitted within 9 months of the date of signing of agreement. The major findings of the draft report should be shared with the IIT Patna. Feedback from the IIT Patna should be taken into account by the Consultant in the final report in a substantive manner and for the record. The consultant will submit the final report within 10 months of the date of signing of agreement, after taking into account the comments of the IIT Patna on the draft report.

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Patna	Construction of Chiraiyatand Flyover to Gandhi Maidan via Mithapur ROB, Station road, Exhibition Road in the District of Patna	25-604568	85-136321	25 x 30 Mtr.	750	Simply Supported	8.45	YES	RCC Beams & Slab	Concrete Pier	Pile Foundation	Flyover	POT/PTFE bearing	07 Years
2	Patna	Construction of Flyover between Mithapur Flyover & Bhikharithakur (Yarpur) Via R-Block Junction in the District of Patna	25-600441	85-12630	55 x 30 Mtr.	1650	Simply Supported	20.5	YES	PSC I Girder	Concrete Pier	Pile Foundation	Flyover	Elastomeric bearing	02 Years
3	Patna	Construction of Flyover between Chiraiyatand ROB and Flyover in the District Patna	25-604568	85-141779	25 x 30 Mtr.	750	Simply Supported	20.5	NO	RCC Beams & Slab	Concrete Pier	Pile Foundation	Flyover	Elastomeric bearing	17 Years
4	Patna	Kankarbagh flyover in the District of Patna	25-603253	85-148984	9 x 25 + 3x35Mtr	330	Simply Supported	20.5	NO	PSC I Girder	Concrete Pier	Pile Foundation	Flyover	POT/PTFE bearing	15 Years
5	Bhagalpur	Construction of 4-lane high level RCC bridge 1.84km & Approach Road 10.87Km & Guide Bunds at VijayGhat, Naugachia over river Kosi in the district of Bhagalpur.	25.408966	87.055886	35x52.550 M	1839.25	Simply supported	20.50	Yes	PSC segmental Box girder	Concrete Pier	Well Foundation	River Bridge	POT PTFE	6 Years

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
6	Bhagalpur	Construction of H.L. R.C.C. Bridge in Kharik Block at Chorhat Ghat on River Koshi in the District of Bhagalpur	25.414393	86.990615	12 x 24.75 M	297	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Well Foundation	River Bridge	Elastomeric bearing	10 Years
7	Bhagalpur	Construction of H.L. R.C.C. Bridge (18x24.75m) connecting Lokmanpur Panchayat to Vijayghat Bridge in the District of Bhagalpur	25.432984	87.050263	18 x 24.75 M	445.5	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Well Foundation	River Bridge	Elastomeric bearing	3 Years
8	Bhagalpur	Construction of H.L. R.C.C. Bridge in Sanhaula Block on Sanhaula - Baisa - Hanwara Road on River Gerua in the District of Bhagalpur	25.082349	87.215075	13 x 21.00 M	273	Simply supported	12.00	Yes	RCC I Girder	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	10 Years
9	Banka	Construction of H.L. R.C.C. Bridge in Rajaun Block on English More to Funasia Road on River Chanan in the District of Banka	24.978077	86.922879	16 x 21.75 M	348	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	10 Years
10	Banka	Construction of H.L. R.C.C. Bridge (11x36.64m) on 178th Km of NH 333 A on River Chanan in the District of Banka	24.892511	86.938866	11 x 36.64 M	403.04	Simply supported	18.00	Yes	PSC I Girder	Concrete Pier	Pile Foundation	River Bridge	POT PTFE	1 year

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
11	Munger	Construction of R.O.B.Bariyarpur in Lieu of L/c No.15 BT at km 347/10-12 Between Bariyarpur-Jamalpur station on Kharagpur-Bariyarpur - Jamui Road.	25.280063	86.572822	10x25 M+2x14.4M+ 1x30M + 1x21.2 M + 4x18.75M	405	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Pile Foundation	R.O.B.	Elastomeric bearing	8 Years
12	Munger	Construction of H.L. R.C.C. Bridge (15x21.75m) on Jhaua Bahiyar Harinmaar Road South of Gogari Jamalpur Temple on Tarbanna ghat in the District of Munger	25.41694	86.625632	15x21.75M	326.25	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	8 Years
13	Jamui	Construction of R.C.C. Bridge in between Kendua-Dahua on River Sukanar in the District of Jamui	24.77662	86.277251	11x24.75M	272.25	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	16 Years
14	Jamui	Construction of R.C.C. Bridge on 2nd KM of Khaira Sono Road on Nariyanaghat in the District of Jamui	24.873724	86.233601	19x24.75M	470.25	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	16 Years

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
15	Jamui	Construction of R.C.C. Bridge on 10th KM of Khaira Sono Road on Mangobandar Tihia in the District of Jamui	24.81066	86.275058	11x24.75M	272.25	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	16 Years
16	Jamui	Construction of R.O.B. Jamui on Sikandara Lakshmipur Khadagpur road in the District of Jamui	24.96177	46.258926	21 x25.00 M +1x30.00M	555	Simply supported	17.200	Yes	RCC I Girder	Concrete Pier	Pile Foundation	R.O.B.	Elastomeric bearing	16 Years
17	Jamui	Construction of R.C.C. Bridge on 17th KM on Kenduar Belthar on Khaira sono road Over River Barnar in the District of Jamui	24.764338	86.29469	13x24.75M	321.75	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	09 Years
18	Jamui	Construction of R.C.C. Bridge in Jhajha Vidhan Sabha on Road Dhobghat Nijuara Road over river Barnar in the District of Jamui	24.835331	86.284703	24x24.75M	594	Simply supported	8.45	Yes	RCC I Girder	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	14 Years
19	Jehanabad	Construction of H.L. R.C.C. Bridge near Banshi Bigha on Road Makhdumpur -Sonwa-Bauri -Hulasganj road over river Falgu in the District of Jehanabad	25.083051	85.104045	16 X 24.75 Mtr.	396	Simply supported	8.45	No	RCC Beams & Slab	RCC	Well Foundation	River Bridge	Elastomeric bearing	14 Years

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
20	Jehanabad	Construction of R.C.C. Bridge at 7th Km of Ghoshi Sukhiawa -Hulasganj road over River Falgu in the District of Jehanabad	25.117192	85.116553	14 X 24.75 Mtr.	346.5	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Well & Pile Foundation	River Bridge	Elastomeric bearing	20 Years
21	Jehanabad	Construction of H.L. R.C.C. Bridge at 16th Km in Ratanbigha on Ghoshi Islampur Giriyak Road over River Falgu in the District of Jehanabad	25.15739	85.11881	15 X 18 + 4 X 14 Mtr.	326	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	3 Years
22	Aurangabad	Construction of 4-lane H.L. R.C.C. Bridge Between Daudnagar and Nasriganj over River Sone in the District of Aurangabad and Rohtas	25.056282	84.358518	50 X 58 Mtr.	2900	Simply supported	20.5	Yes	RCC Beams & Slab	RCC	Well Foundation	River Bridge	Elastomeric bearing	5 Years
23	Gaya	Construction of Bataspur-Silaunja RCC Bridge in the District of Gaya	24.683426	85.02234	17 X 21.75 Mtr.	369.75	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	6 Years
24	Gaya	Construction of RCC Bridge on Rajbigha-Beldar Bigha Road in the District of Gaya	24.615326	84.812435	20 X 21.75 Mtr.	435	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	06 Years

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
25	Gaya	Construction of RCC Bridge at 69th Km of Amba-Gaya Road in the District of Gaya	24.812104	84.838587	19 X 21.75 Mtr.	413.25	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	6 Years
26	Gaya	Construction of RCC Bridge at 70th Km of Amba-Gaya Road in the District of Gaya	24.756862	84.853937	16 X 21.75 Mtr.	348	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	7 Years
27	Gaya	Construction of RCC Bridge at 13th KM of Gaya-Paraiya-Guraru Road (MDR) in the District of Gaya	24.812104	84.838441	14 X 18.75 Mtr.	262.5	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	14 Years
28	Gaya	Construction of RCC Bridge at 11th KM of Gaya-Paraiya-Guraru Road (MDR) in the District of Gaya	24.811822	84.864693	21 X 13.5 Mtr.	283.5	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	
29	Gaya	Construction of RCC Bridge on Fatehpur-Mohanpur-Barachatti Road (MDR) in the District of Gaya	24.577559	85.088004	23 X18.75 Mtr.	431.25	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	8 Years

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
30	Gaya	Construction of RCC Bridge on Cherki-Dariyapur-Baijudham-Gurua Road (MDR) in the District of Gaya	24.66614	84.813748	23 X 18.75 Mtr.	431.25	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	07 Years
31	Gaya	Construction of RCC Bridge on Balabigha to Khanetu Road in the District of Gaya	24.873721	84.846202	16 X 18.75 Mtr.	300	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	11 Years
32	Gaya	Construction of RCC Bridge on Sripur to Keni Road in the District of Gaya	24.972485	85.075668	22 X 21.75 Mtr.	478.5	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	6 Years
33	Gaya	Construction of RCC Bridge near Bodhgaya on River Niranjana in the District of Gaya	24.700886	84.994064	47 X 7 Mtr.	329	Continuous	8.45	No	-	-	Open Foundation	River Bridge	-	NOT KNOWN
34	Gaya	Construction of RCC Bridge near Ghugaritand in the District of Gaya	24.77187	85.010216	14 X 37.5 + 2 X12 Mtr.	549	Simply supported	8.45	Yes	RCC Beams & Slab	RCC	Well Foundation	River Bridge	Elastomeric bearing	40 Years
35	Gaya	Construction of RCC Bridge Gaya-Manpur Road in the District of Gaya	24.71797	85.0178513	17 X 32.8 Mtr.	557.6	Simply supported	25	Yes	RCC Beams & Slab	RCC	Pile Foundation	River Bridge	Elastomeric bearing	8 Years

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
36	Nawada	Construction of H.L. RCC Bridge near Dariyapur on Warsaliganj-Kharat Road over River Sakri in the District of Nawada	25.002733	85.584982	20 X 18.75 Mtr.	375	Simply supported	8.45	YES	RCC Beams & Slab	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	12 Years
37	Nawada	Construction of H.L. RCC Bridge 16x18 m at 14th KM of Manjhway Govindpur road in the District of Nawada	24.770141	85.440407	16 X 18 Mtr.	288	Simply supported	8.45	YES	RCC Beams & Slab	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	1 Year
38	Nalanda	Construction of RCC Bridge at 5th KM of Giriyak Parwati road over River Sakri in the District of Nalanda	25.052722	85.567522	35 x 25.4 Mtr.	889	Simply supported	8.45	YES	RCC Beams & Slab	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	13 Years
39	Nalanda	Construction of H.L. RCC Bridge at 12th KM of Rajgir Giriyak road over River Panchane in the District of Nalanda	25.033050	85.522989	14 x 25.0 Mtr.	350	Simply supported	12	YES	RCC Beams & Slab	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	13 Years
40	Nalanda	Construction of R.C.C. Bridge near Nanand Village on Pawapuri Drikundakpur road over River Panchane in the District of Nalanda	25.088856	85.519827	10 x 25.50 Mtr.	255	Simply supported	8.45	YES	RCC Beams & Slab	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
41	Lakhisarai	Construction of H.L. R.C.C. Bridge 18x24.75 M Between Maliya- Nagardar and Tetarhat over River Kiul in the District of Lakhisarai	25.081438	86.131129	18 x 24.75 Mtr.	445.5	Simply supported	8.45	YES	RCC Beams & Slab	Concrete Pier	Pile Foundation	River Bridge	Elastomeric bearing	9 Years
42	Lakhisarai	Construction of H.L. R.C.C. Bridge 12x21.75 M near Surjichak Village in Piparia Block over Harohar River in the District of Lakhisarai	25.217645	86.153484	12 x 21.75 Mtr.	261	Simply supported	8.45	YES	RCC Beams & Slab	Concrete Pier	Well Foundation	River Bridge	Elastomeric bearing	6 Years
43	Kaimur	Construction of R.O.B. On Mohania Bhabhua Mohania Chausa Road in the District of Kaimur	25.168972^0	83.625887^0	6 x 24.75 Mtr.	148.5		8.45		RCC Beams & Slab	RCC	Pile Foundation	R.O.B.	Elastomeric bearing	13 Years
44	Bhojpur	Construction of R.O.B. In Lieu of S-49th 593/9 Km South of Ara Railway Station on Ara Sasaram Road in the District of Bhojpur	25.546884^0	83.653719^0	22 x 18.75 Mtr.	412.5		8.45		RCC Beams & Slab	RCC	Pile Foundation	R.O.B.	Elastomeric bearing	23 Years

Annexure B – List of Bridges

Sl. No.	District	Road/Bridge Name	Latitude	Longitude	Bridge length (Span)	Bridge length (m)	Types of Super structure	Width (in Mtr.)	Drawing Availability	Type of superstructure	Type of sub-structure	Type of foundation	Type of span	Type of bearing	Year of commissioning/ age of Bridges as on Oct.' 2024
45	Bhagalpur	Construction of R.O.B.at Sultanganj in Lieu of L/c No.10 BT at km 330/1-5 Between Sultanganj-Ganganiya station on Bariyarpur -Sultanganj - Bhagalpur Road in Bhagalpur District	25.240744	86.729124	5x21.250M +10x21.875M + 2x25.00 M +1x30.50m	406.75	Simply supported	12.00	Yes	RCC I Girder	Concrete Pier	Pile Foundation	R.O.B.	Elastomeric bearing	16 Years
		Total Length (m)				**23291**									

Annexure C - Financial Proposal

The following table shows the financial proposal for the assessment of 45 bridges:

S. No.	Description	Unit	Quantity	Rate (INR)	Amount (INR)
PART I: STRUCTURAL CONDITION ASSESSMENT					
1	Mobilization of Team (Travel, Accommodation, Car Rental)	Bridge	45		
2	Review of available DPRs, designs & drawings	Bridge	45		
3	Visual Inspection & Condition Assessment of Bridges	Bridge	45		
4	Aerial Survey of bridges using drones	Bridge	45		
5	Underwater survey using Divers/ROV	Bridge	45		
6	Hiring of MBIU & Cherry Picker	Month	9.0		
7	Non-Destructive Tests (Rebound Hammer, UPV, Impact Echo, Carbonation, HCP, GPR, CAPO). Please see the scope of work for the number of NDT tests per span.	Bridge	45		
8	Load Testing using Strain Gauges & Dial Gauges (One span per bridge and extra charge for additional span if any)	Bridge	45		
9	As-Built Drawings	Bridge	6		
				Part I Total	
PART II: BRIDGE INFORMATION AND MANAGEMENT SYSTEM (BIMS)					
1	Digital Dashboard Integration for Centralized Monitoring and Analysis of All NDT and Bridge Inspection Data, Enabling Real-Time Condition Assessment and Strategic Maintenance Planning.	Project	1.0		
				Part II Total	
PART III: INTERPRETATION, BRIDGE RATING AND STRENGTHENING STRATEGY					
1	NDT Data Analysis & Report	Bridge	45		
2	Strengthening/ Retrofitting Design Drawings	Bridge	45		
3	Formulation of Estimates	Bridge	45		
				Part III Total	
				Grand Total (I + II + III)	