



**GOVERNMENT OF WEST BENGAL
IRRIGATION & WATERWAYS DIRECTORATE
Office of the Executive Engineer
West Midnapore Division
Sekhpura, Midnapore, Paschim Medinipur
Tel & Fax No-(03222) 275373
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NOTICE INVITING QUOTATION

**No. WBIW/EE/WMD/NIQ-02/2025-26
[Budget Quotes]**

Memo No. 1845^E/WBIW/WMD

Dated. 18.09.2025

Sealed quotations for rates are hereby invited by the Executive Engineer, West Midnapore Division, Irrigation & Waterways Directorate, Sekhpura, Midnapore, Paschim Medinipur from the bonafide & resourceful agencies to ascertain unit rate **[budget quotes]** for official purpose in connection with the work : **“Conducting High Precision LiDAR based Drone Survey for Ghatal Circuit Embankment for a length of 21.00 Km having total 220-meter corridor width in Ghatal municipal area, P.S.- Ghatal and Dist – Paschim Medinipur in c/w Ghatal Master Plan”**

Interested quotationers are required to apply for quotation papers to the undersigned enclosing all papers satisfying the eligibility criteria as given below:

Eligibility criteria:

- 1.The quotationer having experience of dealing with similar type of work in any Government/Government undertaking/Public sector, Zilla Parishad etc [Agency has to furnish self attested copy of such supply order/completion certificate etc] will be preferable.
- 2.The intending quotationer should apply for quotation papers in respective Letter Heads enclosing self-attested photocopies of valid Trade License, PAN, valid PT, GST, IT etc. as applicable.

Time schedule of quotation

- | | |
|---|-----------------------------------|
| 1) Last date & time of receiving application: | 25.09.2025 up to 4:00 p.m. |
| 2) Last date & time of collecting quotation paper: | 25.09.2025 after 5.30 p.m. |
| 3) Last date & time of receiving quotation paper: | 26.09.2025 up to 3:00 p.m. |
| 4) Date & time of opening quotation: | 26.09.2025 after 3:30 p.m. |

Terms and Conditions:

Sl. no.	Name of Item	For Budgetary provision rate to be submitted per KM (exclusive of GST & Cess etc.)	Earnest Money Deposit	Time will be allowed during actual execution (in days)	Eligibility of Intending Bidder
1	2	3	4		6
1.	Data Acquisition: -Drone +DGPS+Pilot+Equipment	To be submitted by the Bidders	N.A.	15 days from the Date of Commencement.	Quotation is here by invited from the Bonafide contractors / bidders having experience / credential of execution of similar nature of item/ work within the last 5 years.
2.	Data Processing & submit of Report (6 Copies)	To be submitted by the Bidders			

(*) **Rate quoted by the bidder should be inclusive of Mobilization of machineries, overhead charges, if any, contractors profit and all other incidental charges but excluding of all taxes like GST, CESS etc., No additional payment of any variety will be considered except the rate submitted by the bidder.**

- 1) The schedule of item and other documents are to be collected by the eligible quotationer free of cost from the office of the Executive Engineer, West Midnapore Division, Irrigation & Waterways Directorate, Sekhpure, Midnapore, Paschim Medinipur
- 2) The eligible quotationers **should quote their rate both in figures and in words.** Any correction in the rates must be duly signed by the quotationers and each page of the schedule are to be signed by the quotationer along with his seal.
- 3) No quotation paper will be submitted by post / e-mail / fax
- 4) No quotation paper will be issued after expiry of date and time mentioned above.
- 5) Duly filled up sealed quotation as supplied from this office is to be submitted with a forwarding letter to the office of the undersigned.
- 6) Accepting Authority i.e. The Superintending Engineer, Western Circle-II, I.&W. Directorate, Midnapore, Paschim Medinipur reserves the right to accept or reject any or all quotations without assigning any reasons whatsoever.
- 7) Informal/conditional quotation is liable to summarily rejected.
- 8) Any letter or other instrument submitted separately in modification of sealed quotation may not be entertained.
- 9) Rate is only to ascertain unit rate for official purpose only.

Additional Terms & Condition (Special T.O.R)

1. PROJECT OVERVIEW:

The work entails a high-resolution aerial LiDAR survey of the Ghatal Retaining Wall from Ch. 0.00 km to Ch. 21.00 km, covering a 21 km riverfront with a 110 m buffer on either side (total corridor width \approx 220 m), using an eye-safe airborne laser scanner integrated with high-precision inertial navigation and multi-constellation GNSS/IMU trajectory processing; dual-frequency GNSS receivers operating in static and RTK modes will establish ground control points and benchmarks achieving better than 5 cm horizontal and 10 cm vertical accuracy, while the LiDAR mission, flown at 60–90 m AGL with 80 % forward and 70 % side overlap, will deliver a ground point density of at least 200 pts m⁻² and an orthophoto ground-sampling distance of 2–3 cm/pixel, meeting an absolute vertical accuracy of \leq 7.5 cm. The scope includes reconnaissance, primary control establishment, aerial data acquisition over the full channel, floodplain and embankments, trajectory and point-cloud post-processing, classification and derivation of a bare-earth DEM, DSM, 0.5 m contours, longitudinal profile and cross-sections at 50 m spacing, depth maps, and the compilation of a high-resolution orthophoto, classified LAS/LAZ cloud, all raw GNSS and flight logs, comprehensive metadata, accuracy assessments and a final methodological report, supplied in digital form with two hard-copy drawing sets, all to be executed and submitted to the satisfaction of the Engineer-in-Charge.

2. OBJECTIVE

To conduct a high-precision LiDAR-based drone survey over a 21 km embankment stretch in Ghatal, West Bengal, with the aim of generating accurate topographical maps, cross-section reports, and other related geospatial datasets. The total survey corridor spans 220 meters in width along the length of the embankment.

3. SCOPE OF SERVICES

1. Pre-Survey Preparation:

- Route planning and flight path generation based on site access and vegetation cover
- Site reconnaissance and coordination with local authorities for approvals
- Mobilization of survey drones, DGPS equipment, and crew to Ghatal
- Establishment of Ground Control Points (GCPs) using DGPS/RTK GNSS receivers for precise georeferencing

2. Drone LiDAR Data Acquisition:

- Deployment of UAVs equipped with high-resolution LiDAR sensors
- Coverage of a 21 km linear stretch, with a 220 m corridor width to ensure full embankment profile and adjacent floodplain topography, total area of 462 hectares.
- Multiple flight missions to ensure sufficient point density and overlap
- Data acquisition under favourable weather and light conditions to minimize noise and errors

3. Post-Processing & Geospatial Analysis:

- LiDAR point cloud classification into ground, vegetation, water, and man-made features
- Generation of accurate Digital Terrain Models (DTM) and Digital Surface Models (DSM)
- Extraction of cross-sectional profiles at regular intervals (e.g., every 50-100 m or as specified)
- Generation of topographical contour lines at required intervals (e.g., 0.25m / 0.5m)

4. Deliverables:

formats

- High-resolution Point Cloud
- Digital Terrain Model (DTM)
- Ortho mosaic Map
- Digital Surface Model (DSM)
- Detailed Topography Report
- Contour Map
- Cross-sections every 50 meters
- House/Structure Count with legends and labelling

4. **TECHNICAL NOTES & METHODOLOGY**

- LIDAR Point Density: Minimum 150-200 pts/m² to ensure high-detail surface accuracy
- Flight Altitude & Overlap: Typically flown at 60-100 meters AGL with 70-80%
- lateral overlap
- Accuracy Standards:
- Vertical Accuracy: ± 5 -10 cm (dependent on GCP distribution and terrain)
- Horizontal Accuracy: ± 10 -15 cm with georeferenced GCP integration
- Coordinate System: WGS84 / UTM Zone 45N (or as specified by the client)
- Software: Post-processing will be conducted using industry-leading tools such as DJI Terra, Global Mapper, QGIS, and Pix4D.

5. **Report Format & Delivery:**

- Reports and other necessary files shall be shared digitally via Google Drive and shall include the same outputs (Topography, Contours, Cross Section etc) as was delivered after the initial demo mission.

6. **LiDAR Drone Specifications:**

1. Max Flight Time: 55 minutes
2. Max Flight Altitude: 5,000 m (with 2110s props, ≤ 7.4 kg) / 7,000 m (with 2112 props, ≤ 7.2 kg)
3. Max Horizontal Speed: 23 m/s
4. Max Ascent Speed: 6 m/s
5. Max Descent Speed: Vertical 5 m/s; Tilted 7 m/s
6. Wind Resistance: 12 m/s
7. IP Rating (Aircraft): IP55
8. GNSS: GPS + GLONASS + BeiDou + Galileo
9. Operating Temp: -20 °C to 50 °C
10. Payload Configurations: single/down/up combinations (downward/upward gimbals)
11. Safety: Night-vision FPV, 6-direction sensing (CSM Radar to 30 m), arm-lock, redundancy design
12. Positioning Accuracy: RTK fixed: Vert ± 0.1 m, Hor ± 0.1 m; Vision: Vert ± 0.1 m, Hor ± 0.3 m; GNSS: Vert ± 0.5 m, Hor ± 1.5 m
13. Size & Weight: Unfolded 810×670×430 mm; Folded 430×420×430 mm; empty ~ 3.77 kg; with 2× TB65 ~ 6.47 kg; max take-off 9.2 kg
14. Detection Range: 450 m @50% refl., 250 m @10%; max 500 m

15. Point Cloud Rate: Single return 240,000 pts/s; Multi 1,200,000 pts/s
16. Accuracy (150 m): Horizontal 5 cm; Vertical 4 cm
17. LiDAR Features: up to 5 returns, 20 MP 4/3 RGB cam, non-repetitive & repetitive scan modes, real-time point cloud coloring
18. Design: LiDAR + IMU + RGB camera on 3-axis gimbal

WMB 18.9.25

**Executive Engineer
West Midnapore Division,
Midnapore, Paschim Medinipur
Irrigation & Waterways Directorate**

Memo No. 1845^E/WBIW/WMD/1(10)

Date: 18.09.2025

Copy forwarded for favour of information and necessary action to:

1. Chief Engineer-South-West, I & W Dte. Khasjanganal, Midnapore, Paschim Medinipur,
2. Superintending Engineer, Western Circle,-II, I & W Dte. Midnapore, Paschim Medinipur.
3. Sabhadhipati, Paschim Medinipur Zilla Parishad, Midnapore,
4. Executive Engineer, Jhargram Flood Management & Planning Division, I & W.Dte., Midnapore, Paschim Medinipur.
5. Executive Engineer, K.K.B. Project Division, I&W Dte. Temathani, Sabang, Paschim Medinipur.
6. Sub- Divisional Officer. /Lachmapore Irrigation Sub-Division, (I&W. Dte.) Midnapore, Paschim Medinipur
7. Sub Divisional Officer / Investigation Sub-Division No.-II, (I&W Dte,) Midnapore, Paschim Medinipur.
8. Sub Divisional Officer. / Ghatal Irrigation Sub- Division, I&W Dte, Ghatal, Paschim Medinipur.
9. Secretary, Midnapore Sadar/ Ghatal/ Jhargram/ Kharagpur Sub- Divisional contractors' Association.
10. Office Notice Board/ Divisional Accounts Officer / Estimating Section /Hd. Clerk / Cash Section of West Midnapore Division.

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**Executive Engineer
West Midnapore Division,
Midnapore, Paschim Medinipur
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