RFP No. NIUA/AHCP/RFP: 02

Date: March 03, 2020

Request for Proposal for appointment of a Drone / Terrestrial Lidar Survey Agency for undertaking a Drone Survey for the Walled City of Ahmedabad

Project Name: Preparation of Heritage Conservation Plan for the Walled City of Ahmedabad

Client: National Institute of Urban Affairs (NIUA)

Location of Assignment: Ahmedabad (project city)

Duration of Engagement: April 2020 - August 2020

Authorized point of contact: Sr. Project Coordinator, NIUA

(Heritage Conservation Plan for the Walled City of Ahmedabad)

A. Background

The Walled City of Ahmedabad was inscribed by UNESCO as a World Heritage City in 2017, making it the first Indian city to receive this honour. Following this, UNESCO required the city to strengthen its municipal structure in lieu of safeguarding the physical and intangible heritage of the city. The Ahmedabad Municipal Corporation set up the Ahmedabad World Heritage City Trust particularly for this purpose.

The Ahmedabad Municipal Corporation (AMC) and the Ahmedabad World Heritage City Trust (AWHCT) approached the National Institute of Urban Affairs (NIUA) in December 2018 with the task of preparing the Heritage Conservation Plan/Local Area Plan for the Walled City of Ahmedabad. NIUA is an autonomous body and premier think-tank of the Govt. of India on the urban sector. It provides advisory support on evidence based policy making and acts as a knowledge repository. NIUA frequently conducts independent research on key urban issues related to infrastructure policy & planning, municipal finance & governance, land use & transportation, urban livelihoods, environment & climate change, and smart cities etc. NIUA is also the National Project Management Unit for the Heritage City Development and Augmentation Yojana (HRIDAY) that is targeted towards revitalization of historic cities, along with other heritage-sensitive and responsive projects and holds good expertise in the same. NIUA is also a strategic partner of the Ministry of Housing & Urban Affairs for capacity building at several levels.

In order to prepare the Heritage Conservation Plan for the walled city of Ahmedabad, NIUA needs to prepare an accurate base map for the walled city. It is proposed to do this using a drone imagery. This RFP is issued to identify and appoint a competent firm that can carry on a drone survey for the Walled City. The drone firm / agency is also expected to facilitate the work of preparation of the Base Map for the Walled City as indicated in the Scope of Work.

B. Scope of Work

The Agency will be responsible for conducting a drone survey for Walled City and the buffer areas for developing the base layer for the Walled City of Ahmedabad. The area of the study is approximately 12.43 sq km (Map showing the extent enclosed). The agency will be responsible for preparing and supporting the project during its duration by working closely with the teams based in Ahmedabad.
The Agency is expected to deliver an ortho-rectified and combined image of the Walled City using drone technology, image processing using the stereo image acquisition using drone technology (3cm Ground Sampling Distance or better resolution). The following must be established.

1. Establishing of ground control network for drone survey:
   Identification and marking of Ground Control Points (GCP) on the area of interest. Minimum number of GCP should be 25-30. It should be taken with double frequency Digital Global Positioning System (DGPS).

2. Location of GCPS:
   Required number of GCPs shall be marked on the ground using DGPS method at regular/random interval throughout the project area. Control chart shall be prepared choosing GCPs with easy access as well as easy identification on image. Control points shall be established on ground based on the control chart preferably on permanent structure, culvert corner, road barrier, bridge corner, rock-in-situ and other definable points like tri-junctions, road-junctions etc.

3. Clearance for drone flights:
   As the project involves aerial photography data acquisition using Unmanned Aerial Vehicle, it is mandatory to obtain necessary clearances from local authority and other applicable agencies. Necessary clearances/permissions shall be obtained by the firm from authorized agencies. Necessary support will be provided by NIUA.

4. Criteria for acquiring the Image

<table>
<thead>
<tr>
<th>Components</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coverage area</td>
<td>Approximate 1245 hectares (Map enclosed)</td>
</tr>
<tr>
<td>Pixel size / resolution</td>
<td>3 cm or better</td>
</tr>
<tr>
<td>Flight height</td>
<td>Not more than 215 ft.</td>
</tr>
<tr>
<td>Camera</td>
<td>High resolution camera</td>
</tr>
<tr>
<td>Photography condition</td>
<td>Ground must be free of fog, snow, haze, dust</td>
</tr>
<tr>
<td></td>
<td>Data to be collected in good light conditions.</td>
</tr>
<tr>
<td>Overlapping</td>
<td>75 % forward and 75 % side</td>
</tr>
<tr>
<td>Point Cloud</td>
<td>1500/sqm (min)</td>
</tr>
</tbody>
</table>

5. Image processing and ortho-rectification:
   - Pre-processing of acquired images
   - Ortho-rectification of acquired images - Raw Images should be processed in Ultra HD mode only for producing Ortho Rectified image
   - Digital surface model, digital terrain models generation (with Global Coordinate system – datum: WGS84, projection: UTM43(N))
   - The GCPs established and the Digital Elevation Model (DEM) created should be used for ortho-rectification of imagery while mosaicing and creating tiles
   - Image strips should be mosaiced for contiguity during the ortho-rectification process
   - Colour balancing should be done for the images to achieve homogeneity across stripe boundaries

6. Digitization of the City Survey Sheets and Building a Base Map
   The Drone agency will need to facilitate this task as follows:
   - Provide the Stitched image and the tiles data to the NIUA Ahmedabad Team.
   - Support / facilitate the appointment of two draftspersons with an experience of 10 years in the areas cadastral mapping and urban planning. They will be stationed in the office of NIUA
Ahmedabad and work under the guidance of NIUA Ahmedabad Team. Specifically, they should be proficient in -

a. Fitting the cadastral maps available with NIUA on Ortho-rectified drone Image.

b. Prepare the layers of City Survey Plot Boundaries, Building Footprints (as on date form the drone image and from the cadastral maps), Road and Public Domain Open area (as on date from the drone image and from the cadastral maps).

c. Input the floor information into the built-up layer from the cadastral map.

d. Prepare / convert in GIS and create an attribute table with plots details such as the number and areas.

- Provide two high end workstations (Lenovo) to be placed in the NIUA Ahmedabad Office for the above work. These will remain in the NIUA Ahmedabad NIUA Office even after the project is over.

7. Building Heights Information
The NIUA Ahmedabad Team will provide the Base Map to the Agency with the building foot prints after about two months. The agency will then add the information on building heights for each foot print on the vector file and attribute table which will be the final submission.

C. Accuracy Check

1. Positional Accuracy
For Orthophoto should be superimposed on the Google Earth/Bhuvan for checking the relative and absolute accuracy, other than the points used as ground control points. Final Orthophoto should meet the positional accuracy.

2. Relative Accuracy
Real distances at least 10 places (per unit area) shall be measured from ground and respective measurement shall be done on Orthophoto. The difference of Linear distance shall not be more than acceptable limit from the actual ground distance.

D. Key Deliverables

<table>
<thead>
<tr>
<th>No.</th>
<th>Stages</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1   | Inception Stage | 1 week from award of work  
A report on analysis of KML, mission planning, site planning and data processing methodology. |
| 2   | 1st Stage     | 5 weeks from award of work  
A report along with  
- Raw Images (jpg and tiff format) (up to 3 cm Ground Sampling Points) should be geotagged.  
- Final scaled and Geopositioned Ortho Rectified Tiles in geotiff format.  
- Ortho-rectified drone Image – geotiff format  
- Digital surface models - geotiff format  
- Digital terrain models - geotiff format  
- Digital Elevation Model - geotiff format  
- GCPs marked on the ground using DGPS method – Raw file and .shp format  
- Map file compatible to CAD/GIS in shp format duly linked with attributes of assets.  
- Quality Control Report for positional Accuracy assessment coordinates (at least for 10 control points) |
Once the Vendor submits the processed image to NIUA, NIUA will prepare the Base Map and hand it back to the Vendor for next stage. The time taken by NIUA to prepare the Base Map will be approximately 2 months.

<table>
<thead>
<tr>
<th>No.</th>
<th>Stage</th>
<th>Time Frame</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2nd Stage</td>
<td>2 weeks after getting the Base Map from NIUA</td>
<td>A report and data on building heights on to the vector data provided.</td>
</tr>
<tr>
<td>4</td>
<td>Final Stage</td>
<td>2 weeks after NIUA’s comments</td>
<td>Refinement of the above after comments from the client.</td>
</tr>
</tbody>
</table>

**E. Financial Quote**

There are three cost components as indicated in the table below. Two of these are already determined by NIUA and are proposed to be routed through this RFP. The bidder has to quote for the first one only and this figure will be used for the purpose of evaluation of the financial score.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Drone imagery and building heights data as per specifications</td>
<td>Rs / Ha</td>
</tr>
<tr>
<td>2</td>
<td>2 Draughtspersons</td>
<td>Rs. 5 lakhs</td>
</tr>
<tr>
<td>3</td>
<td>2 Workstations</td>
<td>Rs. 4 lakhs</td>
</tr>
</tbody>
</table>

A quote to be given by the firm for item 1 only exclusive of GST. GST will be paid in addition as per prevalent norms / polices.

**F. Technical Qualification:**

- Firm must have its main base office in Ahmedabad for better coordination with the NIUA Project Team based in Ahmedabad.
- At least FIVE (5) years of experience as a drone consultancy firm working in the development sector. (Provide Certificate of Incorporation, Pan Card and GST details)
- At least FIVE (5) projects of area for more than 100 hectares in brownfield development. (Refer Annexure B for the format), supported by relevant work samples
- At least 2 licensed drone operators. (Provide CVs and Official licenses)
- Drone agencies with drone types as DJI Phantom 3 Professional, DJI Phantom 4, Phantom 4 RTK and Matrice 200 RTK Series will have an advantage in evaluation.

**G. Financial Qualification:**

Bidder to be a firm with a gross annual average turnover of INR 50 Lakhs or above (three most recent Financial Years). (Attach Certification of Statutory Auditor as per annexure D along with balance sheets.)

**H. Validity of the Proposal:**

- The submitted Proposal shall be valid for sixty (60) days from the submission date mentioned in this RFP. During this period, the Consultant shall maintain its original Proposal without any change, including the availability of all the proposed team members, the proposed rates and the total price.
- The Client will make its best effort to complete the negotiations within the proposal’s validity period. However, should the need arise, the Client may request to all Consultants who submitted Proposals prior to the submission deadline to extend the validity of the respective proposals.
- If the Consultant agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal and with the confirmation of the availability of the proposed team members.
• The Consultant has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.

I. Technical Evaluation

The evaluation team shall review and evaluate the Technical Proposals on the basis of their responsiveness to the RFP documents, applying the evaluation criteria, sub-criteria, and point system specified. A Proposal shall be rendered non-responsive at the technical evaluation stage if it fails to achieve the minimum technical score of 60 out of 100 marks. NIUA may invite technically responsive bidders for a presentation related to their technical proposals.

• Minimum technical score for evaluation of financial proposal is 60 marks out of 100.
• The Technical Evaluation criteria is given below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Evaluation Criteria</th>
<th>Years/ Numbers</th>
<th>Sub Marks</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Years of Experience</td>
<td>0 - 2.5</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.6 – 5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 and above</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Number of Projects</td>
<td>0 – 2</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 – 5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 and above</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Drone Equipment</td>
<td>0 – 2</td>
<td>2.5</td>
<td>10</td>
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<tr>
<td></td>
<td></td>
<td>3 – 5</td>
<td>5</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>5 and above</td>
<td>10</td>
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<td>4.</td>
<td>In house Drone Operators</td>
<td>0-2</td>
<td>5</td>
<td>10</td>
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<tr>
<td></td>
<td></td>
<td>3 and Above</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Approach and Methodology</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

J. Financial Evaluation
• The financial bids of only technically qualified bidders will be opened.
• The firm with the lowest quote will get full marks.

K. Proposal Evaluation and Award of Work
• The bids will be evaluated based on techno-commercial evaluation with 80% weightage for technical proposals and 20% weightage of financial proposals.
• Superior technical bids will be given the opportunity to match the combined highest score.

L. Payment Schedule
The firm shall submit an invoice at the end of every stage of the project mentioned in the scope of work of this RFP. The payment shall be done based on completion of the stages and submission of relevant and satisfactory deliverables as per below details.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Release of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inception Stage</td>
<td>10% of the total contract amount</td>
</tr>
<tr>
<td>1st Stage</td>
<td>40% of the total Contract amount</td>
</tr>
<tr>
<td>2nd Stage</td>
<td>30% of the total contract amount</td>
</tr>
<tr>
<td>Final Stage</td>
<td>20% of the total contract amount</td>
</tr>
</tbody>
</table>
M. Date of Submission/ Bid due date: March 23, by 4.00 pm

N. Submission Guidelines

- The bid shall be submitted in HARD COPY ONLY by courier or in person in one sealed envelope on the address mentioned below. The bid shall contain the ‘TECHNICAL PROPOSAL’ and the ‘FINANCIAL PROPOSAL’ in two separate and sealed envelopes and titled respectively. If the envelopes and packages with the proposals are not sealed and titled as required, NIUA shall assume no responsibility for the misplacement, loss, or premature opening of the proposal. The Bidder is required to prepare the Financial Proposal on a letterhead following the attached format in annexure and in a separate sealed envelope marked as ‘FINANCIAL PROPOSAL’. Any financial information provided in the Technical Proposal shall lead to Bidder’s disqualification. The Financial Proposal should align with the requirements of the RFP and the Bidder’s Technical Proposal.
- An Earnest Money Deposit of Rs. 1 lakh is to be submitted with the proposal.
- NIUA shall only recognize the date and time that the bid was received by NIUA. NIUA shall not consider any proposal that is submitted after the deadline for the submission. The Bidder is not permitted to alter or modify its proposal in any way after the submission deadline.
- Address for Submission:
  
  National Institute of Urban Affairs
  C/o Anthill Design
  Office no. 56, 6th floor, Sanidhya building,
  Opp. Sanyas Ashram, Ellis Bridge,
  Ahmedabad- 380009

O. Clarifications & Queries
Clarifications may be requested no later than 10 days prior to the submission deadline (i.e. till March 13, 2020). The Client shall not be liable to answer any queries beyond the mentioned date. The queries can be mailed to sballaney@niua.org with a copy to mgadkari@niua.org

The above email ID is provided only to seek clarifications and raise queries. Bids/Proposals sent to the above-mentioned email ID will not be considered valid.

P. List of Annexures

  Annexure A: Cover Letter for Technical Proposal
  Annexure B: Previous assignments of Applicant
  Annexure C: Financial Proposal
  Annexure D: Certification of Statutory Auditor giving Financial Details
Annexure A: Cover Letter for Technical Proposal

[On Letter head of the Bidder]

To,

National Institute of Urban Affairs
C/o Anthill Design
Office no. 56, 6th floor, Sanidhya building,
Opp. Sanyas Ashram, Ellis Bridge,
Ahmedabad- 380009

Dear Sir/ Madam,


With reference to your RFP document dated ________ 2020, I have examined the Bidding Documents and understood their contents, hereby submit my/our Bid for the aforesaid Project and state as under:

1. The Bid is unconditional.
2. All information provided in the Bid and in the Appendices is true and correct. and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification.
3. I shall make available to the Authority for any additional information it may find necessary or require to supplement or authenticate the Bid.
4. I acknowledge the right of the Authority to reject our Bid without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.
5. The Financial Bid has been quoted by me after taking into consideration all the terms and conditions stated in the RFP.
6. I agree to keep this offer valid for 60(sixty) days from the Bid Due Date specified in the RFP.
7. Notwithstanding any qualification or conditions, whether implied or otherwise, contained in our Proposal we hereby represent and confirm that our Proposal is unqualified and unconditional in all respects.

Yours faithfully,

(Signature of the Authorized signatory)

(Name and designation of the Authorized signatory)

Date:
Place:

Name and seal of Bidder
## Annexure B: Previous assignments of Applicant

<table>
<thead>
<tr>
<th>Name of Applicant:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the Project:</td>
<td></td>
</tr>
<tr>
<td>Area in Hectares or other particulars</td>
<td></td>
</tr>
<tr>
<td>Description &amp; purpose of services performed by the Applicant firm:</td>
<td></td>
</tr>
<tr>
<td>Final output of the project (work samples including rendered maps)</td>
<td></td>
</tr>
<tr>
<td>Name of client and Address: (Indicate whether public or private entity)</td>
<td></td>
</tr>
<tr>
<td>Name, telephone no. and fax no. of client’s representative:</td>
<td></td>
</tr>
<tr>
<td>Estimated capital cost of Project (in INR):</td>
<td></td>
</tr>
<tr>
<td>Payment received by the Applicant (in INR):</td>
<td></td>
</tr>
<tr>
<td>Start date and finish date of the services:</td>
<td></td>
</tr>
<tr>
<td>Brief description of the Project:</td>
<td></td>
</tr>
</tbody>
</table>
Annexure C: Financial Proposal

{Location, Date}

To: [Name and address of Client]

Dear Sir/Madam:

We, the undersigned, offer to provide the consulting services for [Insert title of assignment] in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal.

Our attached Financial Proposal is for the amount of [Insert amount(s) in words and figures]. The estimated amount of local indirect taxes is [Insert amount in words and figures] which shall be confirmed or adjusted, if needed, during negotiations.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorised Signature {In full and initials}:
Name and Title of Signatory:

In the capacity of:
Address:

E-mail: _________________________
Annexure D: Certification of Statutory Auditor giving Financial Details

This is to certify that M/s _______________ (Name of the Bidder) has the average turnover as per audited Balance Sheets of three most recent Financial Years.(enclosed separately)

<table>
<thead>
<tr>
<th>Years</th>
<th>Turnover in INR</th>
<th>Details of Auditor Firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature and Membership No. of Statutory Auditor