



**CONSULTANCY SERVICES FOR DEVELOPMENT OF 3D DIGITAL TWIN &  
PHYSICAL MODEL OF RAVI CITY**

Ref No. -----

Date: -----

To,

Correspondent Address

**Section 1**

**LETTER OF INVITATION**

Dear Mr./Ms.,

1. RUDA invites technical and financial proposals to provide the consulting services for **3D DIGITAL TWIN & PHYSICAL MODEL OF RAVI CITY**. Details on the services are provided in the Terms of References. It is not permissible to transfer this invitation to any other firm.
2. The Consultant will be selected under the **Quality & Cost Based Selection (QCBS)** method and procedures described in this RFP, in accordance with RUDA Procurement Regulations 2022 (Amended).
3. The RFP includes the following additional documents:  
Section 1- Letter of Invitation  
Section 2 - Instructions to Consultants (including Data Sheet)  
Section 3 - Technical Proposal - Standard Forms  
Section 4 - Financial Proposal - Standard Forms  
Section 5 - Term of References (TORs)
4. Any queries must be received 5 days before the submission deadline.
5. The Consultant will be selected under the **Quality & Cost Based Selection (QCBS)** method and procedures described in this RFP, in accordance with RUDA Procurement Regulations 2022 (Amended).
6. Technical and financial proposals should be submitted in Separate Sealed envelopes.
7. The response time for submission of bids will be Thirty days shall be calculated from the date of publication of advertisement in a newspaper or on the website whichever is later on that day at 15:00 PST and will be opened on the same date at 15:30 PST
8. The contract shall be executed in local currency. i.e., PKR and all applicable taxes will be as per local regulations.

This information should be sent to the following address:



**RAVI URBAN DEVELOPMENT AUTHORITY**  
**GOVERNMENT OF PUNJAB**



**Name:** Haroon Rauf  
**Designation:** Deputy Director Procurement  
**Address:** Ravi Urban Development Authority,  
151-Abu Baker Block, Garden Town, Lahore, Pakistan  
**Email:** [haroon.rauf@ruda.gov.pk](mailto:haroon.rauf@ruda.gov.pk)  
**Ph.:** +92-42-99333531-6 (Ext-205)

**Yours sincerely,**  
Deputy Director Procurement  
Ravi Urban Development Authority (RUDA)



## **SECTION 2: INSTRUCTIONS TO BIDDERS**

### **Definitions**

- (a) “Assignment” means the consultancy services for 3D DIGITAL TWIN and PHYSICAL MODEL OF RAVI CITY.
- (b) “Client” means the ‘Ravi Urban Development Authority, Government of the Punjab’, with which the selected Consultant signs the Contract.
- (c) “Consultant Selection Committee” means the committee formed for the selection of Consultant for this Assignment as per RUDA Procurement Regulations 2022 (Amended).
- (d) “Consultant” means any firm/consortium/joint venture that provides the Services to the Client under the Contract.
- (e) “Data Sheet” means such part of the Instructions to Firms used to reflect specific conditions.
- (f) “Day” means calendar day.
- (g) “Firms” means any firms, consortiums and joint ventures to whom this RFP has been issued.
- (h) “Government” means the Government of the Punjab and all its associated departments, agencies, autonomous/semi-autonomous bodies, local governments, boards, universities and similar other organizations
- (i) “Instructions to Firms” means the document, which provides Firms with information needed to prepare their Proposals.
- (j) “LOI” means the Letter of Invitation included in the RFP as being sent by the Client to the Firms.
- (k) “Personnel” means professionals and support staff provided by the Firms or by any sub-consultant and assigned to perform the Services or any part thereof; “Foreign Personnel” means such professionals and support staff who at the time of being so provided had their nationality outside Pakistan; “Local Personnel” means such professionals and support staff who at the time of being so provided had their domicile inside Pakistan.
- (l) “Proposal” means the Technical Proposal and the Financial Proposal
- (m) “Services” means the Assignment to be performed by the Consultant pursuant to the Contract.
- (n) Regulations means the Ravi Urban Development Authority Procurement Regulations 2022 (Amended).



- (o) “Sub-Consultant” means any person or entity with whom the Consultant sub-contracts any part of the Services.
- (p) “Terms of Reference” (TOR) means the document included in the RFP as Section 5 which explains the objectives, scope of work, activities, tasks to be performed, respective responsibilities of the Consultant/Firm, and expected results and deliverables of the Assignment.

**1. Introduction**

- 1.1 The Client shall select the Consultant, in accordance with the method of Quality and Cost Based Selection and evaluation criteria as mentioned in the RFP.
- 1.2 Firms are invited to submit a Technical Proposal and a Financial Proposal for Services required for the Assignment through sealed envelope.
- 1.3 The Client will assist the Firm in making available relevant project data and reports (if any).
- 1.4 Firms shall bear all costs associated with the preparation and submission of their Proposals and finalization of Contract. The Client is not bound to accept any Proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Firms.

**Conflict of Interest**

- 1.5 Ravi Urban Development Authority requires that Firms provides professional, objective, and impartial advice and at all times, hold the Client’s interest paramount, strictly avoid conflicts with other assignments or their own corporate interests, and act without any consideration for future work.
- 1.6 A firm that is currently engaged by the client to provide goods, works and services for a project or any of its affiliate shall be disqualified from providing consultancy services to the client.

**Conflicting relationships**

- (i) A firm (including its Personnel and sub-consultants) that has a business or family relationship with a member of the Client’s staff who is directly or indirectly involved in any part of (i) the preparation of the Terms of Reference of the assignment, (ii) the selection process for such assignment, or (iii) supervision of the contract, may not be awarded a contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Ravi Urban Development Authority throughout the



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|  |      | selection process and the execution of the contract.  |
| <b>Fraud and Corruption</b>                            | 1.7  | The Ravi Urban Development Authority requires Firms participating in this Assignment to adhere to the highest ethical standards, both during the selection process and throughout the execution of the Contract. In pursuance of this policy, the Ravi Urban Development Authority.   |
|  | 1.8  | Firms, their sub-consultants, and their associates shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Government of Pakistan in accordance with the above para. 1.6. Furthermore, the Firms shall be aware of the provisions on fraud and corruption stated in the specific clauses in the General Conditions of Contract.  |
| <b>Only one Proposal</b>                               | 1.9  | Firms may only submit one Proposal. If a Firm submits or participates in more than one Proposal, such Proposals shall be disqualified.  |
| <b>Proposal Validity</b>                               | 1.10 | The Data Sheet indicates how long Firms' Proposals must remain valid after the submission date.   |
| <b>Eligibility of Sub-Consultants</b>                  | 1.11 | The consultant may enhance its expertise for the assignment by associating with other foreign/local consultants in the form of a Joint Venture / Consortium or as a Sub-Consultants. In case of a joint venture / consortium, all partners shall be jointly and severally liable.   |
|  | 1.12 | Lead Firm will be the local firm.   |
| <b>2. Clarification and Amendment of RFP Documents</b> | 2.1  | A Pre-Bid Meeting will be held on <b>January 10, 2024 at 11:00 a.m. at RUDA board room</b> to discuss the preliminary input on RFP. Consultants may request a clarification of any of the RFP indicated in the Data Sheet before the proposal submission date. Any request for clarification must be sent in writing, or by standard electronic means to the Client's address indicated in the Data Sheet. The Client will respond in writing, or by standard electronic means. |
|  | 2.2  | At any time before the submission of Proposals, the Client may amend the RFP by issuing an addendum and upload the updated RFP on Authority Website.  |
| <b>3. Preparation of Proposals</b>                     | 3.1  | The Proposal as well as all related correspondence exchanged by the Firms and the Client, shall be written in English.  |
| <b>Technical Proposal</b>                              | 3.2  | The Technical Proposal shall provide the information indicated in the following paras from (a) to (g) using the   |



**Format and  
Content**

attached Form TECH-4 of Section 3, which indicates the recommended number of pages for the description of the approach, methodology and work plan of the Technical Proposal. A page is considered to be one printed side of A4 or letter size paper.

- (a) A brief description of the Firms' organization and an outline of recent experience of the Firm (each partner in case of joint venture / consortium) on assignments of a similar nature are required in Form TECH-2 of Section 3. For each assignment, the outline should indicate the names of sub-consultants/ professional staff who participated, duration of the assignment, contract amount, and Firm's involvement (both technical and financial). Information should be provided only for those assignments for which the Firm was legally engaged by the Client as a firm or as one of the major firms within a joint venture / consortium. Assignments completed by individual professional staff working privately or through other consulting firms cannot be claimed as the experience of the Firm, or that of the Firm's associates, but can be claimed by the professional staff themselves in their CVs. Firms should be prepared to substantiate the claimed experience, if so requested by the Client
- (b) Comments and suggestions on the Terms of Reference including workable suggestions that could improve the quality/ effectiveness of the Assignment; and facilities such as administrative support, equipment, data, etc. to be provided by the Client (Form TECH-3 of Section 3).
- (c) A description of the approach, methodology and work plan for performing the Assignment, covering the following subjects: technical approach and methodology, work plan, and organization and staffing schedule. Guidance on the content of this section of the Technical Proposals is provided under Form TECH-4 of Section 3. The work plan should be consistent with the Work Schedule (Form TECH-8 of Section 3), which shall show in the form of a bar chart the timing proposed for each activity.
- (d) The list of the proposed Professional staff team by area of expertise, the position that would be assigned to each staff team member, and their tasks (Form TECH-5 of Section 3).



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- (e) Estimates of the staff input (staff-months of foreign and local professionals) needed to carry out the assignment (Form TECH-7 of Section 3).
    - (f) CVs of the Professional by the staff themselves (Form TECH-6 of Section 3).
  - 3.3 The Technical Proposal shall not include any financial information.
  - 3.4 The Financial Proposal shall be prepared using the attached Standard Forms (Section 4).
  - 3.5 The bid offer by the firms shall be inclusive of all applicable local taxes in Pakistan.
- Taxes**
  - 3.6 All applicable taxes shall be deducted at source by Client from the Consultant payments against deliverables.
- 4. Submission, Receipt, and Opening of Proposals**
  - 4.1 The original Proposal (Technical and Financial) to be submitted in sealed envelope.
  - 4.2 The Proposals must be sent to the address/addresses indicated and received by the Client no later than the time and the date indicated. Any proposal received by the Client after the deadline for submission shall not be entertained.
- 5. Evaluation of Technical Proposals**
  - 5.1 The Consultant Selection Committee (CSC) shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub-criteria, and point system specified. Each responsive Proposal will be given a technical score (St). A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP, and particularly the Terms of Reference or if it fails to achieve the minimum technical score indicated.
  - 5.2 For the technical evaluation the sub consultant, individuals key staff members and JV partner along with Lead firm will be jointly evaluated.
- Evaluation of Financial Proposals**
  - 5.3 After the technical evaluation is completed, the Client shall inform the Firms who have submitted Proposals the technical scores obtained by their Technical Proposals, and shall notify those Firms whose Proposals did not meet the minimum qualifying mark or were considered non responsive to the RFP and TOR, after completing the selection process.





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|   | 5.4 | The firms who score minimum 65 marks in technical proposal will be further considered for the opening of financial proposal.  |
|   | 5.5 | The Consultant Selection Committee will correct any computational errors. When correcting computational errors, in case of discrepancy between a partial amount and the total amount, or between word and figures, the formers will prevail.  |
|   | 5.6 | The Firm achieving the highest combined technical and financial score will be invited for negotiation.  |
| <b>6. Negotiations</b>                            | 6.1 | Negotiations may be held with the highest rank bidder before contract finalization.   |
|   | 6.2 | Representatives conducting negotiations on behalf of the Firm must have authority to negotiate and conclude a Contract.   |
| <b>Technical &amp; Financial Negotiations</b>     | 6.3 | Negotiations will include a discussion of the Technical Proposal, the proposed technical approach and methodology, work plan, and organization and staffing, and any suggestions made by the Firm to improve the Terms of Reference. The Client and the Firm will finalize the Terms of Reference, work schedule, logistics, and reporting. These documents will then be incorporated in the Agreement as "Description of Services".  |
|   | 6.4 | The financial negotiations will reflect the agreed technical modifications in the cost of the services.   |
| <b>Availability of Professional staff/experts</b> | 6.5 | Having selected the Firm on the basis of, among other things, an evaluation of proposed Professional staff, the Client expects to negotiate a Contract on the basis of the Professional staff named in the Proposal. Before Contract negotiations, the Client will require assurances that the Professional staff will be actually available. The Client will not consider substitutions during Contract negotiations unless both parties agree that undue delay in the selection process makes such substitution unavoidable or for reasons such as death or medical incapacity. If this is not the case and if it is established that Professional staff were offered in the proposal without confirming their availability, the Firm may be disqualified. Any proposed substitute shall have equivalent or better qualifications and experience than the original candidate and be submitted by the Firm within the period of time specified in the letter of invitation to negotiate. |
| <b>Conclusion of the negotiations</b>             | 6.6 | Negotiations will conclude with a review of the draft Agreement. To complete negotiations the Client and the  |





Firm will initial the agreed Agreement. If negotiations fail, the Client will invite the Firm whose Proposal received the second highest score to negotiate a Contract.

**7. Award of Contract**

- 7.1 After completing negotiations, the Client shall award the Contract to the selected Firm.
- 7.2 The contract shall be executed in local currency. i.e., PKR and all applicable taxes will be as per local regulations.
- 7.3 The Lump sum contract will be executed in Pak Rupee.
- 7.4 All software's/ plugins / applications utilised in the project will be procured by the consultant itself and will be handed over to the Client as per the deliverable schedule. The license of the software's will be purchased on the name of RUDA will be valid for at least one year.

**8. Confidentiality**

- 8.1 Information relating to evaluation of Proposals and recommendations concerning awards shall not be disclosed to the Firms who submitted the Proposals or to other persons not officially concerned with the process, until the publication of the award of Contract. The undue use by any Consultant of confidential information related to the process may result in the rejection of its Proposal and may be subject to the provisions of the RFP relating to fraud and corruption.



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**DATA SHEET**

|      |   |
|------|---|
| 1    | Name of the Client:<br><b><u>RAVI URBAN DEVELOPMENT AUTHORITY (RUDA),<br/>GOVERNMENT OF THE PUNJAB</u></b>  |
| 2    | Name of the Assignment is:<br><b><u>3D DIGITAL TWIN AND PHYSICAL MODEL OF RAVI CITY</u></b>   |
| 3    | Proposals must remain valid for <b>90 days</b> after the submission date.   |
| 3(a) | The format of the Technical Proposal is Full Technical Proposal. Submission of Technical Proposal in wrong format may lead to the Proposal being deemed non-responsive to the RFP Requirements.   |
| 3(b) | Name of project should be mentioned on top of CVs, indicating that the CV has been submitted by the person for this project and he will be available, if the project is awarded to the Consultant. Contact number of persons should be mentioned in CV. Client reserves the right to interview key persons during or after evaluation process.  |
| 4    | <b>The Client representative address for requesting Clarification is:</b><br><br><b>Office of the Procurement Department, Ravi Urban Development Authority, Lahore</b><br>151 Abubaker Block, Garden Town, Lahore, Pakistan<br><b>Phone: +92-42-99333531-6</b><br><b>E-mail: <a href="mailto:haroon.rauf@ruda.gov.pk">haroon.rauf@ruda.gov.pk</a></b>   |
| 5    | <b>The Proposal submission address is:</b><br>Office of the Procurement Department, Ravi Urban Development Authority, Lahore<br>151 Abu Bakar Block, Garden Town, Lahore, Pakistan<br>Phone: +92-42-99333531-6<br>E-mail: <a href="mailto:haroon.rauf@ruda.gov.pk">haroon.rauf@ruda.gov.pk</a><br><br>Proposal <u>submission deadline</u> is <b>February 02, 2024 before 3:00 p.m.</b> which will be opened on the same day at 3:30 p.m. in the board room of RUDA. |
| 6    | The Firms shall quote the bid price in Pakistani Rupees only.   |



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|---|---|
| 7 | Consultant must submit the <b>Original and 1 Copy</b> of the Technical Proposal and Financial Proposal in separate sealed envelopes, both enclosed in one common envelope.  |
| 8 | <u>A Pre-Bid Meeting will be held on January 10, 2024 11:00 a.m. at RUDA Board room of RUDA head office.</u> If public holiday falls on the day mentioned then meeting will be held on the next working day at same time and place. |

**Technical Evaluation Criteria:**

The Consultant (Firm/ Joint Venture / Consortium) fulfilling the following technical criteria shall only be considered for further evaluation. (Relevant documents to be attached).

Technical criteria consist of the following:

1. Company Profile (A1) 55%
2. Project Team (A2) 35%
3. Approach and Methodology (A3) 10%

**1. Company Profile: (55%)**

**Total Marks [100]**

- I. Number of **completed assignments of similar nature (as provided in TORs i.e.,** City Level 3D Digital Twin / 3D Modeling of City or Neighborhood / 3D Urban Development Project models **[45]**

|   |        |
|---|--------|
| 1 x City Level 3D Digital Twin          | = [20] |
| 1 x 3D Modeling of City or Neighborhood | = [15] |
| 1 x 3D Urban Development Project Models | = [10] |

- II. Number of **1 completed assignments of similar nature (as provided in TORs i.e.,** Physical Model of Urban Development Project **[35]**

**III. Average Annual Turnover for Last 3 years**

|  |             |
|--|-------------|
| more than Rs. 150 million              | <b>[20]</b> |
| Less than Rs. 50 million               | No marks    |
| <= PKR 50 million                      | [0]         |
| > PKR 50 million and <= PKR 70 million | [4]         |
| > 70 million and <= 100 million        | [8]         |
| > 100 million and <= 120 million       | [12]        |
| > 120 million and <= 150 million       | [16]        |

**Total = (A1)**



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| <b>2. Project Team: A2 (35%)</b> |  |   | <b>Total Marks [100]</b> |
|----------------------------------|--|---|--------------------------|
| <b>Sr. No.</b>                   | <b>Description</b>   | <b>Education &amp; Experience</b>   | <b>Marks Assigned</b>    |
| 1.                               | <b>Team Leader</b><br>(Urban Planning/GIS Expert/Architecture) | <b>Qualification:</b> Masters in Urban Planning / GIS / Architecture or related qualification.<br><br><b>Experience:</b> Minimum 15 years of experience in large scale urban development projects/3D modelling of urban areas physically and digitally. | 30                       |
| 2.                               | Senior Urban Planner   | <b>Qualification:</b> Bachelor in Urban Planning and preferable Masters in City and Regional Planning preferable<br><b>Experience:</b> Min 10 years' experience in relevant field or 8 years with master degree   | 20                       |
| 3.                               | Senior GIS Analyst   | <b>Qualification:</b> Bachelor in GIS/Geography/Geomatics/Space Science and preferable Masters in related field.<br><br><b>Experience:</b> Min 10 years' experience in relevant field or 8 years with master degree.                                    | 20                       |
| 4.                               | Senior Architect   | <b>Qualification:</b> Bachelor in Architectural Engineering or Design and Master's in Architecture Planning preferable.<br><br><b>Experience:</b> Min 10 years' experience in relevant field or 8 years with master degree                              | 20                       |
| 5.                               | Programmer<br>Java/HTML/CSS/Python                             | <b>Qualification:</b> Bachelors in Computer Science/Software Engineering<br><br><b>Experience:</b> 5 years of Experience in designing of Websites   | 10                       |
| <b>Total = (A2)</b>              |  |   |                          |

**Non Key Personnel**

- Junior Town Planners
- Junior Architects
- Junior GIS Analysts
- GIS Digitizers
- CAD Operators/Draftsmen

|   |                 |
|---|-----------------|
| <b>Approach &amp; Methodology: 10%</b>              | <b>A3 (100)</b> |
| A. Methodology & Work Plan with Resource Deployment | [80]            |
| B. Presentation on Approach and Methodology         | [20]            |
| <b>Total = (A3)</b>                                 |                 |



### Final Score of Technical Evaluation

The equation to calculate the final technical score is as following;

$$\text{Technical Score}^* = \frac{A_1[55]}{100} + \frac{A_2[35]}{100} + \frac{A_3[10]}{100}$$

The minimum Technical Score required to pass is 65 marks which will be calculated according to the equation stated above.

### Financial Evaluation Criteria:

The formula for determining the financial marks is the following:

$$S_f = 100 \times F_m / F$$

Where,  $S_f$  is the financial marks,

' $F_m$ ' is the lowest price and

' $F$ ' the price of the proposal under consideration.

### Total Score (Financial Technical):

The score given to the Technical and Financial Proposals are:

Technical Score (T) = 80% x  $S_t$ , and

Financial Score (P) = 20% x  $S_f$

$$\text{Grand Total (GT)} = T + P$$

**The Consultant achieving the highest combined technical and financial score (GT) will be selected for the negotiation and will be awarded the Contract.**



**SECTION: 3 TECHNICAL PROPOSAL - STANDARD FORMS**

Refer to Reference Paragraph 3 (a) & (b) of the Data Sheet for format of Technical Proposal to be submitted, and paragraph 3.2 of Section 2 of the RFP for Standard Forms required and number of pages recommended.

- TECH-1 Technical Proposal Submission Form
- TECH-2 Consultant's Organization and Experience
  - A Consultant's Organization
  - B Consultant's Experience
- TECH-3 Comments or Suggestions on the Terms of Reference and on Counterpart Staff and Facilities to be provided by the Client
  - A On the Terms of Reference
- TECH-4 Description of the Approach, Methodology and Work Plan for Performing the Assignment
- TECH-5 Team Composition and Task Assignments
- TECH-6 Curriculum Vitae (CV) for Proposed Professional Staff
- TECH-7 Staffing Schedule
- TECH-8 Work Schedule



## FORM TECH-1 TECHNICAL PROPOSAL SUBMISSION FORM

Location: \_\_\_\_\_ Date: \_\_\_\_\_

To:

-----  
-----  
-----

Dear Sir,

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 Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal, and a Financial Proposal sealed under a separate envelope<sup>1</sup>.

We are submitting our Proposal in association with: [*Insert a list with full name and address of each associated Consultant*]<sup>2</sup>

We hereby declare that all the information and statements made in this Proposal are true and accept that any misinterpretation contained in it may lead to our disqualification.

We undertake, if our Proposal is accepted, to initiate the consulting services related to the assignment not later than the date indicated as per the contract obligation.

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

We remain,

Yours sincerely,

Authorized Signature [*In full and initials*]: \_\_\_\_\_

Name and Title of Signatory: \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_





**FORM TECH-2 CONSULTANT'S ORGANIZATION AND EXPERIENCE**

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**A - Consultant's Organization**

*[Provide here a brief description of the background and organization of your firm/entity (including organogram) and each associate for this assignment.]*

1. Firm Background:
2. Chief Executive Officer:
3. Board of Directors / Partners.
4. Departmental Structure of the Firm
5. Organogram



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**B-Index of Firm Experience (Relevant)**

Name of Consortium Members: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

All costs shall be in Pakistani Rupees (in Millions)

| Relevant <sup>1</sup> |                              |                                    |                                       |   |                                      |                |            |                       |   |  |
|-----------------------|------------------------------|------------------------------------|---------------------------------------|---|--------------------------------------|----------------|------------|-----------------------|---|--|
| S. No                 | Name of Project <sup>2</sup> | Name of JV under taken the Project | Location (Country/ Province/Division) | Project Completion letter of Client at CP No. | Name of Client & Project Description | Implementation |            | Total Cost of Project | Cost of Consultancy Services Provided by the Firm | Actual Portion of Services Provided by the JV member |
|                       |                              |                                    |                                       |   |                                      | Start          | Completion |                       |   |  |
| 1                     |                              |                                    |                                       |   |                                      |                |            |                       |   |  |
| 2                     |                              |                                    |                                       |   |                                      |                |            |                       |   |  |
| 3                     |                              |                                    |                                       |   |                                      |                |            |                       |   |  |
| 4                     |                              |                                    |                                       |   |                                      |                |            |                       |   |  |
| 5                     |                              |                                    |                                       |   |                                      |                |            |                       |   |  |

1. Project/Assignment provided must be supported with the completion certificate issued by the procuring agency/executing agency of that particular project or undertaking for that particular project.



## C - Consultant's Experience

*[Using the format below, provide information on each assignment (of the Lead firm as well as Partners / associates separately) for which your firm, and each associate for this assignment, for carrying out consulting services similar to the ones requested under this Assignment].*

|   |  |
|---|--|
| Assignment name:  | Cost of the Project  |
| Country:<br>Location within country:                      | Duration of assignment (months):   |
| Name of Client:   |  |
| Start date (month/year):<br>Completion date (month/year): | 1- Total Value of the Consultancy Agreement.<br>2- Value of consultancy services provided by your firm under the agreement (in current PKR or US\$): |
| Name of associated Consultants, if any:                   |  |

|                                   |
|-----------------------------------|
| Narrative description of Project: |
|-----------------------------------|



**FORM TECH-3 COMMENTS AND SUGGESTIONS ON THE TERMS OF REFERENCE**

**A - On the Terms of Reference**

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*[Present and justify here any modifications or improvement to the Terms of Reference you are proposing to improve performance in carrying out the assignment (such as deleting some activity you consider unnecessary, or adding another, or proposing a different phasing of the activities). Such suggestions should be concise and to the point, and incorporated in your Proposal.]*



## FORM TECH-4 DESCRIPTION OF APPROACH, METHODOLOGY AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

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*[Technical approach, methodology and work plan are key components of the Technical Proposal. You are suggested to present your Technical Proposal inclusive of charts and diagrams) divided into the following three chapters:*

- a) Technical Approach and Methodology,
- b) Work Plan, and
- c) Organization and Staffing,

a) Technical Approach and Methodology. In this chapter you should explain your understanding of the objectives of the assignment, approach to the services, methodology for carrying out the activities and obtaining the expected output, and the degree of detail of such output. You should highlight the problems being addressed and their importance, and explain the technical approach you would adopt to address them. You should also explain the methodologies you propose to adopt and highlight the compatibility of those methodologies with the proposed approach.

b) Work Plan. In this chapter you should propose the main activities of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents, including reports, drawings, and tables to be delivered as final output, should be included here. The work plan should be consistent with the Work Schedule of Form TECH-8.

c) Organization and Staffing. In this chapter you should propose the structure and composition of your team. You should list the main disciplines of the assignment, the key expert responsible, and proposed technical and support staff.



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**FORM TECH-5 TEAM COMPOSITION AND TASK ASSIGNMENTS**

**Index of Core Team and Key Personnel**

| <b>Sr.<br/>No.</b> | <b>Name</b> | <b>CNIC / Passport No.</b> | <b>Qualification</b> | <b>Firm</b> | <b>Area of Expertise</b> | <b>Total Experience<br/>in Years</b> | <b>Position Proposed</b> | <b>Task Assigned</b> |
|--------------------|-------------|----------------------------|----------------------|-------------|--------------------------|--------------------------------------|--------------------------|----------------------|
|                    |             |                            |                      |             |                          |                                      |                          |                      |
|                    |             |                            |                      |             |                          |                                      |                          |                      |
|                    |             |                            |                      |             |                          |                                      |                          |                      |
|                    |             |                            |                      |             |                          |                                      |                          |                      |



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**FORM TECH-6 CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONAL STAFF**

1. **Proposed Position** *[only one candidate shall be nominated for each position]:* \_\_\_\_\_

2. **Name of Firm** *[Insert name of firm proposing the staff]:* \_\_\_\_\_

3. **Name of Staff** *[Insert full name]:* \_\_\_\_\_

4. **Date of Birth:** \_\_\_\_\_ **Nationality:** \_\_\_\_\_

5. **CNIC No** (if Pakistani): \_\_\_\_\_ **or Passport No:** \_\_\_\_\_

6. **Education:**

| <i>Degree</i> | <i>Major/Minor</i> | <i>Institution</i> | <i>Date (MM/YYYY)</i> |
|---------------|--------------------|--------------------|-----------------------|
|               |                    |                    |                       |
|               |                    |                    |                       |
|               |                    |                    |                       |

7. **Membership of Professional Associations (if any):** \_\_\_\_\_

8. **Other Training** (if any) *[Indicate significant training since degrees under 6 - Education were obtained]:*

9. **Languages** *[For each language indicate proficiency: good, fair, or poor in speaking, reading, and writing]:* \_\_\_\_\_

10. **Employment Record** *[Starting with present position, list in reverse order every employment held by staff member since graduation, giving for each employment (see format here below): dates of employment, name of employing organization, positions held.]:*





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| Employer | Position | From (MM/YYYY) | To (MM/YYYY) |
|----------|----------|----------------|--------------|
|          |          |                |              |
|          |          |                |              |
|          |          |                |              |

**11. Detailed Tasks Assigned**

[List all tasks to be performed under this assignment]

**12. Work Undertaken that Best illustrates Capability to Handle the Tasks Assigned**

[Among the assignments in which the staff has been involved, indicate the following information for those assignments that best illustrate staff capability to handle the tasks listed under point 11.]

- 1) **Name of assignment or project & Location:** \_\_\_\_\_ **Assignment Cost** \_\_\_\_\_  
**Date of Start** \_\_\_\_\_ **Date of Completion** \_\_\_\_\_  
**Actual Time Spent on the Project:** \_\_\_\_\_ in months.  
**Client:** \_\_\_\_\_  
**Main project features:** \_\_\_\_\_  
**Positions held:** \_\_\_\_\_  
**Activities performed:** \_\_\_\_\_
- 2) **Name of assignment or project & Location:** \_\_\_\_\_ **Assignment Cost** \_\_\_\_\_  
**Date of Start** \_\_\_\_\_ **Date of Completion** \_\_\_\_\_  
**Actual Time Spent on the Project:** \_\_\_\_\_ in months.  
**Client:** \_\_\_\_\_  
**Main project features:** \_\_\_\_\_  
**Positions held:** \_\_\_\_\_  
**Activities performed:** \_\_\_\_\_



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|   |
|---|
| <p><b>3) Name of assignment or project &amp; Location:</b> _____ <b>Assignment Cost</b> _____</p> <p>Date of Start _____ Date of Completion _____</p> <p>Actual Time Spent on the Project: _____ in months.</p> <p>Client: _____</p> <p>Main project features: _____</p> <p>Positions held: _____</p> <p>Activities performed: _____</p> <p><b>4) Name of assignment or project &amp; Location:</b> _____ <b>Assignment Cost</b> _____</p> <p>Date of Start _____ Date of Completion _____</p> <p>Actual Time Spent on the Project: _____ in months.</p> <p>Client: _____</p> <p>Main project features: _____</p> <p>Positions held: _____</p> <p>Activities performed: _____</p> <p><b>5) Name of assignment or project &amp; Location:</b> _____ <b>Assignment Cost</b> _____</p> <p>Date of Start _____ Date of Completion _____</p> <p>Actual Time Spent on the Project: _____ in months.</p> <p>Client: _____</p> <p>Main project features: _____</p> <p>Positions held: _____</p> |
|---|



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**13. Certification:**

Certification:

- 1 I am willing to work on the project as indicated in the deployment schedule and as required during the assignment period.
- 2 I, the undersigned, certify that to the best of my knowledge and belief, this bio-data correctly describes myself my qualification and my experience.
- 3 I understand that Client may initiate debarment proceedings against me if I abandon the assignment before its completion.

**Signature of the Candidate**\_\_\_\_\_

Place

Date

Or

**Signature of the Authorized Representative of the firm**\_\_\_\_\_

Place

Date

Note:

- i) In order to check incorrect inflated bio-data of pay personnel, the client shall verify the details mentioned in CV by writing to the Employer indicated in the CV. The Consultancy firm shall be liable for any incorrect information.

**14. Personnel Capabilities:** The Firm shall ensure the following along with others, stated in RFP / Data Sheet: -

- i. *The composition of the proposed team and Task Assignment to individual personnel shall be clearly stated. Firms shall make their own assessment of support personnel to undertake the assignment. Additional staff or personnel if required to complete the assignment in the prescribed time, must be provided, within the total estimated cost only. Client shall not be responsible for any wrong assessment by Firm and shall not in any case bear any additional cost arising there from. No such core team / key personnel shall be proposed for any position if the CV of the personnel does not meet the requirements of the TOR.*
- ii. *The core team / key personnel shall remain available for the period indicated in the TOR.*



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*An undertaking to this effect must also be submitted. It is further clarified that all the core team / key personnel shall remain available for full assignment period as stated in the Data Sheet.*

- iii. *No alternative proposal to any core team / key personnel shall be made and only one CV for single position shall be furnished.*
- iv. *If a firm as a Consortium is qualified on the strength of experience of a foreign company, requisite core team / key personnel from that foreign company shall be fielded.*
- v. *In case of engineer, architect and urban planner, the registration with related professional body (PCATP/PEC/any other) is necessary. The expired registration or just registered engineer instead professional engineer is not acceptable and shall be rejected.*
- vi. *Failure to comply with the requirements shall make the proposal liable to be rejected and the evaluation of Financial Proposal shall not be undertaken. If, individual, core team / key personnel make an averment regarding his qualification, experience, professional membership / license, age, and it turns out to be false, or his commitment regarding availability for the project is not fulfilled at any stage after signing of the agreement, he shall be debarred for any future assignment in/with/of the Client. The firm shall also be liable for its authorized representative counter signing a CV, which is subsequently found to contain false and misleading statements or claims.*



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**FORM TECH-7 STAFFING SCHEDULE**

| Year: _____                  |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
|------------------------------|---------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|-------|-------------------------|-------|-------|
| N°                           | Name of Staff | Staff input (in the form of a bar chart) <sup>2</sup> |       |       |       |       |       |       |       |       |       |                 |       | Total staff-month input |       |       |
|                              |               | Month   | Month | Month | Month | Month | Month | Month | Month | Month | Month | Month           | Month | Month                   | Month | Total |
|                              |               | 1   | 2     | 3     | 4     | 5     | 6     | 7     | n     |       |       |                 |       |                         |       |       |
| <b>Local / International</b> |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
| 1                            |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
|                              |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
| 2                            |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
|                              |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
| 3                            |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
|                              |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
| N                            |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
|                              |               |   |       |       |       |       |       |       |       |       |       |                 |       |                         |       |       |
|                              |               |   |       |       |       |       |       |       |       |       |       | <b>Subtotal</b> |       |                         |       |       |
|                              |               |   |       |       |       |       |       |       |       |       |       | <b>Total</b>    |       |                         |       |       |

1 For key Professional Staff the input should be indicated individually; for Support Staff it should be indicated by category (e.g.: draftsmen, clerical staff, etc.).



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FORM TECH-8 WORK SCHEDULE

|       |                       |                   |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
|-------|-----------------------|-------------------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|
| Year: |                       |                   |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| N°    | Activity <sup>1</sup> | Week <sup>2</sup> |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
|       |                       | W1                | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 | W11 | W12 | W13 | W14 | W15 | W16 | W17 | W18 | W19 | 20 | W21 | W22 | W23 | W24 |
| 1     |                       |                   |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
|       |                       |                   |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
|       |                       |                   |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
|       |                       |                   |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
|       |                       |                   |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
|       |                       |                   |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| n     |                       |                   |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |

- 1 Indicate all main activities of the assignment, including delivery of reports (e.g.: inception, interim, and final reports), and other benchmarks such as Client approvals. For phased assignments indicate activities, delivery of reports, and benchmarks separately for each phase.
- 2 Duration of activities shall be indicated in the form of a bar chart.



## **Section 4: Financial Proposal - Standard Forms**

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided under para. 3.6 of Section 2. Such Forms are to be used whichever is the selection method indicated in para 3 of the Letter of Invitation.

FIN-1      Financial Proposal Submission Form

FIN-2      Summary of Costs





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FORM FIN-1 FINANCIAL PROPOSAL SUBMISSION FORM

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[Location, Date]

To: [Name and address of Client]

Dear Sir,

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 sum of [Insert amount(s) in words and figures<sup>1</sup>]. This amount is inclusive of all taxes.

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

No commissions or gratuities have been or are to be paid by us to agents relating to this Proposal and Agreement execution.

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

We remain,

Yours sincerely,

Authorized Signature [In full and initials]:

Name and Title of Signatory: \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_



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**FORM FIN-2 SUMMARY OF COSTS**

| Item   | Costs      |
|--|------------|
|  | Pak Rupees |
| Total Costs of Financial Proposal <sup>1</sup> | Rs.        |
| Service Tax                                    | Rs.        |
| Total Cost including Service Tax               | Rs.        |

1. Indicate the total costs, net of local taxes, to be paid by the Client.
2. The type of contract is Lump Sum.
3. The price variation is not permissible.

**Signature and Seal of Authorized**  
Representative of the Firm/ Consultant



## **SECTION: 5 TERMS OF REFERENCES**

### **INTRODUCTION**

The Ravi Urban Development Authority (RUDA), established in December 2020 by the Punjab government of Pakistan, aims to revamp the Ravi River, a transboundary river between India and Pakistan, and develop its waterfront area into sustainable, livable, and well-managed economic growth engines. The project spans 142,000 acres along the river, covering 46km.

Ravi City is a prominent urban development project that requires the development of a comprehensive 3D digital twin to support planning, management, and decision-making processes. This digital twin will serve as an accurate and up-to-date representation of the city, incorporating various data sources and technologies to provide valuable insights and enable effective urban governance.

### **OBJECTIVES OF THE CONSULTANCY**

The consultancy aim is to archive a highly realistic representation of architectural designs, infrastructure elements, road networks, and public spaces, allowing users to explore the virtual urban environment, navigate through streets, enter buildings, progress on River revitalization and engage in collaborative decision-making. The consultant will create a dynamic, interactive digital model of the master plan for Ravi Urban Development Authority (RUDA). The primary objectives of this Digital Twin are as follows

- Develop a detailed and accurate 3D digital twin model of Ravi City with different layers showing land use zoning.
- Integrate various data sources, including geospatial, infrastructure, existing demographic, and environmental data.
- Provide a user-friendly interface for accessing and interacting with the digital twin.
- Enable real-time data updates and monitoring of city features.
- Support urban planning, disaster management, and infrastructure development.
- Facilitate data-driven decision-making.
- Physical Model for presentation and Aesthetic Purposes

### **SCOPE OF WORK**

Project Area:

Total area of RUDA is 142,000 Acres approximately and divided into three phases which are as following:

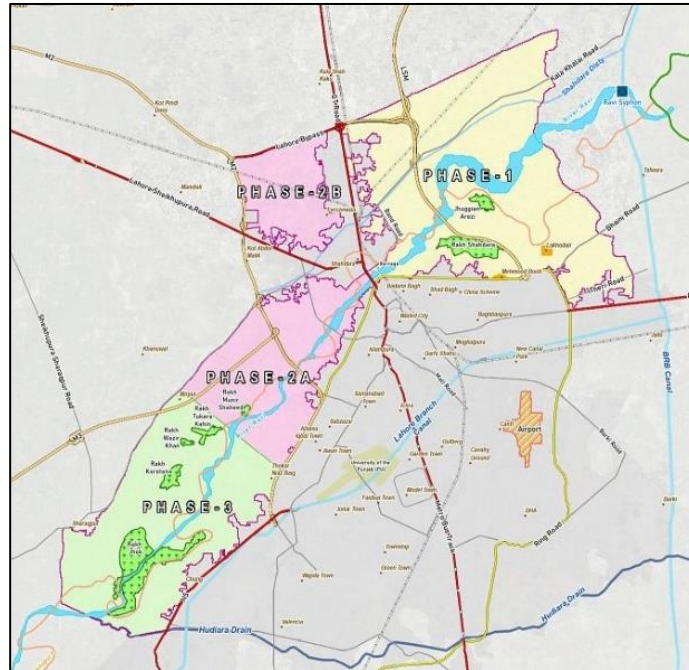
**Phase – 1 = 54,667 acres**

**Phase – 2B = 10,088 acres**

**Phase – 2A = 22,568 acres**

**Phase – 3 = 37,526 acres**

The scope of work for creating the 3D digital and Physical twin of Ravi City for the entire Project Area, but is not limited to, the following tasks:



### **TASK 1: CREATION OF 3D DIGITAL TWIN OF RAVI CITY**

The creation of 3D digital Twin will be consisting of the following tasks;

#### **1.1. GEOSPATIAL DATA COLLECTION**

Consultant is responsible to collect /generate geospatial data of existing topography of the area basing secondary or primary resources etc which includes data of roads infrastructure, bridges, Railways, Land uses, landmarks, Settlements, river, nullah etc. Thereafter, superimposed all the available data of existing and proposed plans of the authority on a common platform for integration on the same projection system for visualization & monitoring the real time picture of existing and proposed development projects in virtual environment for the entire project area.

#### **1.2. SCHEMATIC PLANNING OF PRECINCTS IN PROJECT AREA**

After analyzing the data collected in 1<sup>st</sup> stage, Consultant will be responsible to planned the neighborhoods, zones, areas which are not yet planned within the project area based on the vision and guidelines of Ravi City Master Plan on a scale suitable for creation of Digital Urban Development Environment synchronized with the other proposed developments and aligned



with the vision of the Master Plan which ultimately be converted into 3D Urban Development. The details of planning will be mutually decided as per the requirement of creation of Digital Twin and Physical Model of City.

### **1.3. CREATION OF 3D DIGITAL MODEL**

The consultant will be responsible for creation of a top-tier 3D model of Ravi City at original scale, employing cutting-edge modeling software and techniques based on the data collected and created at initial stages of assignment. The primary objective is to ensure that the model precisely captures both the physical and proposed attributes of the envisaged Ravi city. 3D model will be created to represent detailed components of the master plan of entire project area highlight the significant landmarks, projects and urban development special feature and amenities/services planned for the entire project area This model will serve as an interactive visualization tool for walkthrough, flying across the various features of the project area.

### **1.4. DATA INTEGRATION:**

The consultant will be responsible for smooth data integration and management of 2D and 3D and ensure the consistency and accuracy of the data in the physical and virtual environment. All the databases will be developed using appropriate technology and platform to further expand, update and customized according to the need of the authority. Furthermore, define & develop protocols for data sharing with user access control to facilitate efficient collaboration and information exchange.

### **1.5. CUSTOMIZED APPLICATION/SOFTWARE OR WEB BASED SOLUTION**

The consultant shall be responsible to provide a user-friendly, web-based and desktop based platform for viewing, editing, querying, analyzing, and processing of any information of the 3D digital Twin. This will web-based and desktop based application shall be equipped with functions of Real-time data feeds and different analyzing features for visualization and interaction with data to produce results and valuable insights in provided scenarios. Security measures will also be a fundamental aspect, safeguarding sensitive information and ensuring the integrity of the system. This holistic approach aims to create a robust and accessible digital twin that supports a range of critical functions within the organization.

### **1.6. DEVELOPMENT PROPOSAL ANALYSIS**

The consultant will provide decision making tool to apply and analyze different scenarios on 3d digital twin. This digital twin will have the capacity to seamlessly integrate with the Transportation Digital Model of Ravi City and this integration will facilitate the analysis of diverse development proposals within the 3D digital model, allowing for the examination of implications such as traffic generation, population density, and the impact on other public infrastructure.



## **1.7 RENDERS AND VISUALIZATIONS**

The consultant will deliver high-quality 3D renderings of the Ravi City Master Plan, along with visualizations presented in the form of a minimum 2-3-minute animation video. These visuals will be professionally crafted to provide a comprehensive and engaging representation of the city's master plan, showcasing key features and design elements.

## **1.8. QUALITY ASSURANCE**

Consultant will be responsible for quality checks to maintain data accuracy and ensure the reliability of the 3D Digital Twin to avoid crash or bugs in the model. Any discrepancies or errors that may arise will be promptly identified and addressed to maintain the integrity of the digital twin.

## **DELIVERABLES OF THE TASK**

- Project Inception Report
- A real-time 3D digital twin model accessible through both web and desktop interfaces including all necessary plugins and backend software components to ensure seamless operation.
- An Operational Manual on how to operate and update the digital model and trainings to end-users of operating various systems to be developed under this project.
- Fully Operational Data Analysis Tools Software/ Plugins/ Applications with Valid License of at least 1 year

## **TASK 2: PHYSICAL MODEL OF RAVI CITY**

The primary objective of this task is to create a three-dimensional Physical model of the distinctive features of Ravi City. This representation will take the form of a scaled-down physical model, mirroring the physical attributes & proposed features of the envisioned Ravi City Master Plans. The consultant will plan an arbitrary, non-scaled approach to develop the physical 3D model for the entire Ravi City, ensuring legibility of landmarks /amenities details at appropriate level. While the quantitative accuracy of individual urban settlements, including houses and buildings, may not be a primary focus, the overall integrity and essence of Ravi City will be faithfully reflected.

Following features of Ravi City will be developed physically but not limited to;

- Neighborhoods
- Primary and Secondary Roads (300 feet and 200 feet)
- River Promenade



- Forests
- Commercial Buildings
- Channelized River Ravi
- Barrages
- Landscaping on roads and in urban settlements
- City level Services (Hospitals, Universities, Farmers Market, Waste Water Treatment Plants, 500KV Grid Stations, etc)
- Lightening of the entire Master Plan at appropriate locations within buildings and outside environment to create a pleasant look at dark.

### Materials used in Physical Modelling

Physical modeling of Ravi City will involve the use of various water proof materials to create scaled-down representations of buildings, landscapes, roads and other city features. The consultant will use following or better quality damp proof materials for the model;

- Balsa Wood
- Acrylic Sheets
- Plastic Sheets
- Metal Wire
- Fabric
- Any other durable material required

### DELIVERABLES OF THE TASK

- Physical Model of Ravi City showing above features at legible scale not less than 20' x 30' with standing table.

### DELIVERABLES

The timeline for the completion of assignment will be 6 months. The payment schedule will be deliverable based in the following manner:

| Tasks                              | Deliverables  |
|------------------------------------|---|
| <b>Task 1</b><br>(3D Digital Twin) | <p>Deliverable 1: (<i>Project Inception report including work break down structure (WBS), project team, approach and methodology, project scheduling and deliverables etc.</i>)</p> <p>Deliverable 2: (<i>Schematic Land Use Planning of Ravi City as per Ravi city Master Plan Proposal</i>)</p> |





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|  |  |
|--|--|
|  | <p>Deliverable 3: <i>Draft (A real-time 3D digital twin model accessible through both web and desktop interfaces)</i></p> <p>Deliverable 4: <i>Final (A real-time 3D digital twin model accessible through both web and desktop interfaces)</i></p> <p>Deliverable 5: <i>3D Renders and Visualization of Ravi City Master Plan</i></p> <p>Deliverable 6: <i>Fully Operational Data Analysis Tools Software/ Plugins/ Applications with Valid License of at least 1 year</i></p> <p>Deliverable 7: <i>(Operational Manual and provide trainings to end-users of operating various systems to be developed under this project)</i></p> |
| <p><b>Task 2</b><br/>(Physical Model of Ravi City)</p> | <p>Deliverable 8: <i>(Initial Structure Plan for Physical Model)</i></p> <p>Deliverable 9: <i>(Installation of all physical features of Model)</i></p> <p>Deliverable 10: <i>(Installation of Electrical Features on Model)</i></p> <p>Deliverable 11: <i>(Final Physical 3D Model of Ravi City)</i></p>   |

The consultant will have to adhere to the following as well;

- PowerPoint presentation of all Tasks
- All the raw, processed and complete finalized data in soft (AutoCAD, Lumion, Twin Motion, 3D Max, Adobe suite files, and GIS files etc.) along with any software used and 3D model developed for conducting the tasks will be delivered as and when required basis.
- All licensed software's / plugin/ applications will be handed over to the client. Which should be valid for at least 1 year at the time of handing over it to the client.



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**PAYMENT**

The payment to the consultant will be deliverable based

| <b>Deliverables</b> | <b>Tasks</b>  | <b>Payment Schedule</b>    |
|---------------------|---|----------------------------|
| Deliverable 1       | Inception Report  | N/A                        |
| Deliverable 2       | Schematic Land Use Planning of Ravi City as per Ravi City Master 2023 Proposal for 3D | 5% of total Project Cost   |
| Deliverable 3       | Draft 3D Twin Model of Ravi City  | 10% of total Project Cost  |
| Deliverable 4       | Final 3D Twin Model of Ravi City  | 15 % of total Project Cost |
| Deliverable 5       | 3D Renders and Visualization of Ravi City   | 10% of total Project Cost  |
| Deliverable 6       | Operational Manual of 3D Twin software and its Training                               | 10% of total Project Cost  |
| Deliverable 7       | Fully Operational Data Analysis Tools   | 10% of total Project Cost  |
| Deliverable 8       | Initial Structure Plan for Physical Model   | 5% of total Project Cost   |
| Deliverable 9       | Installation of all physical features of Model  | 10% of total Project Cost  |
| Deliverable 10      | Installation of Electrical Features on Model  | 10% of total Project Cost  |
| Deliverable 11      | Final Physical 3D Model of Ravi City  | 15% of total Project Cost  |